Codified version as of 1 November 2023

The Law promulgated: TAR 1/12/2015, iden. code 2015-19114

The recast as of 1 May 2019:
No. 22.3-19, 24 January 2019, published TAR 2019-01-24, iden. code 2019-01067

HEAD OF THE STATE NUCLEAR POWER SAFETY INSPECTORATE

ORDER
ON THE APPROVAL OF NUCLEAR SAFETY REQUIREMENTS BSR-1.5.1-2019 "DECOMMISSIONING OF NUCLEAR FACILITIES"

30 November 2015 No. 22.3-216
Vilnius

Pursuant to Part 3 of Article 31 of the Republic of Lithuania Law on Nuclear Power and Point 1 of Article 4 and Point 1 of Article 11 of the Republic of Lithuania Law on Nuclear Safety:

I a p p r o v e Nuclear Safety Requirements BSR-1.5.1-2019 "Decommissioning of Nuclear Facilities" (attached).

Head Michail Demčenko

APPROVED

by Order No. 22.3-216
of the Head of the State Nuclear Power
Safety Inspectorate of 30 November 2015
(version of Order No. 22.3-19 of the Head of
the State Nuclear Power Safety Inspectorate of
24 January 2019)

NUCLEAR SAFETY REQUIREMENTS BSR-1.5.1-2019 "DECOMMISSIONING OF NUCLEAR FACILITIES"

CHAPTER I GENERAL PROVISIONS

1. Nuclear Safety Requirements BSR-1.5.1-2015 "Decommissioning of Nuclear Facilities" (hereinafter referred to as the "Requirements") establish the requirements set to planning, conducting and completing decommissioning of nuclear facilities, including the withdrawal of the license to carry out decommissioning, as well as special requirements set to the actions of a permanent shutdown of a nuclear facility seeking to prepare for carrying out decommissioning.

2. The Requirements are set to nuclear facilities (hereinafter referred to as the "NF") with the exception of radioactive waste disposal facilities. In applying and implementing the provisions of the Requirements, the graded approached must be followed, that is, qualities of the nuclear facility and the activity planned to be carried out, as well as the scope and probability of exposure to ionising radiation, which might occur due to carrying out decommissioning of a nuclear facility must be taken into consideration.

CHAPTER II REFERENCES

3. References to the following legal acts are made in the Requirements:

3.1. the Republic of Lithuania Law on Nuclear Safety;

3.2. the Republic of Lithuania Law on Nuclear Energy;

3.3. the Republic of Lithuania Law on the Management of Radioactive Waste;

3.4. the Republic of Lithuania Law on Waste Management;

3.5. the Republic of Lithuania Law on Construction;

3.6. Rules for Issuing Licenses and Permits in the Area of Nuclear Energy approved by Order No. 722 of the Government of the Republic of Lithuania of 20 June 2012 "On the Approval of Rules of the Procedure for Issuing Licenses and Permits in the Area of Nuclear Energy".

3.7. Lithuanian Hygiene Norm HN 73:2018 "Basic Radiation Safety Norms" approved by Order No. 663 of the Minister of Health of the Republic of Lithuania of 21 December 2001 "On Lithuanian Hygiene Norm 73:2018 "Basic Radiation Safety Norms";

3.8. Nuclear Safety Requirements BSR-1.9.1-2017 "Limits to Radioactive Discharge into the Environment from Nuclear Facilities and Requirements to a Plan for Radioactive Discharge into the Environment" approved by Order No. 22.3-89 of the Head of VATESI of 27 September 2011 "On the Approval of Nuclear Safety Requirements BSR-1.9.1-2017 "Limits to Radioactive Discharge into the Environment from Nuclear Facilities and Requirements to a Plan for Radioactive Discharge into the Environment";

3.9. Nuclear Safety Requirements BSR-1.9.2-2011 “Determination and Application of Clearance Levels of Radionuclides for Materials and Waste Generated During the Activities in the Area of Nuclear Energy with Ionising Radiation Sources ” approved by Order No. 22.3-90 of the Head of VATESI of 27 September 2011 “On the Approval of Nuclear Safety Requirements BSR-1.9.2-2018 „Derivation and Use of Clearance Levels of Radionuclides for Materials and Waste Generated During Activities in the Area of Nuclear Energy”;

3.10. Nuclear Safety Requirements BSR-1.9.3-2016 “Radiation Protection at Nuclear Facilities” approved by Order No. 22.3-95 of the Head of VATESI of 6 October 2011 “On the Approval of Nuclear Safety Requirements BSR-1.9.3-2016 “Radiation Protection at Nuclear Facilities”;

3.11. Nuclear Safety Requirements BSR-1.2.1-2014 “A Description of the Procedure for Nuclear Material Accounting and Control, and Provision of Information about Research and Development Activities” approved by Order No. 22.3-85 of the Head of VATESI of 30 May 2014 “On the Approval of Nuclear Safety Requirements BSR-1.2.1-2014 “A Description of the Procedure for Nuclear Material Accounting and Control, and Provision of Information about Research and Development Activities” and Repeal of some Orders of the Head of the State Nuclear Power Safety Inspectorate”;

3.12. Nuclear Safety Requirements BSR-1.8.2-2015 “A Description of the Procedure for Categories of Nuclear Facility Modifications and Implementation of Modifications” approved by Order No. 22.3-99 of the Head of VATESI of 7 October 2011 “On the Approval of Nuclear Safety Requirements BSR-1.8.2-2015 “A Description of the Procedure for Categories of Nuclear Facility Modifications and Implementation of Modifications”;

3.13. Commission Regulation (Euratom) No. 302/2005 of 8 February 2005 on the application of Euratom safeguards (OL 2005 L 54, p. 1);

3.14. Commission Regulation (EU) No. 1357/2014 of 18 December 2014 replacing Annex III to Directive 2008/98/EC of the European Parliament and of the Council on waste and repealing certain Directives (OL 2014 L 365, p.89);

3.15. Nuclear Safety Rules BST-1.5.1-2020 “The Evaluation of Compliance with Free Release Criteria of Buildings, Engineering Structures and Site of Nuclear Facilities” approved by Order No. 22.3-206 of the Head of VATESI of 20 December 2016 “On the Approval of Nuclear Safety Rules BST-1.5.1-2020 “The Evaluation of Compliance with Free Release Criteria of Buildings, Engineering Structures and Site of Nuclear Facilities”.

CHAPTER III
CONCEPTS AND DEFINITIONS

4. As used in these Regulations:

4.1. **Deferred dismantling of a nuclear facility** means the strategy of decommissioning of a nuclear facility – dismantling of this facility when structures and equipment contaminated with radionuclides are under surveillance, protected and supervised during a chosen period following which a nuclear facility is dismantled.

4.2. **Surrogate radionuclides** means gamma rays ^{60}Co and (or) ^{137}Cs whose activity can directly be measured without using any destructive methods and the correlation of their activity with that of radionuclides that are difficult to be measured, can be established.

4.3. **Decommissioning waste of a nuclear facility** means radioactive waste, other materials that have hazardous properties and other waste that is produced when decommissioning a nuclear facility.

4.4. **Strategy for decommissioning of a nuclear facility** means foreseen measures and actions seeking to decommission a nuclear facility in compliance with the requirements laid down to decommissioning. The following two possible decommissioning strategies of a nuclear facility are employed: immediate dismantling of a nuclear facility and deferred dismantling of a nuclear facility.

4.5. **Decommissioning actions of a nuclear facility** means the activities specified in the plan for decommissioning of a nuclear facility that are carried out seeking to gradually and systematically reduce contamination of a nuclear object with radionuclides to the end state of the nuclear facility (or) and its site specified in the final decommissioning plan.

4.6. **Decommissioning project of a nuclear facility** means a project according to which, during a certain period interrelated decommissioning actions of a nuclear facility are organised and implemented for the established objectives, with the exception of decontamination and (or) dismantling works carried out at the time of the final shutdown of a nuclear facility. The decommissioning project of a nuclear facility can be carried out in several stages.

4.7. **Preparatory activities for the decommissioning project of a nuclear facility** means technical activities, which are implemented during the permanent shutdown and decommissioning of a nuclear facility, and are carried out when preparing for planning, organising and carrying out the decommissioning project and (or) decontamination and (or) dismantling activities of a nuclear facility which are being conducted during its permanent shutdown.

4.8. **Permanent shutdown of a nuclear facility** means a stage of a life-cycle of a nuclear facility when the operation of that facility for which it has been constructed, exploited and used according to its main purpose is terminated without planning to recommence it. A permanent shut down of a nuclear facility starts with the moment of terminating the main activity of that facility and ends with issuance of a licence to carry out decommissioning of the nuclear facility.

4.9. **Decontamination** means removal or reduction of contamination of materials, equipment, systems and surfaces of structures with radionuclides by washing, heating them, applying chemical or electrochemical methods, mechanically cleaning them or using any other methods.

4.10. **Decontamination factor** is the ratio between the activity of radionuclides prior to decontamination and following it.

4.11. **End state of a nuclear facility and (or) its site** is the state of a nuclear facility itself and (or) its site defined by the criteria for the end state of the nuclear facility and (or) the site of the nuclear facility specified in the final decommissioning plan, upon attaining of which it is deemed that decommissioning of a nuclear facility has been completed.

4.12. **Final status radiological surveys** means radiological surveys thereby it is established whether concentration of the activity of radionuclides does not exceed free release levels of radioactivity and the surface activity values when only the surface activity is examined.

4.13. **Background radiation** means background radiation, which consists of cosmic radiation, ionising radiation of natural radioactive materials and radioactive materials that spread in the environment due to nuclear weapons testing.

4.14. **Scoping radiological surveys** means radiological surveys thereby, in measuring the ionising radiation dose rate and (or) the surface activity of radionuclides of the object under investigation, final contamination with radionuclides and its maximum values are established.

4.15. **Immediate dismantling of a nuclear facility** means the strategy for decommissioning of a nuclear facility when structures, systems and components are cleared up immediately after the permanent shutdown of a nuclear facility.

4.16. **Basic radiological surveys** means radiological surveys thereby the activity of surrogate radionuclides is determined, ionising radiation dose rates and values of the surface activity established by scoping radiological surveys are made more exact and the surface places of greater activity are determined.

4.17. **Verification radiological surveys** means radiological surveys thereby final results of radiological surveys are subject to an independent verification.

4.18. **Graded approach** means the approach following which resources in the sphere of nuclear safety are allocated or measures are used taking into consideration the effect of a nuclear facility or the activity in the sphere of nuclear energy or any other activity with nuclear and nuclear fuel cycle materials on safety and the level of risk they create.

4.19. **Radiological measurements** means measurements of the ionising radiation dose rate and the surface activity, as well as laboratory investigations of the samples taken.

4.20. **Radiological surveys** means actions thereby it is sought to determine the contamination of the object under investigation with radionuclides or its compliance with the free release levels of radioactivity and surface activity values when only the surface activity is examined in making radiological measurements and evaluating the information contained in the documents of operation and decommissioning of a nuclear facility and radiological measurements.

4.21. **The state of the brown field of a nuclear facility and (or) its site** means the end state of a nuclear facility and (or) its site upon attaining of which concentration of radionuclide activity in buildings, engineering structures and (or) sites (or a part thereof) exceeds the unconditional free release levels of radioactivity and the surface activity values when only the surface activity is examined and the use of buildings of this facility, engineering structures and (or) the site is possible only with restrictions due to the possible effect of ionising radiation.

4.22. **The state of the green field of a nuclear object and (or) its site** means the end state of a nuclear facility and (or) its site upon attaining of which concentration of radionuclide activity in buildings, engineering structures and (or) the site (or part thereof) does not exceed the unconditional free release levels of radioactivity and the surface activity values when only the surface activity is examined, and the restrictions of the use of building of this facility, engineering structures and (or) the site (or part thereof) due to possible effect of ionising radiation are not established.

4.23. Other definitions used in these Requirements have the meaning of the definitions used in the legal acts specified in Point 3 of the present Requirements.

CHAPTER IV
FINANCING OF DECOMMISSIONING OF A NUCLEAR FACILITY

5. Financial resources for decommissioning of a nuclear facility (hereinafter referred to as “facility”) and radioactive waste management must be accumulated, allocated and used following the procedure established in the legal act specified in Point 3.2 of the Requirements and other legal acts.

