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THE HEAD OF THE STATE NUCLEAR POWER SAFETY INSPECTORATE

ORDER
ON THE APPROVAL OF NUCLEAR SAFETY REQUIREMENTS BSR-3.1.1-2016 "MANAGEMENT OF SPENT NUCLEAR FUEL IN DRY-TYPE STORAGE FACILITIES"

No 22.3-59, 21 July 2010
Vilnius

Pursuant to Article 22(1) (3) of the Law on Nuclear Energy of the Republic of Lithuania, Articles 4(1), 4(7), 11(1), 32(2) and 32(7) of the Law on Nuclear Safety of the Republic of Lithuania and Article 7(2) (3) of the Law on the Management of Radioactive Waste of the Republic of Lithuania, hereby I

A p p r o v e Nuclear Safety Requirements BSR-3.1.1-2016 "Management of spent nuclear fuel in dry-type storage facilities" (attached).

DIRECTOR OF THE RADIATION PROTECTION DEPARTMENT,
ACTING HEAD VIDAS PAULIKAS

APPROVED
by Order No 22.3-59 of the Head of the State Nuclear Power Safety Inspectorate of 21 July 2010 (version of Order No 22.3-130 of the Head of the State Nuclear Power Safety Inspectorate of 22 July 2016)

NUCLEAR SAFETY REQUIREMENTS
BSR-3.1.1-2016

MANAGEMENT OF SPENT NUCLEAR FUEL IN DRY-TYPE STORAGE FACILITIES

CHAPTER I
GENERAL PROVISIONS

1. Nuclear Safety Requirements BSR-3.1.1-2016 "Management of spent nuclear fuel in dry-type storage facilities" (hereinafter "the Requirements") set out the safety requirements for the siting, designing, constructing, commissioning, operating and decommissioning of a dry-type storage facility for spent nuclear fuel. The Requirements shall also apply to the management of spent nuclear fuel to prepare it for storage in a dry-type storage facility.

CHAPTER II
LIST OF REFERENCES

2. The Requirements contain references to the following legal acts:
2.1. Law on Nuclear Safety of the Republic of Lithuania;
2.2. Law on Nuclear Energy of the Republic of Lithuania;
2.3. Law on the Management of Radioactive Waste of the Republic of Lithuania;
2.4. Law on Construction of the Republic of Lithuania;
2.5. Law on Metrology of the Republic of Lithuania;
2.6. Regulations on the issue of licenses and permits to engage in nuclear energy activities, approved by Resolution No 722 of the Government of the Republic of Lithuania of 20 June 2012 "On the approval of Regulations on the issue of licenses and permits to engage in nuclear energy activities";
Amendments to the paragraph:
No 22.3-205, 30/08/2018, published in TAR on 31 August 2018, ID 2018-13689.

2.7. Lithuanian Hygiene Standard HN 73:2018 "Basic standards of radiation protection", approved by Order No 663 of the Minister for Health of the Republic of Lithuania of 21 December 2001 "On the approval of the Lithuanian Hygiene Standard HN 73:2001 'Basic standards of radiation protection'";
Amendments to the paragraph:
No 22.3-205*, 30/08/2018, published in TAR on 31 August 2018, ID 2018-13689*

2.8. Nuclear Safety Requirements BSR-1.9.1-2017 "Standards of release of radionuclides from nuclear installations and requirements for the plan on release of radionuclides", approved by Order No 22.3-98 of the Head of the State Nuclear Power Safety Inspectorate (VATESI) of 27 September 2011 "On the approval of Nuclear Safety Requirements BSR-1.9.1-2017 'Standards of release of radionuclides from nuclear installations and requirements for the plan on release of radionuclides'";
Amendments to the paragraph:

No 22.3-201, 31/10/2017, published in TAR on 31 October 2017, ID 2017-17210.

2.9. Nuclear Safety Requirements BSR-1.4.1-2016 "Management System", approved by Order No 22.3-56 of the Head of VATESI of 21 June 2010 "On the approval of Nuclear Safety Requirements BSR-1.4.1-2016 'Management System'";

2.10. Nuclear Safety Requirements BSR-2.1.2-2010 "General requirements for ensuring safety of nuclear power plants with RBMK-1500 type reactors", approved by Order No 22.3-16 of the Head of VATESI of 5 February 2010 "On the approval of Nuclear Safety Requirements BSR-2.1.2-2010 'General requirements for ensuring safety of nuclear power plants with RBMK-1500 type reactors'";

2.11. Nuclear Safety Requirements BSR-1.8.2-2015 "Categories of modifications of nuclear facility and procedure of performing the 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 'Categories of modifications of nuclear facility and procedure of performing the modifications'";

2.12. 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'";

Amendments to the paragraph:
No 22.3-205, 30/08/2018, published in TAR on 31 August 2018, ID 2018-13689.

2.13. Emergency preparedness requirements applicable to organisations operating nuclear facilities, approved by Order No 22.3-107 of the Head of VATESI of 24 October 2008 'On the approval of emergency preparedness requirements applicable to organisations operating nuclear facilities'";

2.14. Nuclear Safety Requirements BSR-1.7.1-2014 "Fire safety of structures, systems and components important to safety of nuclear facility", approved by Order No 22.3-205-57 of the Head of VATESI of 10 April 2014 'On the approval of Nuclear Safety Requirements BSR-1.7.1-2014 'Fire safety of structures, systems and components important to safety of nuclear facility'";

2.15. Nuclear Safety Requirements BSR-1.8.3-2017 "Technical Specification of Nuclear Facility", approved by Order No 22.3-205-222 of the Head of VATESI of 24 November 2017 "On the approval of Nuclear Safety Requirements BSR-1.8.3-2017 'Technical Specification of Nuclear Facility'";

Insertion of the paragraph:
No 22.3-225, 24/11/2017, published in TAR on 24 November 2017, ID 2017-18617.

2.16. Nuclear Safety Requirements BSR-1.8.4-2018 "Ageing management of structures, systems and components important to safety of nuclear facility", approved by Order No 22.3-169 of the Head of VATESI of 25 July 2018 "On the approval of Nuclear Safety Requirements BSR-1.8.4-2018 'Ageing management of structures, systems and components important to safety of nuclear facility'";

Insertion of the paragraph:
No 22.3-172, 25/07/2018, published in TAR on 25 July 2018, ID 2018-12396.

2.17. Nuclear Safety Requirements BSR-1.8.5-2018 "Commissioning of nuclear facility", approved by Order No 22.3-295 of the Head of VATESI of 4 December 2018 "On the approval of Nuclear Safety Requirements BSR-1.8.5-2018 'Commissioning of nuclear facility'".

Insertion of the paragraph:
No 22.3-297, 04/12/2018, published in TAR on 4 December 2018, ID 2018-19719.

CHAPTER III
DEFINITIONS

3. The key definitions used in the Requirements are as follows:

3.1. **Spent nuclear fuel storage facility** – a whole of buildings, structures, systems and components for storing spent nuclear fuel.

3.2. **Postulated initiating event**– an event detected during the stage of design of a nuclear installation which may give rise to an anticipated operational occurrence, design-basis accident or beyond-design-basis accident.

3.3. Other definitions used in the Requirements correspond to the definitions in the legal acts referred to in paragraphs 2.1, 2.2, 2.3, 2.4 and 2.10 of the Requirements.