6. If, upon completion of decommissioning of the facility, the target end state of the facility and (or) its site is the brown field of a nuclear facility and (or) its site (hereinafter referred to as the brown field) it must be assured that sufficient financial resources shall be available for monitoring, surveillance and control of the facility throughout the time period necessary for performing those functions.

CHAPTER V
DECOMMISSIONING STRATEGY

7. The strategy for decommissioning a nuclear facility must be selected when planning the construction of a facility. A description of the strategy forms a part of the initial, updated and final decommissioning plans, which, together with these plans, is revised and updated where appropriate. The decommissioning strategy must be revised and the description of the strategy must be updated accordingly if another nuclear facility is planned to be constructed on the same site of the existing nuclear facility.

8. When selecting the decommissioning strategy, the National Energy Strategy and the Program on the Development of Radioactive Waste Management approved by the Seimas and (or) the Government of the Republic of Lithuania must be taken into consideration.

9. When selecting the decommissioning strategy whose selection must be substantiated and motivated in the description of the strategy, the possibility to ensure nuclear safety, radiation protection and physical security of a nuclear facility, economic factors, possible interaction and

interdependence of individual nuclear facilities, and the possible burden to be imposed on the future generations, as well as a loss of knowledge and experience must be taken into account.

10. The priority in selecting the decommissioning strategy is to be given to immediate dismantling of a nuclear facility. In case another decommissioning strategy rather than immediate dismantling is selected, the causes and motives for such selection must be provided.

11. When selecting deferred dismantling, nuclear safety, radiation protection and physical security must be ensured during the safe enclosure period of the nuclear facility. Upon commencing dismantling actions according to the strategy of deferred dismantling, amendments to the requirements set to nuclear safety, radiation protection and physical security, information storage, application of technologies and assurance of financing must be taken into consideration and it must be ensured that the nuclear facility will be dismantled safely and the actions that might lead to reasonably forecasted consequences to the future generations which are more dangerous than those allowable to the present generation will be avoided, and no undue burden will be imposed on the future generations.

12. The description of the decommissioning strategy shall contain a description of the selected decommissioning strategy, causes for that selection and the justification for the selection shall be specified, the timeframe for decommissioning shall be provided for, the foreseen management of radioactive waste shall be described, the desirable end state of the nuclear facility and its site, as well as their possible and their planned use in the future after the completion of decommissioning of the nuclear facility shall be described. Priority in selecting the end state of the nuclear facility and (or) its site must be given to the green field state of the nuclear facility and (or) its site (hereinafter referred to as the green field). In case the brown field end state of the nuclear facility and (or) its site is selected, reasons and arguments for its selection must be provided.

13. If, in carrying out decommissioning of a nuclear facility it is planned to leave other nuclear facilities on the site of the nuclear facility which were specified in the single common project and they were issued a common licence, the end state of the nuclear facility and (or) its site must be specified separately for each of these nuclear facilities and (or) its site.

14. Seeking to achieve that as many as possible buildings of a nuclear facility, engineering structures and a part of the site shall attain the green field state, the end state of a nuclear facility and (or) its site can be specified for separate buildings of a nuclear facility, engineering structures and (or) a part of the site individually.

15. If more than one nuclear facility is planned to be built on the site of a nuclear facility, taking into account interaction and interdependences between the facilities, the description of the decommissioning strategy must specify when and how it is planned to separate a part (parts) of the site seeking to achieve that restrictions on the future use of the site of the nuclear facility or a part thereof shall be removed.

CHAPTER VI
PLANNING DECOMMISSIONING OF A NUCLEAR FACILITY

SECTION ONE
GENERAL PRINCIPLES OF DECOMMISSIONING A NUCLEAR FACILITY

16. During the stages of assessing the site of the facility, designing, construction and recognising the facility as suitable to be used and during the stage of its operation, the measures and design solutions facilitating decommissioning of the facility must be planned, assessed and implemented. Taking into consideration technical solutions of the structures of the nuclear facility, contamination with radionuclides and monitoring of this contamination, these measures must be described and justified in the report on the safety analysis of the nuclear facility.

17. A nuclear facility must be designed so as to facilitate carrying out future decommissioning actions of a nuclear facility. To achieve this aim the following is necessary to be

done:

17.1. to use such materials to produce structures, systems and components of a nuclear facility which will be or can be contaminated with radionuclides during the operation of a nuclear facility, that could be easily decontaminated, and which would produce the smallest amounts of radioactive waste in terms of their activity and volume;

17.2. to use easily accessible and dismountable structures for technical and constructional solutions;

17.3. to reduce the amount of the materials that have hazardous properties as perceived in the way specified in the Annex to the legal act specified in Point 3.14 of the Requirements;

17.4. to optimise the arrangement of the structures of a nuclear facility, service roads and transportation routes on the site of the facility and on the premises so that it would be possible to install equipment necessary to decontaminate, dismantle and manage decommissioning waste, to dismantle and remove large components, to be able to perform decontamination, dismantling and other decommissioning actions as conveniently as possible, and to use remote control facilities to dismantle highly contaminated components;

17.5. to evaluate the amounts of radioactive waste to be produced during the operation and decommissioning of the nuclear facility, to foresee the needs and possibilities to treat this waste and dispose of it in radioactive waste repositories;

17.6. to reduce the amounts of construction materials, structures, systems and components of the nuclear facility, which are planned to be managed as radioactive waste upon completion of decommissioning of the nuclear facility.

18. during the operation of the nuclear facility, the holder of the licence specified in Points 2 and 3 of Part 1 of Article 22 specified in Subparagraph 3.1 of the Requirements (hereinafter referred to as the licensee) shall implement the measures which can facilitate decommissioning of the nuclear facility:

18.1. reduction of contamination of structures, systems and components with radionuclides;

18.2. maintenance of protective coatings and installation of new, easily decontaminated protective coatings and (or) installation of barriers confining radionuclides and (or) suppressing ionising radiation;

18.3. management of radioactive waste that is produced during decommissioning of the facility;

18.4. storage of the information related to design, construction and operation of a nuclear facility and radioactive waste management;

18.5. accumulation and storage of the information about modifications of the nuclear facility;

19. prior to construction of the facility radiological surveys of the site of the facility shall be carried out aimed at establishing background radiation of the site of the facility. These investigations shall be resumed prior to starting the activities according to licences specified in Points 1 or 2 of Article 22 of the legal act specified in Subparagraph 3.1 of the Requirements. In carrying out decommissioning of the facility the results of these radiological surveys shall be used when making decisions on a further use of the site of the facility upon completion of decommissioning of the facility, including the decisions on establishing or removing restrictions imposed on the use of the site of the facility.

20. In case the nuclear facility whose site did not undergo radiological surveys at the moment specified in Point 19 of the Requirements is being operated, in conducting decommissioning of the facility, the natural background of ionising radiation of the analogous site where the activity related to nuclear energy was not carried out and which has similar features (for example, the geographical location, geological properties, the relief, etc.) shall be used.

21. Following the procedure established in the legal acts specified in Subparagraphs 3.1 and 3.2 of the Requirements the initial, updated and final decommissioning plans ensuring safe decommissioning of the facility and the achievement of the desirable end state of the nuclear facility and its site shall be drawn up, adjusted and submitted.

22. If there are two or more nuclear facilities whose sites adjoin each other, in preparing the decommissioning plans of these facilities it is necessary to take their possible interaction and interdependence into consideration, to coordinate decommissioning actions and the use of respective resources and infrastructure.

23. Licensees specified in Points 1-4 of Part 1 of Article 22 of the legal act specified in Subparagraph 3.1 of the Requirements, during the entire process of decommissioning of the facility, including construction of the facility, operation of the facility, planning, carrying out and completing decommissioning of the facility shall apply the graded approach taking into consideration the amount and probability of exposure to ionising radiation produced by decommissioning of the facility.

24. The scope of information and the level of its accuracy provided in the facility decommissioning plans, reports on decommissioning of the facility, descriptions of decontamination and (or) dismantling actions, descriptions of decommissioning projects and the documents substantiating their safety shall be proportional to the complexity and the scope of decommissioning actions of the facility, at the same time taking into consideration the stage of the lifetime of the facility during which it is planned to carry out planned decommissioning actions assessing the risks and hazards related to carrying out the works.

25. During decommissioning of the facility, taking into consideration the scope of possible hazards, nuclear safety, radiation protection and physical security shall be ensured by consistently implementing the defence in depth principle as it is perceived in Point 3 of the legal acts specified in Subparagraph 3.12 of the Requirements.

SECTION TWO
INITIAL DECOMMISSIONING PLAN

26. The initial decommissioning plan shall be prepared and submitted to VATESI in the procedure established in Part 10 of Article 32 of the legal act specified in Subparagraph of 3.1 of the Requirements together with other documents to obtain the licence specified in Point 1 or 3 of Part 1 of Article 22 of the legal act specified in Point 3.1 of the Requirements.

27. The objective of the initial decommissioning plan is to plan the need for financial resources necessary to carry out safe decommissioning of the facility in advance, and to foresee the sources of financing, to plan preliminary measures that facilitate decommissioning of the facility and to accumulate the information that is significant to planning the course of decommissioning and ensuring nuclear safety, radiation protection and physical security

28. Taking into account the selected decommissioning strategy, the initial decommissioning plan shall contain the following information:

28.1. a description of the decommissioning strategy at the same time indicating the main actions of decommissioning of the facility (for example, unloading of spent nuclear fuel, isolation and modification of systems, dismantling of structures, systems and components, management of the site of the facility);

28.2. the described and analysed variants of the implementation of decommissioning of the facility, which shall confirm that the selected decommissioning strategy is feasible and executable;

28.3. a description of the principles and measures of ensuring nuclear safety, radiation protection and physical security during decommissioning of the facility;

28.4. the substantiation that decommissioning of the facility using the available technologies for decommissioning or future new technologies will be conducted safely;

28.5. the assessment of the amount of waste to be produced during decommissioning and a description of the planned ways of storage and disposal of radioactive waste

28.6. financing needs for decommissioning of the facility and for managing radioactive waste produced during it and possible sources of financing these actions.

29. In those cases when, following the legal acts specified in Subparagraph 3.1 of the Requirements or legal acts implementing it the results of the safety analysis of decommissioning the

facility and substantiating results are not presented in a separate document, following the provisions laid down in Points 53, 54 and 55 of the Requirements, the results of the safety analysis of decommissioning of the facility carried out and the substantiating results shall be described in the decommissioning plan.

SECTION THREE
UPDATED DECOMMISSIONING PLAN

30. Together with other documents to obtain the license specified in Point 2 of Part 1 of Article 22 of the legal act specified in Subparagraph 3.1 of the Requirements or to obtain permissions specified in Points 2 and 3 of Part 2 of Article 22 of the legal act specified in Subparagraph 3.1 of the Requirements, the licensee shall submit the updated decommissioning plan to VATESI.

31. Taking into consideration the provisions laid down in Point 32 of the Requirements, the updated decommissioning plan shall contain more exactly defined and updated information that was specified in the initial decommissioning plan.

32. When preparing, updating and revising the updated decommissioning plan, it is necessary to take into account changes in the causes and motives for selecting the decommissioning strategy, in the duration, limits and conditions of decommissioning of the facility, relevant international and other experience gained in carrying out decommissioning, amendments to the legal acts regulating nuclear safety, radiation protection and physical security of decommissioning, changes in the sphere of decommissioning technologies and radioactive waste management, the modifications of the nuclear facility made, essential deviations from the initial need for funding (more than 30 per cent of the initial need for funding) and (or) the deadlines set for completion of decommissioning actions (more than 30 per cent of the planned duration of carrying out decommission actions).

33. Structures, systems and components of the nuclear facility planned to be used during decommissioning shall be specified in the updated decommissioning plan and the feasibility of their use shall be confirmed. Also, modifications of the present structures, systems and components necessary to carry out decommissioning of the facility shall be identified in the decommissioning plan.

34. The need for new equipment to carry out decommissioning of the facility, to store and manage radioactive waste shall also be specified in the updated decommissioning plan.

35. When operating the facility, the licensee shall periodically but not rarer than the periodicity at which the safety analysis and substantiation of the facility are made within the time period specified in Part 7^1 of Article 32 of the legal act specified in Subparagraph 3.1 of the Requirements, shall revise the updated decommissioning plan and, where appropriate, update it taking into consideration the provisions specified in Point 32 of the Requirements.