CHAPTER IV
ABBREVIATIONS

4. The abbreviations used in the Requirements are as follows:

4.1. Site – storage facility construction site;

4.2. NPP – nuclear power plant;

4.3. SSCs – structures, systems and/or components;

4.4. SNF – spent nuclear fuel;

4.5. Design – design of the building and equipment of a spent fuel storage facility;

4.6. RCS – radiation control system;

4.7. Storage facility – spent nuclear fuel storage facility;

4.8. IS – important to safety;

4.9. IAEA – International Atomic Energy Agency.

CHAPTER V
GENERAL REQUIREMENTS

5. SNF shall be managed and stored in compliance with the requirements set out in the legal acts referred to in paragraphs 2.1, 2.2 and 2.3 of the Requirements and in nuclear safety normative technical documents.

6. The holders of licences specified in Article 22(1) (1) to (4) of the law referred to in paragraph 3.1 of the Requirements (hereinafter “the licence holder”) shall:

6.1. ensure that staff members involved at individual stages of SNF management are trained to analyse and assess all stages of SNF management in an integrated way so that the management of SNF at one stage would not affect other management stages, taking into account their interdependence and ability to adequately respond in cases of any deviations from the limits and under conditions for normal operation;

6.2. perform regular control over the storage facility and monitoring of changes in the characteristics of the site.

7. The licence holder shall be responsible for the following:

7.1. the compliance of SNF management with the Radioactive Waste Management Programme mentioned in the law referred to in paragraph 2.3 of the Requirements, taking into account the interdependence of all management stages and choices of management from the generation of SNF until its disposal or processing;

7.2. the management of SSCs IS ageing in accordance with the requirements laid down in the legal act referred to in paragraph 2.16 of the Requirements over the whole lifecycle of the storage facility and the storage facility operation experience gained by the licence holder and that of others in the area of determining the remaining operation lifetime and periodic safety reviews and assessment of the storage facility.

Amendment to the paragraph:
No 22.3-172, 25/07/2018, published in TAR on 25 July 2018, ID 2018-12396.

8. The legal rules governing the rights to ownership of SNF are defined in the legal act referred to in paragraph 2.2 of the Requirements. The distribution of responsibilities, rights and obligations between the owner of SNF and the licence holder shall be clearly defined and documented.

9. The licence holder shall notify VATESI of any changes in the right to ownership of SNF or in the relationship between the owner of SNF and the licence holder.

10. Safety of the storage facility shall be ensured through a consistent implementation of the "defence-in-depth" principle based on the system of barriers which prevents the spread of radioactive materials within the storage facility and their leakage outside and which protects, by applying the system of technical and organisational measures, the barriers and maintains their suitability to serve as a measure for protecting the staff and population against the impact of ionising radiation during the storage facility operation.

CHAPTER VI
REQUIREMENTS FOR SAFETY ANALYSIS AND SUBSTANTIATION

11. The licence holder must ensure that safety substantiation documents are in place and in use and maintain safe operation at all stages of the lifecycle of the storage facility and in assessment of the effects of any changes, which have taken place during the storage facility operation, on safety.

12. The safety analysis and substantiation must identify and substantiate whether the siting, design, construction, operation and decommissioning of the storage facility meet the requirements of legal acts of the Republic of Lithuania on nuclear safety, radiation and physical protection.

13. The safety analysis report of the storage facility and the normative technical documents of the licence holder must be updated as soon as practically possible (subject to the importance of new information) in case of any modifications to the storage facility, adoption of new, amendment or repeal of existing nuclear safety requirements and regulations, as well as other legal acts on nuclear safety and radiation protection, completion of storage facility's periodic safety analysis and substantiation, presence of analysis of an unusual event occurring in the storage facility the results of which are related to the safety of the storage facility and/or upon occurrence of any other new information related to the safety of the storage facility.