36. Apart from the case specified in Point 35 of the Requirements, the updated decommissioning plan must also be revised and updated, where appropriate, when a nuclear and (or) radiological accident or a nuclear incident occurs.

37. After the updated decommissioning plan has been updated, the licensee shall submit that plan to VATESI for agreeing. VATESI shall take a decision on the agreeing of that document within the period specified in Part 2 of Article 34 of the legal act specified in Subparagraph 3.1 of the Requirements.

.

SECTION FOUR
FINAL DECOMMISSIONING PLAN

38. The final decommissioning plan shall be prepared, adjusted and approved following Part 4 of Article 32 of the legal act specified in Subparagraph 3.2 of the Requirements.

39. Seeking to ensure safe decommissioning of the facility and taking into consideration the requirements of the legal acts set to the decommissioning actions specified in this plan, the final decommissioning plan shall contain the following information:

39.1. a description of the facility, its site and the region, which can be affected taking into consideration the environmental impact of the planned economic activity in carrying out decommissioning of the facility, the predictable evaluation criteria and the conditions;

39.2. a description of the operation history of the nuclear facility, the use of the facilities and their site during operation of the nuclear facility and after it has been terminated;

39.3. a description of the radiological characterisation of the site and buildings, structures, systems and components of the facility evaluating possible contamination of the structures, systems and components of the facility, soil, surface and ground water with radionuclides;

39.4. a description of the decommissioning strategy;

39.5. if deferred dismantling of the facility is planned, the plan of monitoring, protection and technical maintenance of the facility seeking to ensure a safe implementation of the decommissioning strategy;

39.6. a description of methods and procedures which, in carrying out decommissioning of the facility shall be applied in evaluating whether concentration of radionuclide activity in materials, waste, buildings, engineering structures and the site of the facility (or part thereof) does not exceed the free release levels and the surface activity values when only the surface activity is examined;

39.7. a description of decommissioning phases and (or) projects, if all decommissioning actions are divided into phases and (or) projects, and (or) a description of decommissioning actions (for example, unloading of spent nuclear fuel, isolation and modification of systems, dismantling and decontamination of structures, system and components, management of decommissioning waste, destruction of the structures, management of the site of the facility) specifying the order of priority and the terms of carrying them out;

39.8. a description of the need for new infrastructure (for example, equipment for managing radioactive waste, etc.) necessary to carry out decommissioning and manage decommissioning waste;

39.9. a description of dismantling, decontamination, decommissioning waste management and other technologies, which are planned to be used during decommissioning, including a description of new methods and technologies planned to be employed during decommissioning and (or) those that were not earlier tested in the sector of nuclear energy by the licensee specified in Points 2-4 of Part 1 of Article 22 of the legal act specified in Subparagraph 3.1 of the Requirements;

39.10. a description of decommissioning waste management specifying sources and quantities of decommissioning waste to be produced, its classification and sorting out according to their physical condition, combustibility, chemical and radiological properties, separation criteria, the possibility to recycle or use them repeatedly;

39.11. a description of the need for the staff competent to ensure safe decommissioning of the facility;

39.12. a description of the principles of organising and controlling decommissioning of the facility, including a description of the management system and safety culture, the staff management policy and cooperation with the providers of services and commodities, simultaneously evaluating the need for organising training and raising qualification;

39.13. a description of international experience gained by other persons who carry out activities in the nuclear energy sector and experience of the licensee specified in Point 3 of Part 1 and 2 of Article 22 of the legal act specified in Subparagraph 3.1 of the Requirements, gained during the operation of the facility, which can be adapted to decommissioning of the facility;

39.14. the evaluation of occupational exposure of the employees and a description of radiation safety measures, which shall be applied during decommissioning of the facility;

39.15. an indication whether selection of the planned economic activity of decommissioning of the facility will be made due to the environmental impact assessment or the assessment of the environmental impact.

39.16. an assessment and description of the need for funding decommissioning actions, including management of decommissioning waste and the construction of the infrastructure necessary for that management (if additional infrastructure is necessary to be installed), recultivation of the site of the facility and other actions specified in the final decommissioning plan;

39.17. a description of the end state of the facility and (or) its site to be attained, including the final arrangement criteria (for example, concentration of radioniclide activity in structures, engineering structures and (or) the site (or a part thereof) does not exceed the free released radioactive levels and the surface activity values when only the surface activity is examined), and a possible and planned further use of the site and structures upon completion of decommissioning, including information about the opinion and recommendations expressed by the stakeholders and the public as to the end state of the facility and its site to be attained, the final arrangement criteria, a possible and planned future use of the site and structures upon completion of decommissioning and having evaluated the effect of ionising radiation, and how this opinion and recommendations were assessed if such information (opinion and recommendations) was received.

40. The licensees specified Points 2-4 of Part 1 of Article 22 of the legal act specified in Subparagraph 3.1 of the Requirements, at least once in 10 years from the moment of the approval of the final decommissioning plan, shall revise the final decommissioning plan and, where appropriate, update it. When updating the final decommissioning plan experience gained during decommissioning of the facility, changes in the nuclear safety requirements and rules, technologies, reasons and motives for selecting the decommissioning strategy, the schedule of carrying out decommissioning, the course of decommissioning, the needs for actual costs and financial resources shall be taken into consideration. The final decommissioning plan must contain information on the periodicity of revision and update of the final decommissioning plan and the planned deadlines for revision and update of this plan.

40^{1}. The licensees specified Points 2-4 of Part 1 of Article 22 of the legal act specified in Subparagraph 3.1 of the Requirements may, on their own initiative, link the periodicity of the review and update of the final decommissioning plan to the planning period of the funds required for decommissioning and (or) to other factors and conditions that have impact on decommissioning planning. In this case, when determining the periodicity of the review and update of the final BEO decommissioning plan, the condition of the periodicity of review and update of the final decommissioning plan, which is specified in Point 40 of the Requirements, must also be met.

41. The final decommissioning plan shall also be revised and updated if during decommissioning a nuclear and (or) radiological accident occurs on the site of the facility and (or) the site adjoining it, and (or) if circumstances arise due to which the definite deadline for completion of decommissioning changes for more than five years.

42. Having updated the final decommissioning plan, the licensee specified in Points 2-4 of Part 1 if Article 22 of the legal act specified in Subparagraph 3.1 of the Requirements shall submit this plan for agreeing according to the procedure specified in Part 4 of Article 32 of the legal act specified in Subparagraph 3.2 of the Requirements. VATESI shall take a decision on the agreeing of that document within the time specified in Part 2 of Article 34 of the legal act specified in Subparagraph 3.1 of the Requirements.

CHAPTER SEVEN
DECOMMISSIONING MANAGEMENT

43. The licensee specified in Point 4 of Part 1 of Article 22 of the legal act specified in Subparagraph 3.1 of the Requirements shall revise the normative technical documents used when carrying out decommissioning and, having taken into consideration the changed conditions of the economic activity, update or prepare new documents on the basis of which the employees and natural persons of the licensee and the legal entities providing services to the licensee will carry out their activities.

44. The licensee shall prepare and implement the employee training programme, which shall be expediently adapted to carrying out decommissioning actions (for example, decontamination, dismantling, work with remote control equipment, etc.) and acquiring and developing practical skills (for example, employee training on specially equipped premises, imitation of complex major conditions of decommissioning actions to be performed, etc.).

45. The licensee shall ensure that the individuals carrying out decommissioning actions shall have necessary skills, competence and shall be adequately trained seeking to carry out decommissioning actions safely.

46. The licensees specified in Points 2-4 of Part 1 of Article 22 of the legal act specified in Subparagraph 3.1 of the Requirements shall ensure that with the staff turnover, knowledge and experience gained during operation and decommissioning of the nuclear facility will be imparted and accessible to those people who will carry out decommissioning of the facility.

47. The licensee shall ensure that order and cleanliness on the premises of the facility and (or) on its site is maintained in carrying out decommissioning actions, so that proper work conditions for carrying out safe conducting of decommissioning actions shall be created, conditions for a nuclear facility's operations and supervision shall not be worsened, the risk of fire shall not increase and additional contamination with radionuclides shall be avoided. Also, seeking to maintain order and cleanliness of the nuclear facility, the licensee shall ensure that the use of materials and temporary waste storage sites (for example, storage, warehousing, etc.) shall be controlled and limited.

48. The licensee shall ensure that during decommissioning of the facility the structures, systems and components, pipelines and utility lines important to the safety of the nuclear facility shall be marked and that this marking is accurate and complies with the nuclear safety regulatory technical documents and activities performed by the facility at that time.

49. The licensee specified in Points 2-4 of Part 1 of Article 22 of the legal act specified in Subparagraph 3.1 of the Requirements shall develop the system of keeping and managing the documents related to decommissioning of the facility (for example, records about operation of the facility, the use of dual use nuclear goods, information about materials contaminated with radionuclides and waste, as well as their quantities, reports on nuclear and radiological accidents, nuclear incidents and unusual events, etc.) so that accessibility and traceability of these data shall be ensured.

50. Prior to carrying out decommissioning the licensee shall collect data about dual use nuclear goods and quantities of radioactive waste and materials present in the facility and on its site after the permanent shutdown of the facility. During decommissioning of the facility data about dual use nuclear goods and quantities of radioactive waste and materials present in the facility and on its site shall be constantly updated.

51. The licensees specified in Points 2-4 of Part 1 of Article 22 of the legal act specified in Subparagraph 3.1 of the Requirements shall ensure that all the important information related to the site, operation, decommissioning of the facility, termination of decommissioning and the evaluation of safety, as well as radioactive waste management shall be handled, stored, traced and transferred to the activity, which will be carried out following decommissioning of the facility.

CHAPTER EIGHT
SAFETY ANALYSIS AND JUSTIFICATION OF DECOMMISSIONING

SECTION ONE
PRINCIPLES OF MAKING SAFETY ANALYSIS AND JUSTIFICATION OF DECOMMISSIONING

52. A safety analysis and substantiation of decommissioning actions provided for in the decommissioning plan shall be made to show that these planned decommissioning actions are in compliance with the requirements set to these action in nuclear safety normative technical

documents and other legal acts regulating nuclear safety, radiation protection and physical security, as well as accounting and control of nuclear materials.

53. Having made the safety analysis and substantiation of decommissioning of the facility, the applicants that appeal for issuance of the licenses specified in Points 2-4 of Part 1 of Article 22 of the legal act specified in Subparagraph 3.1 of the Requirements or the licensees specified in Points 1-4 of Part 1 of Article 22 of the legal acts specified in Subparagraph 3.1 of the Requirements shall have done the following:

53.1. have identified all the ways of exposure to radiation taking into consideration the external events and the decommissioning actions;

53.2. have evaluated possible exposure to radiation under usual decommissioning of the facility conditions;

53.3. have evaluated whether the selected measures for ensuring radiation protection and protection of employees and the inhabitants against a harmful effect of radiation in carrying out decommissioning shall guarantee that the principle of optimising radiation protection shall be implemented and also taking into consideration economic and social factors, shall be limited in the procedure established in the legal act specified in Subparagraph 3.7 of the Requirements, including preparedness of the applicant or the licensee to react in cases of nuclear and (or) radiological accidents and nuclear incidents.

54. The applicants that appeal for issuance of the licenses specified in Points 2-4 of Part 1 of Article 22 of the legal act specified in Subparagraph 3.1 of the Requirements or the licensees specified in Points 1-4 of Part 1 of Article 22 of the legal act specified in Subparagraph 3.1 of the Requirements, in making a safety analysis and substantiation shall have:

54.1. to document how the requirements laid down in nuclear safety normative technical documents and other legal acts regulating nuclear safety, radiation protection and physical security and accounting and control of nuclear materials, as well as safety criteria, are implemented;

54.2. to carry out a systematic assessment of risks and hazards taking into consideration the nature, scope and probability of these hazards and the effect of ionising radiation determined by these hazards on the employees, the inhabitants and the environment under both normal decommissioning of the facility conditions and if incidents and (or) accidents occur;

54.3. to assess reduction in the levels of contamination with radionuclides and exposure to ionising radiation, which will be achieved in the course of carrying out decommissioning actions;

54.4. to identify safety measures, criteria, boundaries and conditions, which shall be applied to decommissioning actions seeking to ensure the implementation of the requirements laid down in nuclear safety normative technical documents applied to these actions and in other legal acts regulating nuclear safety, radiation protection and physical security of these actions and accounting and control of nuclear materials during the entire period of decommissioning of the facility.

55. In performing the safety analysis and substantiation of decommissioning of the facility, safety functions performed by the structures, systems and components of the facility, as well as the classification of the structures, systems and components of the facility according to the impact on safety shall be revised. Taking into consideration this analysis, safety functions necessary to carry out decommissioning of the facility shall be established seeking to ensure protection of the employees, the inhabitants, their property and the environment against a harmful effect of ionising radiation including safety functions necessary to carry out decommissioning of the facility that were provided for earlier in the project and the structures, systems and components important to the safety of the facility ensuring them, as well as it shall be substantiated that the latter will be able to perform these functions during the planned decommissioning actions and in case the initial events that are established in making the analysis and substantiation take place. The substantiation of establishing the necessity of these functions, as well as assurance of performing these functions in carrying out decommissioning of the facility shall be specified in the report on the safety analysis of decommissioning of the facility.

SECTION TWO

PREPARATION AND SUBMISSION OF THE SAFETY ANALYSIS REPORT ON DECOMMISSIONING OF THE NUCLEAR FACILITY

56. To obtain the licence specified in Point 4 of Part 1 of Article 22 of the legal act specified in Point 3.1 of the Requirements, the applicant, together with the documents, shall submit the safety analysis report on decommissioning of the facility to VATESI.

57. The safety analysis report on decommissioning of the facility is a document thereby the results of the safety analysis and substantiation are registered officially after the safety analysis and substantiation of the facility has been made, following the provisions laid down in Points 53, 54, and 55 of the Requirements, confirming that the decommissioning actions shall be carried out in compliance with the requirements set to them in nuclear safety normative technical documents and other legal acts regulating nuclear safety, radiation protection and physical security of these actions.

58. The safety analysis report on decommissioning of the facility shall contain the following information:

58.1. a description of ensuring nuclear safety, radiation protection and physical security of decommissioning of the facility applying the defence in depth principle, of main tasks, the ways and measures of implementing them taking into consideration the selected decommissioning strategy and the planned course of carrying out decommissioning of the facility;

58.2. the establishment and description of the nuclear and radiation safety criteria and conditions of decommissioning necessary to carrying out safe decommissioning of the facility;

58.3. a description of the classification of structures, systems and components of the facility according to their effect on safety assessing the functions they perform and operation throughout all decommissioning phases, including but not limiting oneself to nuclear and (or) radiological accidents, nuclear incidents foreseen during the initial events, following safety requirements laid down in the legal acts, standards regulating accounting and control of nuclear safety, radiation protection, physical security and nuclear materials or safety requirements specified in the normative technical documents of the licensee specified in Points 1-4 of Part 1 of Article 22 of the legal act specified in Subparagraph 3.1 of the Requirements;

58.4. a list of structures, systems and components important to the safety of a nuclear facility;

58.5. the substantiation of a safe use of new methods and technologies planned to be used in the nuclear energy sector, and (or) those that have not been used by the licensees specified in Points 2-4 of Part 1 of Article 22 of the legal act specified in Subparagraph 3.1 of the Requirements in conducting decommissioning before;

58.6. a description of the order of priority in decommissioning actions, the course of implementing decommissioning projects and the assessment and substantiation of interrelationships between these projects;

58.7. an assessment of safety aspects related to the site of the facility and the actions planned to be performed therein in carrying out decommissioning;

58.8. a description of the analysis and substantiation seeking to ensure nuclear and radiation safety of decommissioning in case the foreseen initial events, which can determine the excess or violation of the safety criteria and emission of radionuclides into the environment exceeding the established limit activity of radionuclides shall occur, at the same time providing for preventive technical and organisational measures for softening the consequences of possible foreseen initial events;

58.9. a description of managing aging of structures, systems and components of the facility important to safety;

58.10. a substantiation of ensuring fire safety of the structures, systems and components of the facility of importance to safety in carrying out decommissioning of the facility;

58.11. a description of ensuring emergency preparedness in carrying out decommissioning of the facility;

58.12. a description of the goals of ensuring physical security and generalised measures thereby these goals are sought to be achieved during decommissioning of the facility. No information constituting a State and (or) official secret can be specified in this part;

58.13. a comparison of the results of the decommissioning safety analysis and substantiation with the safety criteria established in the safety analysis report on decommissioning of the facility and the conclusions concerning acceptability of decommissioning of the facility from the point of view of safety.

SECTION THREE
REVISION OF AND UPDATING THE SAFETY ANALYSIS REPORT FOR DECOMMISSIONING

59. Seeking to ensure that relevant and valid information shall be presented in the safety analysis report for decommissioning and safe conducting of decommissioning shall be substantiated during the whole period of decommissioning of the facility the licensee, where appropriate, shall revise and update the safety analysis report on decommissioning and providing there is at least one of the following conditions:

59.1. prior to implementing the major decommissioning phases and (or) projects specified in the final decommissioning plan;

59.2. the final decommissioning plan is being updated;

59.3. the legal acts establishing the requirements significant to nuclear safety, radiation protection and physical security when carrying out decommissioning are amended and (or) new ones are adopted.

59^{1}. In the event of changes in the decommissioning implementation plans and (or) the information specified in the final decommissioning plan, based on which the safety analysis for decommissioning and safety justification of these works was performed, and to ensure that the decommissioning safety analysis and justification are in line with the planned to perform decommissioning work and safety of decommissioning is justified, the decommissioning license holder must review and update the safety analysis report for decommissioning if at least one of the following conditions is met:

59^{1}.1. there is a necessity and (or) there is a need to carry out decommissioning works in a different way and (or) in a different sequence and (or) in terms that differ from the implementation method and (or) schedule of these works specified in the final decommissioning plan, and this determines reviewing the safety functions, criteria and conditions required for safe decommissioning specified in the safety analysis report for decommissioning;

59^{1}.2. as a result of planned decommissioning works, initial events previously not evaluated in the safety analysis report for decommissioning may arise, which may lead to non-compliance with safety criteria or the release of radionuclides into the environment exceeding the established limit activity of radionuclides, and therefore they must be analyzed and evaluated from a safety point of view.

60. When revising and updating the safety analysis report on decommissioning, the following shall be taken into consideration:

60.1. the results of revision and monitoring of the facility and the course of carrying out decommissioning of the facility establishing the present condition of the structures, systems and components of the facility;

60.2. the results of the radiological surveys of the facility;

60.3. amendments to the final decommissioning plan;

60.4. organisational preparedness of the licensee to carry out decommissioning actions;

60.5 assurance of nuclear safety, radiation protection and physical security, the management system and its effectiveness;

60.6. the results of the assessment of the exposure of the staff and the inhabitants to radiation;

60.7. human resources management, the requirements set to their qualification;

60.8. emergency preparedness;

60.9. decommissioning waste management;

60.10. ageing of the structures, systems and components of the facility important to safety during decommissioning;

60.11. scientific and technological innovations;

60.12. the changed decommissioning conditions, including climate change and external natural factors and the factors determined by human activities;

60.13. modifications made when conducting decommissioning;

60.14. new nuclear safety requirements and rules and (or) changes thereof;

60.15. one's own experience of the operation and decommissioning of the facility and experience accumulated by other persons in carrying out activities in the nuclear energy sector;

60.16. fire safety requirements set to the structures, systems and components of the facility that are important to safety.

61. When revising and updating the safety analysis report on decommissioning, the licensee shall verify the records and carry out radiological surveys and make measurements, which would enable the descriptions of inventory of radioactive waste and other materials that have hazardous properties, as well as the sites of this waste and materials in the territories of both the facility and around the facility, which potentially can be exposed to ionising radiation, to be made more exact.

62. In case unusual events occur when carrying out decommissioning, the licensee shall examine these events following the procedure established in Article 37 and Part 12 of Article 32 of the legal act specified in Subparagraph 3.1 of the Requirements and implement the corrective measures preventing the recurrence of such events and ensuring safe decommissioning of the facility following the safety criteria and conditions established in the safety analysis report on decommissioning.

63. Information provided in the safety analysis report on decommissioning and the updates of this analysis shall be presented taking into consideration the information presented in the final decommissioning plan and the updates of that plan.

64. The licensee shall submit the updated safety analysis report on decommissioning to VATESI for agreeing. VATESI takes a decision on the agreeing of the updated safety analysis report on decommissioning within the time period specified in Part 2 of Article 34 of the legal act specified in Point 3.1 of the Requirements.

CHAPTER IX
USE AND DISMANTLING OF STRUCTURES, SYSTEMS AND COMPONENTS DURING DECOMMISSIONING OF THE FACILITY

65. The licensee, taking into consideration his own experience of operation and decommissioning of the facility and experience accumulated by other persons carrying our activities in the nuclear energy sector, the decommissioning actions planned and the course of decommissioning, in carrying out decommissioning shall revise the limits and conditions of the use of structures, systems and components of the facility important to its safety.

66. When revising and updating the safety analysis report on decommissioning, the licensee shall revise classification of structures, systems and components of the facilities according to their impact on safety and update the list of structures, systems and components of the facility important to its safety.

67. Only those structures, systems and components that are no longer in operation and are not planned to be put in operation in the future and that have no effect on the safety of the facility can be dismantled during decommissioning. If these structures, systems and components are dismantled, taking this into account, programmes of technical maintenance, monitoring and inspection of these structures, systems and components of the facility shall be updated.

68. If it is planned to dismantle the structures, systems and components of the facility which perform safety functions (for example, a protective cover, suppressing ionising radiation, cooling,

ventilating) alternative solutions and engineering measures, which would perform analogous safety functions during the entire time period necessary to perform these functions, shall be provided for. Dismantling of these structures, systems and components is possible after it has been proved that they will no longer be important to safety after alternative solutions and engineering measures have been implemented. Substantiation and implementation of the safety of alternative solutions and engineering measures must be carried out following the legal act specified in Subparagraph 3.12 of the Requirements.

69. When installing new structures, systems and components of the facility during decommissioning it is necessary to substantiate that they will operate safely and will match with the already installed structures, systems and components of the facility. These actions shall be implemented following the legal act specified in Subparagraph 3.12 of the Requirements.

70. Seeking to ensure that suitability, reliability and functionality of the structures, systems and components of the facility important to safety during decommissioning shall constantly satisfy the criteria and the conditions specified in the safety analysis report on decommissioning, the NF decommissioning license holder shall prepare and implement documents of technical maintenance, monitoring of the structures, systems and components of the facility important to safety, including programmes of both tests and checks. These documents must be prepared taking into consideration the safety criteria and the conditions established in the safety analysis report on decommissioning and shall be revised taking into account one's own experience of operation and decommissioning of the facility and experience accumulated by other persons carrying out activities in the nuclear energy sector and constant changes during decommissioning.

71. During decommissioning the NF decommissioning license holder shall assess deterioration of the properties of the structures, systems and components of the facility of important to safety due to their aging and, if necessary, ensure the continuation of resources of operation of the structures, systems and components of the facility important to safety.

72. The NF decommissioning license holder shall register, store, analyse and revise the information related to technical maintenance, monitoring, including tests and checks, of the structures, systems and components of the facility important to safety during decommissioning. If required, corrective measures (for example, repair, replacement, etc,) shall be implemented and (or) amendments to the documents of supervision of technical maintenance, including tests and checks, shall be made.

CHAPTER X
MANAGEMENT OF DECOMMISSIONING WASTE AND MATERIALS

73. In carrying out decommissioning actions the licensee shall separate radioactive waste from other waste and seek to minimize the amounts of radioactive waste produced. Combustible radioactive waste shall be separated from incombustible radioactive materials.

74. If the licensee no longer wants to apply the radiation safety requirements set to the materials, waste, equipment, devices, individual buildings of the facility, engineering structures and (or) the site of the facility (or a part thereof) formed or being used in carrying out the activity of the nuclear energy sector, as well as to those contaminated with radionuclides or containing radionuclides, the conditions and criteria specified in the legal act specified in Subparagraph 3.9 of the Requirements shall be followed, including the unconditional clearance levels of the activity concentration values determined in Annex 1 of the legal act specified in Subparagraph 3.9 of the Requirements and the surface activity values of radionuclides determined in Annex 2 of the legal act specified in Subparagraph 3.9 of the Requirements, when only surface activity is tested (hereinafter referred to as unconditional clearance levels and surface activity values of radionuclides when only surface activity is measured).