14. The safety analysis and substantiation shall:

14.1. provide basis for assumptions underlying the design of the storage facility, paying attention to the quantity and characteristics of SNF to be stored;

14.2. provide basis for the period of storage facility operation, taking into account the limits and conditions of safe operation under which the storage facility may be operated, as well as any factors that may affect the safety of the storage facility;

14.3. set out operation limits and conditions for SSCs IS, taking into account the maximum thresholds set out in the design of the storage facility and in the Requirements (for example, maximum allowed effective neutron multiplication factor, temperature of SNF components and the levels of on-site and off-site ionising radiation), and also assessing whether the limits and conditions are in conformity with the acceptance criteria for storage at the facility;

14.4. reflect the analysis of nuclear and radiological accidents (hereinafter-"accident"), taking into account postulated initiating events, safety criteria and activity limits of emissions of radionuclides to the environment. In addition, the following events shall be analysed:

14.4.1. defects in SNF baskets;

14.4.2. improper placement of SNF into a cask;

14.4.3. failure of SNF cooling system;

14.4.4. changes in the medium wherein SNF is stored;

Amendments to the paragraph:

No 22.3-205*, 31/01/2018, published in TAR on 31 January 2018, ID 2018-01489.*

14.5. provide basis for design solutions, showing that:

14.5.1. the postulated initiating events have been chosen subject to the characteristics of the site and there is adequate response to the effects of the postulated initiating events;

14.5.2. the impacts affecting safety have been assessed;

14.5.3. the compliance of technical solutions applying both to individual parts of the storage facility and to the storage facility as a whole with the legal acts laying down the requirements for nuclear safety and radiation protection have been assessed and the analysis and calculations have been performed in full;

14.5.4. the safety objectives have been achieved;

14.5.5. the guaranteed safety is achievable at the time of normal operation and that the aspects of site safety have been considered;

14.5.6. the interdependencies among individual stages of SNF formation and its management process have been taken into account, including possible emplacement of SNF in a disposal facility;

14.5.7. the conformity of cask construction and SNF components with the design limits and conditions of safe storage facility operation, as well as conformity with the acceptance criteria, has been ascertained;

14.5.8. the envisaged decommissioning of the storage facility has been taken into account;

14.5.9. the SNF handling facility known as the hot cell (a chamber with SSCs for SNF handling) has been considered, taking into account the safety of handling process operations performed inside it;

14.5.10. the activity of radionuclides discharged into the environment in the process of normal operation of the storage facility is under control and limited in the manner that an annual effective dose would not exceed a dose constraint and would be as low as reasonably achievable subject to economic and social factors;

14.6. prove that the technical solutions of the design of the storage facility are justified on the basis of:

14.6.1. the accurate and comprehensive qualification of SNF, specifying its physical, chemical, radiological and engineering characteristics, and presenting information on the degree of its enrichment, burn-up and the period of storing irradiated spent nuclear fuel in retention basins;

14.6.2. the assessed subcriticality of SNF and the discharge of decay heat in a single cask and in the storage facility as a whole, as well as any potential change in the above over the period of storage;

14.6.3. the effect of SNF on temperature variations in a single cask and in the storage facility as a whole;

14.6.4. the assessment of potential formation of explosive gas from SNF likely to lead to fire and/or explosion and consequential damage to SNF components or casks thus endangering radiation protection;

14.6.5. the prevention of criticality covering both individual casks of SNF and the storage facility as a whole, including potential deviation from the normal operation of the storage facility during the process of its operation which is likely to occur at least once over the expected lifetime of the storage facility (hereinafter “anticipated operational occurrence”) and accident situations;

14.6.6. the possibilities for safe handling and reloading of SNF;

14.6.7. the established limits and conditions of safe operation, showing that a sufficient number of sequentially designed mutually independent SSCs IS are in place to ensure, in case of failure of one of them, the continuity of the respective function by other SSCs;

14.6.8. the performed analysis of safety functions of SSCs IS during the operation of the storage facility, including accident situations, taking into account future loads as well as any changes in these loads and in the characteristics of materials during the operation of the storage facility;

14.6.9. the performed analysis of SNF handling process operations and organisation of their management in terms of safety of the operations;