75. During permanent shutdown and decommissioning of a nuclear facility, the licensee specified in Points 2-4 of Part 1 of the legal act specified in Subparagraph 3.1 of the Requirements, in order to justify that the concentration of radionuclide activity in individual buildings, engineering

structures and (or) on the site of the facility (or its part) does not exceed the free release radioactive levels and the surface activity values when only the surface activity is examined, shall determine compliance of radionuclide contamination of buildings, engineering structures and (or) site of the facility (or its part) with free release radioactive levels and the surface activity values when only the surface activity is examined, in accordance with the legal act specified in Subparagraph 3.15 of the Requirements.

76. Decommissioning waste and materials in which concentration of radionuclide activity exceeds the free release radiological levels and the surface activity values when only the surface activity is examined, shall be treated in the procedure established in the legal act specified in Subparagraph 3.3 of the Requirements and the legal acts implementing it.

77. The licensee shall ensure traceability of all decommissioning waste produced in carrying out the decommissioning actions. Both when planning decommissioning and when carrying out the decommissioning actions, the licensee shall assess the amounts of decommissioning waste and provide for the ways of collecting, sorting out, processing, transporting, storing and disposing them in radioactive waste repositories.

78. Waste, which contains radioactive and hazardous properties, shall be treated in the same way as radioactive waste. This waste must be treated taking into consideration its properties.

79. The licensee shall ensure that the documents containing the information about the amounts of decommissioning waste produced when carrying out the decommissioning actions, its treatment, its further use and recycling, radioactive waste stored on the site of the facility, transferred for treatment, storage and disposing of in a radioactive waste repository shall be controlled in the procedure established by the Law on Documents and Archives of the Republic of Lithuania.

CHAPTER XI
ENSURING RADIATION PROTECTION IN CARRYING OUT DECOMMISSIONING OF THE FACILITY

80. In carrying out decommissioning the licensee must ensure protection of the employees, inhabitants, their property and the environment against a harmful impact of ionising radiation following the procedures established in the legal acts specified in Subparagraphs 3.8, 3.9 and 3.10 of the Requirements.

81. In ensuring radiation protection the licensee shall:

81.1. apply the principles of optimisation and restriction of radiation safety;

81.2. foresee measures which, when carrying out decommissioning shall ensure radiation protection of the employees during nuclear and (or) radiological accidents and nuclear incidents;

81.3. assess and control radiation conditions on the premises of the controlled zone of the facility before beginning to carry out decommissioning actions, in carrying them out and upon their completion;

81.4. use barriers that prevent the spread of radionuclides and (or) suppress ionising radiation.

82. Descriptions of the radiation safety procedures used during decommissioning shall be reviewed and, taking into consideration the changed conditions, changed and used during decommissioning.

83. To prevent the spread of radionuclides to the environment during decommissioning and ensure that marginal values of the activity of emitted radionuclides established in the plan for emission of radionuclides to the environment shall not be exceeded, the licensee shall apply protective measures, install and use barriers precluding the spread of radionuclides.

84. The licensee shall analyse and substantiate the use of protective barriers planned to be used for precluding the uncontrolled spread of radionuclides from the facility to the environment assessing the efficiency and lifetime of these barriers.

85. Taking into account radiological conditions of the premises on which decommissioning actions are carried out, the licensee shall use barriers suppressing ionising radiation. The use of these barriers shall be justified simultaneously assessing their efficiency.

86. The licensee shall prepare its own normative technical documents which would determine in what way, in carrying out decommissioning actions and (or) with the radiological conditions of the premises being changed, adequate maintenance of the efficiency of the barriers precluding the spread of radionuclides or suppressing ionising radiation shall be ensured and the licensee shall apply these normative technical documents as long as it is expedient to use the barriers precluding the spread of radionuclides and (or) suppressing ionizing radiation.

CHAPTER XII
RADIOLOGICAL SURVEYS OF THE FACILITY

SECTION ONE
GENERAL PRINCIPLES OF PLANNING AND CONDUCTING RADIOLOGICAL SURVEYS

87. When planning decommissioning actions and prior to starting carrying out decommissioning actions, the licensee specified in Points 2-4 of Part 1 of the legal act specified in Subparagraph 3.1 of the Requirements shall have the information about contamination of the part of the facility that is associated with carrying out decommissioning actions with radionuclides and conduct its radiological surveys.

88. During radiological surveys of the facility the following shall be established:

88.1. distribution of the doze rate on the premises of the facility and on its site;

88.2. distribution of radionuclide activity in the buildings, structures, systems and components of the facility.

89. When planning radiological surveys the information about distribution of the doze rate and radionuclide activity collected during the operation of the facility shall be used, information about contamination of the buildings, structures, systems and components of the facility with radionuclides that occurred during the operation of the facility due to unusual events shall be taken into consideration.

90. To carry out radiological surveys the licensee specified in Points 2-4 of Part 1 of the legal act specified in Subparagraph 3.1 of the Requirements shall prepare a framework programme of radiological surveys and coordinate it with VATESI. VATESI shall take a decision on the approval of these documents within the time period specified in Part 2 of Article 34 of the legal act specified in Subparagraph 3.1 of the Requirements.

91. The framework radiological surveys programme shall cover all planned radiological surveys of the facility. The framework radiological investigation programme shall contain stages of the planned radiological surveys, describe the scope of the investigations for each stage, including the requirements set to the research programmes and reports of separate stages and separate research objects, provide for sampling and radiological research methods.

92. On the basis of the framework radiological survey programme the radiological survey programmes for separate stages shall be designed. The major stages of the framework radiological survey programme shall be as follows:

92.1. a historical assessment;

92.2. scoping radiological surveys;

92.3. basic radiological surveys;

92.4. final status radiological surveys.

93. Research programmes for each stage specified in the framework radiological survey programme shall be designed for each research object (for example, the site, and the structure of the facility).

94. When analysing safety of decommissioning actions and preparing the documents substantiating decommissioning safety, the licensee specified in Points 2-4 of Part 1 of the legal act specified in Subparagraph 3.1 of the Requirements shall use relevant data and results of radiological surveys, which reflect the condition of the facility at the time of making the safety analysis of decommissioning and preparing the documents justifying safe decommissioning.

94[1]. If, in accordance with the legal act specified in Subparagraph 3.12 of the Requirements, the aim is to classify the buildings and structures that are on the site of nuclear facility as idle and unnecessary structures that are planned to be demolished, and for that purpose a historical assessment of the contamination of buildings and engineering structures with radionuclides is carried out, this historical assessment must be carried out and formalized in accordance with the legal act specified in Subparagraph 3.15 of the Requirements.

SECTION TWO
FINAL STATUS RADIOLOGICAL SURVEYS

95. Radiation safety requirements shall not apply to the facilities, separate buildings, engineering structures and (or) the site of the facility (or a part thereof) when their contamination with radionuclides is lower than the free release radioactive levels and the surface activity values when only the surface activity is examined.

96. Upon completion of decommissioning, dismantling, radioactive waste management and other actions provided for in the final decommissioning plan, the decommissioning project or in the description of decontamination and (or) dismantling actions conducted during the permanent shutdown of the facility, and seeking to make sure that concentration of radionuclide activity in separate buildings of the facility, engineering structures and (or) the site of the facility (or a part thereof) does not exceed the free release of radioactive levels and the surface activity values when only the surface activity is examined, final status radiological surveys shall be carried out.

97. The licensee shall draw up the programme for final status radiological surveys, which shall provide for the scope of these surveys (for example, measuring and sampling methods, methods of assessing measurement results, etc.) and coordinate it with VATESI. If required to make the programme for final status radiological surveys more exact, amendments to that programme must be coordinated with VATESI. VATESI shall take a decision on the approval of the programme for final status radiological surveys and (or) its amendments within the time period specified in Part 2 of Article 34 of the legal act specified in Subparagraph 3.1 of the Requirements.

98. Having carried out final status radiological surveys, the licensee shall prepare a report of final status radiological surveys and submit it to VATESI for approval. VATESI shall take a decision on the approval of this document within the time period specified in Part 2 of Article 34 of the legal act specified in Subparagraph 3.1 of the Requirements.

99. The report on final status radiological surveys shall contain the information specified in the legal act referred to Subparagraph 3.15 of the Requirements.

100. Seeking to check or make sure that concentration of radionuclide activity of the object of the final status radiological surveys specified in the report on the final status radiological surveys is established following the methodology in accordance with the legal act specified in Subparagraph 3.15 of the Requirements, VATESI, having examined the results of the final status radiological surveys and assessed them, taking into account the risk factors specified in Point 101 of the Requirements, shall take a decision on the expediency of carrying out verification radiological surveys, which would enable the results of the final status radiological surveys to be verified.

101. VATESI, in taking a decision on the expediency of carrying out verification radiological surveys within a time period specified in Part 2 of Article 34 of the legal act specified in Subparagraph 3.1 of the Requirements, shall take into consideration the history of the operation of the object of radiological surveys, the uniformity of the distribution of the results of radiological surveys, the possible measurement errors, the established ratio between radionuclides contained in

the materials, distinctive or the surface activity, the respective free release radioactivity levels and other risk factors associated with the object under investigation.

CHAPTER XIII
EMERGENCY PREPAREDNESS DURING DECOMMISSIONING

102. During decommissioning of the facility the licensee shall ensure emergency preparedness following the plan of emergency preparedness of the facility, which shall be drawn up taking into consideration the final decommissioning plan and the results of the decommissioning safety analysis and substantiation.

103. The plan for emergency preparedness of the facility is prepared, tested and the staff training on the issues of emergency preparedness is provided following the legal acts regulating emergency preparedness of the facility approved by the Head of VATESI.

CHAPTER XIV
PHYSICAL SECURITY AND IMPLEMENTATION OF COMMITMENTS ON NON-PROLIFERATION OF NUCLEAR WEAPON DURING DECOMMISSIONING

104. In carrying out decommissioning of the facility the licensee shall ensure physical security of the facility, nuclear and nuclear fuel cycle materials following the legal acts regulating physical security approved by the Head of VATESI.

105. In carrying out decommissioning of the facility the licensee ensuring the fulfilment of the international commitments on the non-proliferation of the nuclear weapon assumed by the Republic of Lithuania, shall follow:

105.1. the provisions of the legal acts specified in Subparagraphs 3.11 and 3.13 of the present Requirements;

105.2. other than nuclear safety requirements and rules approved by the Head of VATESI specified in Subparagraph 105.1, which regulate the implementation of the commitments on the non-proliferation of nuclear weapons.

CHAPTER XV
FIRE SAFETY OF STRUCTURES, SYSTEMS AND COMPONENTS OF THE FACILITY IMPORTANT TO SAFETY DURING DECOMMISSIONING

106. In carrying out decommissioning of the facility the licensee shall ensure fire safety of the structures, systems and components of the facility important to safety following the legal acts approved by the Head of VATESI, which regulate fire safety of the structures, systems and components of the facilities important to safety.

CHAPTER XVI

DECOMMISSIONING PROJECTS

SECTION ONE
PREPARATION OF DECOMMISSIONING PROJECTS

107. When NF is a nuclear power plant or nuclear power unit, decontamination and (or) dismantling works of radionuclide-contaminated structures, systems and components (hereinafter referred to as decontamination and (or) dismantling works) during NF decommissioning, with the exception of preparatory activities for the NF decommissioning project (for example, isolation of

systems, inventory of engineering equipment, taking of samples required for radiological tests), can be conducted by holders of licenses specified in Points 2-4 of Article 22 of Part 1 of the legal act referred to in Subparagraph 3.1 of Requirements only if they have permits specified in Point 8 of Article 22 of Part 2 of the legal act referred to in Point 3.1 of Requirements, which are issued in accordance with the procedure established by the legal act specified in Point 3.6 of the Requirements. In this case, the documents of the NF decommissioning project – the description of the NF decommissioning project and the documents justifying the safety of this project (the safety analysis report of the NF decommissioning project) – shall be submitted in accordance with the procedure established by the legal act referred to Point 3.6 of Requirements to obtain the permits specified in Point 8 of Article 22 of Part 2 of the legal act referred to in Subparagraph 3.1 of the Requirements.

107^1. When the NF is an object other than a nuclear power plant or a nuclear power unit, decommissioning of the this NF can only be carried out with the license specified in Article 22, Part 1, Point 4 of the legal act referred to Subparagraph 3.1 of the Requirements. In this case, the documents of the NF decommissioning project – the description of the NF decommissioning project and the documents justifying the safety of this project (the safety analysis report of the NF decommissioning project) – must be submitted in accordance with the procedure established by the legal act referred to Subparagraph 3.6 of the Requirements to obtain the license specified in Point 4 of Article 22 of Part 1 of the legal act referred to Subparagraph 3.1 of the Requirements.

108. All new decisions associated with carrying out the decommissioning project taken by the licensee, the changes made in the limits and (or) conditions of decommissioning actions, which were not provided in the description of the decommissioning project specified in Points 107 and 107^1 of the Requirements, shall be analysed and justified from the safety viewpoint and and performed only after preparing the changes to the description of the NF decommissioning projects, clarifying the safety analysis reports of these projects and harmonizing these NF decommissioning project amendment documents with the procedure established by the legal act specified in Subparagraph 3.6 of the Requirements.

109. When planning construction works during decommissioning, the design of the building of the facility shall be prepared and construction works shall be carried out in the procedure established in the legal acts specified in Subparagraphs 3.2 and 3.5 of the Requirements.

110. During decommissioning of the facility, structures that are not in operation and are unnecessary (hereinafter referred to as unnecessary and idle structures), located on the site where decommissioning is being carried out, can be demolished if the following conditions are fulfilled:

110.1. activities with nuclear fuel cycle materials are not planned or carried out in these structures;

110.2. these structures and the equipment located in these structures are not designed to ensure nuclear, radiation and physical safety of the facility;

110.3. these structures do not contain equipment, systems and components that will be further used and (or) are necessary to decommissioning of the facility;

110.4. these structures are not planned to be used either in future decommissioning of the facility, including ensuring physical security, anti-fire safety and (or) emergency preparedness, or after conduct of decommissioning has been completed;

110.5. concentration of radionuclide activity in these structures does not exceed the free release radioactive levels and the surface activity values when only the surface activity is examined.

111. When planning to carry out demolition works of unnecessary and idle structures specified in Point 110 of the Requirements, such technologies of demolishing these structures shall be selected which would not damage communication and engineering networks of the facility, would not do harm to the structures, systems and components, physical barriers important to safety of the facility and not derange operation of the structures, systems and components important to the safety of the facility and physical security systems and at the same time would ensure carrying out safety functions of the facility, and emergency preparedness of the facility. Also, in selecting technologies of demolishing unnecessary and idle structures that are planned to be used on the site of the facility, and planning the course of implementing the works of demolishing these structures, it is necessary

to assess and ensure that demolishing works will have no negative effect on nuclear safety, radiation protection and physical security of the activities being carried out on the site of the facility, including the operation of the facilities on the same site (if any) and carrying out decommissioning actions, and on the possibility to use the road network and transport routes.

112. During the permanent shutdown and decommissioning of the nuclear facility, the demolition works of unnecessary and idle structures can be carried out only when all the conditions set out in Points 110 and 111 of the Requirements are met. Decisions on classifying structures located on the site of the facility specified in Point 110 of the Requirements to the category of unnecessary and idle structures, which are planned to be demolished and on carrying the works of demolishing these structures, taking into consideration conditions established in Point 111 of the Requirements, including the assessment of the effect of these demolishing works on the activities carried out on the site of the facility during the permanent shutdown and decommissioning of the nuclear facility and on their safety, shall be implemented following the legal act specified in Subparagraph 3.12 of the Requirements.

113. If during decommissioning, in carrying out the permanent shutdown of the nuclear facility it is technically impossible or is economically inefficient to remove radioactive contamination exceeding the unconditional uncontrolled radioactive levels and the surface activity values when only the surface activity is examined, from construction structures of unnecessary and idle structures specified in Point 110 of the Requirements, the demolition works of these structures shall be described and substantiated in the documents of the decommissioning project (projects) and demolition waste must be managed as radioactive waste.

114. Dismantling of structures, systems and components that are uncontaminated with radionuclides and which are not included in the descriptions of decontamination and (or) dismantling works specified in the final decommissioning plan and carried out during the permanent shutdown of the facility and in the decommissioning projects, as well as the implementation of preparatory activities of these projects is carried out following the legal act specified in Subparagraph 3.12 of the Requirements.

114^1. When planning NF decommissioning works, measures (for example, organizational, technical) must be analyzed and planned, which, as far as practically possible and expedient from the point of view of radiation protection (i.e., the benefits resulting from the implementation of the measures are greater than the harm), would ensure, during the decommissioning of the NF, the transfer of radionuclides and additional contamination with radionuclides will be prevented both in the premises where the works are carried out and outside these premises. These measures must be proportionate to the radioactive contamination of the equipment and premises and the possibility of this contamination spreading during decommissioning. Measures must also be analyzed and planned to ensure that, after the completion of the work, the radiological conditions in the premises are no worse than they were before the start of the work, except in cases where the premises are planned to be used for certain technological processes (for example, temporary storage of radioactive waste), when the deterioration of radiological conditions does not adversely affect the radiation safety of workers.

114^2. When planning NF operations, during the execution of which the contamination with radioactive substances of air and (or) surface may occur, in order to protect workers, residents and the environment from the spread of radioactive contamination, aerosol confinement systems must be planned and used. When designing and using aerosol confinement systems, it is recommended to follow the provisions of the international standard ISO 16647 " Nuclear facilities – Criteria for design and operation of confinement systems for nuclear worksite and for nuclear installations under decommissioning" and international standard ISO 17873 "Nuclear facilities — Criteria for the design and operation of ventilation systems for nuclear installations other than nuclear reactors".

115. The description of the NF decommissioning project, which is a document describing the decontaminations and (or) dismantling works, taking into consideration the tasks and objectives of that project, shall contain the following:

115.1. descriptions and drawings of the site, structures, systems and components of the facility;

115.2. a description of the examined condition of the facility, including its characterisation prior to the beginning of decommissioning, the existing and forecasted quantities of decommissioning waste;

115.3. a description of decommissioning actions (for example, vacation of technological shafts, premises, dismantling, decontamination of main and auxiliary structures, systems and components of the facility, parts of the nuclear reactor, decontamination, dismantling of the barriers preventing the spread of radionuclides to the environment and (or) suppressing ionising radiation, conservation of the structures, systems and components), with the exception of decontamination and (or) dismantling works carried out during the permanent shutdown of the facility and the sequence of performing these actions and other information associated with these actions necessary to forecast the occupational exposure of the employees;

115.4. a description of treatment of dual use nuclear goods shall such goods were identified during decommissioning of the facility;

115.5. indication and description of the methods, equipment and devices used for decontamination and dismantling, their technical characteristics, provided information on ventilation and air filtration equipment, including the planned to use aerosol confinement systems and systems to reduce ionizing radiation, and other auxiliary equipment required for decontamination and dismantling works, assessed the appropriateness of decontamination works, taking into consideration the objectives of decontamination specified in Point 133 of the Requirements, and their effectiveness, the results of tests of the methods and new facilities and (or) equipment employed in the nuclear energy sector;

115.6. a description of one‘s own experience and skills of operation and decommissioning and experience and skills gained by other persons who carry out activities in the nuclear energy sector, which are planned to be used in the decommissioning project;

115.7. a description of structures, systems and components important to the safety of the facility related to carrying out the decommissioning project and their functions;

115.8. the information about the relations of the decommissioning project with other decommissioning projects planned to be carried out and (or) being carried out at the same time, including decontamination and (or) dismantling works completed or started to be carried out during the permanent shutdown of the facility specifying the ways of coordinating interrelated decommissioning actions of separate decommissioning projects and decontamination and (or) dismantling works completed or started to be carried out during the permanent shutdown of the facility, as well as the ways of using shared resources and infrastructure.

115.9. a list of the licensee’s normative technical and management system documents in which the requirements to planning, conducting and supervising decommissioning and an adequate assessment of the qualification and training of the staff, reaction in case of incidents and accidents of the facility, management of ageing of the structures, systems and components important to the safety of the facility, verifications, tests and the procedure for their implementation are laid down;

115.10. a description of decommissioning waste management – methods, equipment, measuring devises, technical and organisational solutions ensuring a continuous collection of produced radioactive waste, its transportation for treatment, storage, placing it in a radioactive waste repository, accounting of radioactive waste, sites of their formation, transportation routes, practical solutions minimizing contamination of uncontrolled zones and contamination of the site of the facility with radionuclides when transporting radioactive waste;

115.11. the information about the established radionuclide vector.

SECTION TWO
SAFETY ANALYSIS AND SUBSTANTIATION OF THE DECOMMISSIONING PROJECT

116. When planning, preparing and carrying out the decommissioning project and justifying its safety, the licensee shall take into account interrelations between the decommissioning projects being carried out simultaneously, including decontamination and (or) dismantling works completed or commenced to be carried out during the permanent shutdown of the facility, shall coordinate decommissioning actions of these projects, the use of respective resources and infrastructure.

117. The results of the safety analysis and justification of the NF decommissioning project must be formalized in the NF decommissioning project safety analysis report, which is a document justifying the safety of decontamination and (or) dismantling works. This report, which must be submitted by licensees in accordance with the procedure established by the legal act specified in Subparagraph 3.6 of the Requirements, shall contain the following:

117.1. an assessment and a description of dangers that might arise to the employees, inhabitants and the environment while carrying out the decommissioning project and their sources, including the danger that can determine the external and internal exposure of the employees and inhabitants to radiation, possible dangers due to the use of materials that have poisonous and dangerous properties or their presence in the environment, as well as factors, which make working conditions more difficult (for example, work at high altitude, high temperature, contamination of air with dust);

117.2. the established nuclear and radiation safety criteria, limits and conditions of decommissioning specified in the decommissioning project;

117.3. the information about the forecasted collective and individual occupational exposure dozes to the employees under normal conditions of carrying out the decommissioning project and methods of assessing the occupational exposure dozes;

117.4. the information about forecasted emissions of radionuclides and planned exposure dozes to the inhabitants under normal conditions of carrying out the decommissioning project;

117.5. a description of radiation safety measures applied when carrying out the decommissioning project justifying that under normal decommissioning conditions the occupational exposure dozes to the employees will not exceed the marginal dozes and the principle of optimising radiation safety will be implemented;

117.6. the justification that using the methods, equipment and devices selected for decontamination and dismantling work, including new methods and technologies and (or) those that were not used by the licensee before, nuclear safety, radiation protection and physical security and fire safety of the structures, systems and components of the facility will be ensured;

117.7. a description of how the constantly changing environment and conditions of carrying out decommissioning actions will be taken into consideration;

117.8. a description and substantiation of safety functions of the structures, systems and components performed while carrying out the decommissioning project and assurance that these functions shall be performed while carrying out the whole decommissioning project;

117.9. the analysis of the possible foreseen radiological accidents and their consequences and aftermaths caused by the initial events (internal events and external hazards) associated with carrying out the decommissioning project and the methods used to determine them, the preconditions, the analysis of these factors and the assessment of their impact on the employees, the inhabitants and the environment (the calculation of radiation dozes to the employees and the inhabitants and activity of radionuclides emitted into the environment, as well as the assessment methods). Seeking to achieve this goal, dangerous activities provided for in the decommissioning project shall be considered during which, if possible initial events have occurred, radiological consequences and aftermaths are possible (for example, lifting and handling cargoes, the use of materials having dangerous properties for decontamination, large-scale cutting and dismantlement works associated with the materials contaminated with radionuclides, modification of barriers precluding the spread of radionuclides and (or) suppressing ionising radiation, getting inside the premises of the facility, which was impossible under normal conditions of the operation of the facility, the stability of decontaminated structures, demolition works);

117.10. the forecast and justification of preventative technical and organisational measures mitigating consequences of possible events specified in Point 117.9 of the Requirements;

117.11. the information about the way the increased quantities of the radioactive waste produced will be treated and managed as compared with the quantities of radioactive waste produced during the operation of the facility, how elements contaminated with radionuclides will be cut, modifications of the barriers preventing the spread of radionuclides into the human environment and (or) suppressing ionising radiation will be made, decontamination of large objects will be performed, how the premises will be entered the entrance to which was not provided for, how materials having dangerous properties used for decontamination are treated and managed, the stability of decontaminated elements ensured, works of lifting and managing heavy elements organised and how decommissioning safety under other unusual working conditions as compared with the operation of the facility, working conditions will be ensured;

117.12. an assessment and indication as to whether amendments to the emergency preparedness plan while carrying out the decommissioning project are necessary to be made;

117.13. a description of the way physical protection of the facility, nuclear or nuclear fuel cycle materials shall be ensured while carrying out the decommissioning project. The information constituting the State and (or) official secret must not be specified in this part;

117.14. a comparison of the results of the safety analysis and substantiation of the decommissioning project with the safety criteria established in the report on the safety analysis of the decommissioning project and the conclusions on the acceptability decommissioning actions from the point of view of nuclear and radiation safety.

118. *This Point is not valid from 2021-05-01*.

SECTION THREE
REPORT ON CARRYING OUT THE DECOMMISSIONING PROJECT

119. Having carried out the decommissioning project, when the nuclear facility is a nuclear power plant or the energy unit of a nuclear power plant, the licensee shall prepare a report on carrying out the decommissioning project of the facility, when the nuclear facility is a nuclear power plant or the energy unit of a nuclear power plant, and submit it to VATESI for approval. VATESI shall take a decision on the approval of these documents within the time period specified in Part 2 of Article 34 of the legal act specified in Point 3.1 of the Requirements. The following information shall be presented in the report on carrying out the decommissioning project when the nuclear facility is a nuclear power plant or the energy unit of a nuclear power plant:

119.1. a description of decommissioning actions performed in carrying out the decommissioning project specifying the problems, which were not foreseen and assessed in preparing the decommissioning project and the documents substantiating the project safety;

119.2. a description of the amendments made to the documents of completed decommissioning actions and (or) to the documents substantiating safety of these actions specifying the reasons for these amendments, the course of making them and the results;

119.3. a description of the equipment and devices used;

119.4. a description of the implementation of the objectives of decontamination provided for in the decommissioning project thereby it was sought to reduce the occupational exposure dozes to the employees and (or) quantities of radioactive waste and (or) to remake and use the equipment, materials and premises anew, and a comparison of the planned and actual effectiveness of decontamination;

119.5. the evaluation and establishment of remaining contamination with radionuclides after completing decommissioning actions provided for in the decommissioning project and its description;

119.6. a description of decommissioning waste indicating the storage and disposal site of this waste and comparing the planned and actually produced quantities of decommissioning waste;

119.7. a description of decommissioning waste in which concentration of radionuclide activity does not exceed the free release levels and the surface activity values when only the surface activity is examined, and the quantities of this waste;

119.8. the information about nuclear dual use goods and their further use or management if such goods were identified during the time of carrying out the decommissioning project;

119.9. a list of unusual events that occurred while carrying out the decommissioning project;

119.10. data about occupational exposure dozes to the employees during the time of carrying out the decommissioning project (average and maximum annual occupational exposure dozes to the employees engaged in the implementation of the decommissioning project; average and maximum dozes of individual occupational exposure to which the employees were exposed in conducting decommissioning actions dangerous from the point of view of radiation safety, a comparison of these dozes with the planned collective occupational exposure dozes);

119.11. data about radionuclide emissions associated with decommissioning actions being carried out and exposure dozes to the inhabitants during the time of carrying out the decommissioning project;

119.12. a description of the assessment of the processes of ensuring organised training and qualification improvement of the employees during the time of carrying out the decommissioning project;

119.13. a description of practical knowledge, experience gained and lessons learned during the time of carrying out the decommissioning project;

119.14. a description of the buildings, structures, system and components that remained after the decommissioning project has been implemented, including their possible and planned future use and restrictions imposed on them.

CHAPTER XVII
SPECIAL REQUIREMENTS TO THE ACTIONS OF A PERMANENT SHUTDOWN OF A FACILITY SEEKING TO PREPARE FOR CONDUCTING DECOMMISSIONING

120. Having taken the decision on the permanent shutdown of the facility, the licensee shall immediately but not later than within five working days following the adoption of that decision, inform VATESI in writing of the adoption of the decision.

121. In case the facility is permanently shutdown earlier than it was provided for in the updated decommissioning plan of the facility (for example, in case of an accident) the licensee shall ensure nuclear safety, radiation protection and physical security of the facility until the licensee, not later than within two years after the day of the permanent shutdown of the facility, prepares a final decommissioning plan and submits it to VATESI, and following that plan starts preparing for carrying out decommissioning of the facility.

122. During the permanent shutdown of the facility its safety shall be ensured in accordance with the license issued by VATESI and the requirements laid down in VATESI legal acts regulating nuclear safety, radiation protection and physical security and assurance of international commitments to non-proliferating nuclear weapons.

123. It shall be forbidden to decontaminate and dismantle the structures, systems and components of the facility important to safety during the permanent shutdown of the facility.

124. During the permanent shutdown of the facility the licensee shall implement the measures helping to decommission the facility, to prepare for carrying out decommissioning of the facility and (or) to reduce the duration of decommissioning of the facility (for example, to unload and take away all nuclear fuel from the energy block of the nuclear power plant, to isolate, decontaminate and dismantle all unnecessary systems, to dispose of radioactive waste produced during decommissioning). During the permanent shutdown of the facility the licensee shall carry out operation and technical maintenance of the systems, structures and components necessary to ensure all safety functions following the description of decontamination and (or) dismantling works, the technological regulation of the facility (operational limits and conditions) and operating instructions.

125. Contaminated structures, systems and components of the NF, when the NF is a nuclear power plant or a nuclear power unit, that are non-operational and not safety related, may be decontaminated and dismantled during the permanent shutdown of the NF only when the structures, systems and components are easily separated from other structures, systems and components and they are not required for further operation and decommissioning of the NF. These works can be carried out only with the permits specified in Article 22, Part 2, Point 8 of the legal act specified in Subparagraph 3.1 of the Requirements issued for the execution of these works. These permits are issued in accordance with the procedure established by the legal act specified in Subparagraph 3.6 of the Requirements.

126. When preparing the descriptions and safety analysis reports of the decontamination and (or) dismantling works specified in Point 125 of the Requirements, carried out during the permanent shutdown of the NF, and when carrying out these works and submitting reports on the execution of these works, the provisions of Chapter XVI of the Requirements *mutatis mutandis* must be followed, and when carrying out these works, the provisions of Chapters VII and IX-XV of the Requirements. *mutatis mutandis* must be followed. Waste generated during decontamination and (or) dismantling during permanent shutdown of the NF must be handled as NF decommissioning waste. If during the execution of these decontamination and (or) dismantling works it is planned to carry out construction works at the same time, the construction project of the NF shall be prepared and the construction works shall be carried out in accordance with the procedure established by the legal acts specified in Subparagraphs 3.2 and 3.5 of the Requirements.

127. All new decisions of the NF operation license holder related to the execution of the of decontamination and (or) dismantling works specified in the description of these works, changes in the limits and (or) conditions of the decontamination and (or) dismantling works carried out during the permanent shutdown of the NF according to this description, which were not foreseen in the in the description of decontamination and (or) dismantling works, which was agreed with VATESI, must be analyzed and justified from a safety point of view and performed only in accordance with the procedure established by the legal act referred to in Subparagraph 3.6 of the Requirements.

CHAPTER XVIII
DECONTAMINATION AND DISMANTLING

128. It is important to select such methods and equipment for decontamination and dismantling, which would ensure as low exposure doze to the employees, the inhabitants and the environment as it is possible to achieve taking into account economic and social factors, and which would help minimise the quantities of radioactive waste produced. It is necessary to assess decontamination and dismantling safety and carry out these works so that exposure dozes and activity of radionuclides emitted to the environment shall not exceed the established marginal values.

129. The same methods, which were used during the operation of the facility, can be employed for decontamination and dismantling during the permanent shutdown and decommissioning of the facility. If in making the safety analysis and justification of the decommissioning of the facility their suitability is justified, methods that were not used during the operation of the facility can be applied.

130. When selecting decontamination and dismantling methods successful practice of the use of these methods in carrying out decontamination and (or) dismantling works in other facilities, and experience accumulated by the licensee specified in Points 2-4 of Part 1 of Article 22 of the legal act specified in Subparagraph 3.1 of the Requirements during the operation and decommissioning of the facility shall be taken into account.

131. Prior to the beginning of the use of decontamination and dismantling equipment, seeking to optimise the course of decontamination and dismantling works, tests of this equipment under conditions similar to those in which decontamination and dismantling work will be carried out, shall be conducted.

132. When selecting decontamination and dismantling methods it is necessary to assess the effectiveness of these methods and their negative impact on the employees, the inhabitants, the environment, nuclear safety, radiation protection and physical security of the facility. Taking into account the results of this assessment, the most efficient decontamination and dismantling methods, which exert the least negative impact, shall be selected.

133. By means of decontamination the following is sought to be achieved:

133.1. creating better working conditions to perform dismantling work and reduce the occupational exposure;

133.2. minimising quantities of radioactive waste;

133.3. reclassifying radioactive waste to a lower class of radioactive waste;

133.4. creating conditions for using materials, equipment and premises for other purposes.

134. When selecting the decontamination method an assessment of its efficiency shall be made analysing and assessing the following:

134.1. the planned decontamination factor;

134.2. occupational exposure (collective and individual dozes);

134.3. formation of aerosols;

134.4. the possibilities to achieve the planned decontamination factor by means of the methods available to the licensee specified in Points 2-4 of Part 1 of Article 22 of the legal acts specified in Subparagraph 3.1 of the Requirements and other existing methods;

134.5. possibilities to acquire decontamination equipment;

134.6. possibilities to establish the reached decontamination factor by means of measuring;

134.7. economic expediency of the decontamination method (assessing the cost of decontamination equipment and materials used, labour costs and other aspects of economic expediency);

134.8. properties (physical, chemical and biological) of primary and secondary radioactive waste, quantities, categories and activity of this waste;

134.9. possibilities of managing this waste taking into account the already available or newly needed radioactive waste management facilities;

134.10. a negative impact of decontamination on structures, systems and components, being decontaminated and their integrity;

134.11. other non-radiological hazards associated with applying decontamination methods;

135. When selecting dismantling methods it is necessary to assess the following:

135.1. properties of equipment and its components (for example, material, size, shape, the environment, availability, etc.) being dismantled;

135.2. the possibility to use the tested methods and equipment;

135.3. aspects of radiation safety of the employees and the inhabitants (for example, surface contamination and the formation of aerosols, the assessment of the doze rate and occupational exposure dozes, measures reducing emission of radionuclides to the environment, etc.);

135.4. generation of secondary dismantling waste;

135.5. conditions of working environment (for example, air temperature, dampness, etc.).

136. Dismantling equipment shall be simple to use and, upon completion of works, easy to decontaminate.

137. In case radioactive waste produced during dismantling is not going to be treated further, this waste, seeking to avoid contamination with radionuclides and reduce the occupational exposure shall be placed in containers intended for storage and (or) disposal in radioactive waste repositories and stored in radioactive repositories.

CHAPTER XIX
DEFERRED DISMANTLING OF THE FACILITY

138. Having selected deferred dismantling of the nuclear facility the licensee specified in Points 2-4 of Part 1 of Article 22 of the legal act specified in Subparagraph 3.1 of the Requirements

shall ensure nuclear safety, radiation protection and physical security of the facility, fire safety of the structures, systems and components of the facility important to safety during the safe enclosure period and, upon the expiry of the term of deferred dismantling of the facility, shall dismantle the facility and carry out other actions provided for in the final decommissioning plan seeking to attain the final state of the facility and its site.

139. During the safe enclosure period it is necessary to properly use and maintain structures, systems and components of the facility important to safety.

140. Having selected deferred dismantling of the facility the licensee specified in Points 2-4 of Part 1 of Article 22 of the legal act specified in Subparagraph 3.1 of the Requirements, in ensuring nuclear safety, radiation protection and physical security of the facility, shall seek to minimise the need for active safety systems, their maintenance and human interference. When selecting the system ensuring radiation safety of the facility, prior to the beginning of the safe maintenance period of the facility, priority shall be given to a passive option for storage, monitoring and maintenance of the facility, as well as to the use of passive safety structures, systems and components.

141. Prior to the safe enclosure period, i.e., prior to the beginning of the safe enclosure period of maintenance of the facility, the licensee specified in Points 2-4 of Part 1 of Article 22 of the legal act specified in Subparagraph 3.1 of the Requirements shall prepare and coordinate with VATESI a plan of monitoring, storage and technical maintenance of deferred dismantling of the facility whose aim is to show in what way nuclear safety, radiation protection and physical security will be ensured during the safe enclosure period at the same time without becoming detrimental to carrying out future dismantling actions. VATESI shall take a decision on the approval of this plan within the time period specified in Part 2 of Article 34 of the legal act specified in Point 3.1 of the Requirements. The plan for monitoring, storage and technical maintenance of the facility of deferred dismantling shall specify the following information covering the safe enclosure period:

141.1. the identification of the need for technical maintenance of the buildings, structures, systems and components of the facility and equipment needed for that maintenance in establishing frequency of carrying out that maintenance;

141.2. a description of monitoring, cooling, ventilating, air conditioning, emergency illumination of the radiation condition of the facility and its site and other necessary systems aimed at maintaining adequate operating conditions (for example, temperature, humidity, air cleanness, etc.) of the buildings, structures, systems and components;

141.3. the assessment of quantities of planned waste produced in carrying out technical maintenance specifying the ways of managing this waste;

141.4. the safety analysis and substantiation of the facility made during the deferred dismantling period and a description of that analysis;

141.5. a plan of checking the condition of the facility and its state, which is prepared taking into account the use of passive safety measures, the period of deferred dismantling of the facility and experience of monitoring and technical maintenance of the facility accumulated;

141.6. a description of emergency preparedness and fire safety assurance of structures, systems and components of the facility important to safety;

141.7. a description of the aims of ensuring physical security and generalised measures thereby these aims are sought to be achieved during decommissioning of the facility. This part shall not contain information constituting a State and (or) official secret;

141.8. the identification of financial resources and the need for the staff taking into account the objectives of the plan for monitoring, storage and technical maintenance of the facility;

141.9. a description of management of documents and information during the period of deferred dismantling the facility.

142. During the safe enclosure period the licensee specified in Points 2-4 of Part 1 of Article 22 of the legal act specified in Subparagraph 3.1 of the Requirements shall accumulate information about all the modifications of the facility, register the environmental parameters and preserve other information of importance to the decommissioning of the facility.

143. Having established the conditions of monitoring, storage and technical maintenance of the facility of deferred dismantling in the plan for monitoring, storage and technical maintenance of the facility of deferred dismantling, the licensee specified in Points 2-4 of Part 1 of Article 22 of the legal act specified in Subparagraph 3.1 of the Requirements can apply deferred dismantling to a part of a construction, a structure, a system or a components of the facility.

CHAPTER XX
FINAL REPORT ON DECOMMISSIONING

144. The NF decommissioning license holder is responsible for nuclear, radiation and physical safety of NF during decommissioning of NF until the NF decommissioning license is revoked.

145. NF decommissioning license holder, in confirming that the decommissioning of the facility has been completed, and that state of the facility and (or) its site complies with the end state of the facility and (or) its site specified in the valid final decommissioning plan, and the requirements laid down in legal acts regulating nuclear safety, radiation protection and physical security, as well as accounting and control of nuclear materials, shall prepare a final NF decommissioning report and submit it to VATESI together with a request to revoke the decommissioning license. VATESI makes a decision on the revoke of this license within the terms specified in Article 34, Part 2 of the legal act referred to in Subparagraph 3.1 of the Requirements.

146. The final NF decommissioning report, taking into account the purpose of this report to confirm that the NF decommissioning is carried out in compliance with the conditions set for this activity in the final NF decommissioning plan and the NF decommissioning safety analysis report, and the condition of the NF after the completion of the decommissioning work of the nuclear facility meets the final state of the NF and its site as indicated in the final NF decommissioning plan, shall contain the following information:

146.1. a description of the decommissioning results specifying whether upon completion of decommissioning actions the expected desirable end state of the facility and (or) its site established in the description of the decommissioning strategy and the final decommissioning plan has been attained and whether the end state criteria for the end state of the facility and (or) its site have been met;

146.2. a description of assessment and justification of contamination of facility buildings and (or) facility site territories with radionuclides upon completion of decommissioning actions;

146.3. consolidated results of the final status radiological surveys of the facility;

146.4. a description of decommissioning actions specifying the problems that arose in carrying out decommissioning actions and their solutions;

146.5. a description of equipment and devices used during decommissioning of the facility;

146.6. a list of the normative technical documents that the licensee possesses following which decommissioning of the facility has been carried out;

146.7. a description of decommissioning waste produced during decommissioning of the facility including materials and decommissioning waste in which concentration of radionuclide activity does not exceed the free release radioactive levels and the surface activity values when only the surface activity is examined, specifying their quantities, the site of storage or their final disposal;

146.8. a description of methods and procedures used when assessing whether concentration of radionuclide activity does not exceed the free release radioactive levels and the surface activity values when only the surface activity is examined;

146.9. a comparison of quantities of radioactive waste produced in decommissioning of the facility with the planned quantities of this waste;

146.10. the information about nuclear dual use goods and their further use or their final treatment if such goods were identified in carrying out decommissioning actions;

146.11. a list of unusual events that occurred during the decommissioning of the facility;

146.12. data about planned and received exposure of the employees and the inhabitants during decommissioning, planned and actual emissions of radionuclides;

146.13. a description of the assessment of training of the employees and processes of ensuring the employees' qualification at the time of carrying out decommissioning actions;

146.14. a description of practical knowledge gained, experience accumulated and lessons learned when conducting the decommissioning of the facility;

146.15. a description of the possible and planned further use of the site of the facility, the remaining constructions, structures, systems and components of the facility and the restrictions imposed on them, including, if upon completion decommissioning radionuclide activity concentration of separate facilities and (or) the site of the facility (or a part thereof) exceeds the free release levels and the surface activity values when only the surface activity is examined, the way the Point 148 of the Requirements is implemented.

146.16. information about the proposals or the opinion of the stakeholders, including that of the public, about decommissioning carried out and the final state of the facility and (or) its site and the possible and planned use of the site of the facility and (or) the structures and how that opinion or proposals were assessed, if such information (opinion or proposals) was received.

147. An economic entity that was issued a licence for carrying out decommissioning, and which was revoked after completion of decommissioning actions, shall be responsible for keeping the final report on decommissioning and other documents of decommissioning the facility confirming that decommissioning actions have been completed and the goals established in the final decommissioning plan have been achieved, and for handing over these documents to the subject taking over all remaining rights and duties after the licence for decommissioning of the facility has been annulled.

148. If, upon completion of decommissioning, concentration of radionuclide activity of separate buildings, engineering structures and (or) the site of the facility (or a part thereof) exceeds the unconditional free release levels and the surface activity values when only the surface activity is examined, that is, the use of the buildings of the facility and (or) its site is possible only with restrictions, taking into consideration a possible effect of ionising radiation, the licensee, seeking to ensure protection of the environment and the inhabitants, shall assess a long-term impact of contamination of the facility with radionuclides on the environment and the inhabitants, propose long-term measures ensuring nuclear safety, radiation protection and physical security, provide for the supervision and control measures of the facility and (or) the site of the facility and the description of these measures shall be agreed with VATESI. If the licensee seeks to use further buildings of the facility, engineering structures and (or) the site of the facility in which concentration of radionuclide activity exceeds the unconditional free release levels and the surface activity values when only the surface activity is examined, for economic, commercial or other purposes, to this end the licensee, prior to proposing and providing for the measures specified in the present Point, *mutatis mutandis* following the procedure established by the legal act specified in subparagraph 3.9 of the Requirements shall have to establish the conditional free release levels of the buildings of the facility, engineering structures and (or) the site of the facility (or a part thereof). VATESI shall take a decision on the approval of a description of the supervision and control measures of the facility and (or) the site of the facility ensuring nuclear safety, radiation protection and physical security within the time period specified in Part 2 of Article 34 of the legal act specified in Point 3.1 of the Requirements.

CHAPTER XXI
SUPERVISION OF DECOMMISSIONING ACTIONS

149. *This Point is not valid from 2020-11-01*.

CHAPTER XXII
FINAL PROVISIONS

150. The Head of VATESI shall take a positive decision on the approval of the documents specified in Points 37, 38, 42, 64, 90, 97, 98, 100, 101, 119, 125, 127, 141, 145, 148 of the Requirements if the documents are in compliance with the legal acts regulating nuclear safety, radiation protection and physical security of the facility and the implementation of the international commitments of the Republic of Lithuania on the non-proliferation of nuclear weapons during the decommissioning of the facility, the requirements laid down in the normative technical documents of nuclear safety and (or) actual circumstances.

151. A person who violates these Requirements shall be liable in accordance with the procedure established by the Law of the Republic of Lithuania on Nuclear Safety and (or) the Code of Administrative Offences of the Republic of Lithuania.

Amendments:

1.
State Nuclear Power Safety Inspectorate, Order
No. 22.3-170 of 21 October 2016, publicised TAR 21 October 2016, iden. code 2016-25541
Order No. 22.3-216 of the Head of the State Nuclear Power Safety Inspectorate of 30 November 2015 On Amending On Amending Order No. 22.3-216 of the Head of the State Nuclear Power Safety Inspectorate of 30 November 2015 On the Approval of Nuclear Safety Requirements BSR-1.5.1-2015 'Decommissioning of Nuclear Facilities'.

2.
State Nuclear Power Safety Inspectorate, Order
No. 22.3-199 of 31 October 2017, publicised TAR 31 October 2017, iden. code 2017-17208
On Amending Order No. 22.3-216 of Head of the State Nuclear Power Safety Inspectorate of 30 November 2015 On the Approval of Nuclear Safety Requirements BSR-1.5.1-2015 'Decommissioning of Nuclear Facilities'.

3.
State Nuclear Power Safety Inspectorate, Order
No. 22.3-35, of 7 February 2018, publicised TAR 7 February 2018, iden. code 2018-01923
On Amending Order No. 22.3-216 of Head of the State Nuclear Power Safety Inspectorate of 30 November 2015 On the Approval of Nuclear Safety Requirements BSR-1.5.1-2015 'Decommissioning of Nuclear Facilities'.

4.
State Nuclear Power Safety Inspectorate, Order
No. 22.3-19, of 24 January 2019, publicised TAR 24 January 2019, iden. code 2019-01067
On Amending Order No. 22.3-216 of Head of the State Nuclear Power Safety Inspectorate of 30 November 2015 On the Approval of Nuclear Safety Requirements BSR-1.5.1-2015 'Decommissioning of Nuclear Facilities'.

5.
State Nuclear Power Safety Inspectorate, Order
No. 22.3-144, of 3 July 2019, publicised TAR 3 July 2019, iden. code 2019-10948
On Amending Order No. 22.3-216 of Head of the State Nuclear Power Safety Inspectorate of 30 November 2015 On the Approval of Nuclear Safety Requirements BSR-1.5.1-2019 'Decommissioning of Nuclear Facilities'.

6.
State Nuclear Power Safety Inspectorate, Order
No. 22.3-100, of 20 May 2020, publicised TAR 20 May 2020, iden. code 2020-10641
On Amending Order No. 22.3-216 of Head of the State Nuclear Power Safety Inspectorate of 30 November 2015 On the Approval of Nuclear Safety Requirements BSR-1.5.1-2019 'Decommissioning of Nuclear Facilities'.

7.
State Nuclear Power Safety Inspectorate, Order
No. 22.3-54, of 20 April 2021, publicised TAR 20 April 2021, iden. code 2021-08153
On Amending Order No. 22.3-216 of Head of the State Nuclear Power Safety Inspectorate of 30 November 2015 On the Approval of Nuclear Safety Requirements BSR-1.5.1-2019 'Decommissioning of Nuclear Facilities'.

8.
State Nuclear Power Safety Inspectorate, Order
No. 22.3-75, of 17 May 2023, publicised TAR 17 May 2023, iden. code 2023-09260
On Amending Order No. 22.3-216 of Head of the State Nuclear Power Safety Inspectorate of 30 November 2015 On the Approval of Nuclear Safety Requirements BSR-1.5.1-2019 'Decommissioning of Nuclear Facilities'.