14.6.10. the use of organisational and technical measures in light of external natural hazards and hazards caused by human activity at all stages of the lifecycle of the storage facility;

14.6.11. the assessed emergency preparedness of the storage facility in case of nuclear and/or radiological accidents, including the properties of the site of the storage facility and the surrounding

area likely to influence mitigation of consequences of such accidents, fire extinction and other emergency response in the storage facility and on its site;

14.6.12. the assessed quantity of radioactive waste generated at the time of storage facility operation as well as the methods and measures for reducing and managing it;

14.6.13. the defence-in-depth principle implemented in the design;

14.7. assess the management system of the applicant or licence holder, including the established relationship with the designer and contractors of the storage facility in compliance with the requirements laid down in the legislation of the Republic of Lithuania governing legal relations in construction and in the legal act referred to in paragraph 2.9 of the Requirements;

14.8. set out the limits and conditions of safe operation of the storage facility, SSCs IS and SNF casks, and the acceptance criteria for storage at the facility, taking into account the following:

14.8.1. likely impacts of external natural hazards and hazards caused by human activity on the safety of the storage facility, the assessment of these impacts and changes envisaged in relation thereto during the operation of the storage facility;

14.8.2. conditions inside the storage facility (temperature, humidity and the quantities of pollutants/contaminants);

14.8.3. methods and possibilities to ensure storage facility's operation limits and conditions and the acceptance criteria for storage at the facility.

15. The findings of the safety analysis performed shall serve as the basis for drafting a preliminary, updated, final or decommissioning safety analysis report (hereinafter "the safety analysis report"). The safety analysis report shall:

15.1. demonstrate that proper functioning and interoperability of all SSCs IS that guarantee safe operation of the storage facility and its decommissioning are ensured on the basis of estimations and calculations;

15.2. contain safety substantiation which is provided in a consistent, clear and precise manner. It must clearly show and substantiate why the respective calculations models have been used, what parameters have been selected and what marginal conditions or assumptions have been applied in safety assessment. The safety analysis report must present coherent and reasonable arguments for all solutions so that to make it possible to carry out independent audit and evaluation of the solutions;

15.3. demonstrate that the entire process of designing, including the identification of design requirements, the collection and evaluation of the respective data, the elaboration of the design, the drawing up of the safety analysis and safety analysis report, has been implemented in compliance with the requirements set out in the legal acts of the Republic of Lithuania governing nuclear safety and physical and radiation protection by providing references in the safety analysis report to the sources of documents and literature used.

16. The safety analysis report shall be drawn up in accordance with a typical content of the safety analysis report presented in Annex 1 hereto and shall contain all the information referred to therein, except for cases when the presentation of certain information is not possible due to the stage of the storage facility lifecycle to substantiate the safety of which the report is being made, due to the technology of the specific storage facility or due to other circumstances characteristic to the specific storage facility, and/or when the information has no effect on ensuring the safety of the storage facility at the stage at issue and further stages of its lifecycle. The aforementioned circumstances must be listed and substantiated in the safety analysis report.

CHAPTER VII
ANALYSIS AND SUBSTANTIATION OF THE STORAGE FACILITY SITE

17. The size of the site for the storage facility shall be selected taking into account the quantity of casks with SNF envisaged to be stored. It is advisable to foresee the possibility to expand the storage facility.

18. The process of on-site safety analysis and substantiation requires the analysis and assessment of the on-site characteristics likely to have direct affect on the safety of the storage facility.

19. While assessing the external natural factors by their potential impact on the operation of the storage facility, it is required to:

19.1. collect documents on the cases of natural hazards on the site of the storage facility and in the vicinity thereof and the severity of their consequences, and assess the uncertainty of the collected data;

19.2. identify and assess potential events likely to occur as a result of external natural hazards on the site at issue and in the vicinity thereof. When assessing the hazards, the size of the territory for which external natural hazards are to be identified and assessed should depend on potential impacts of the hazards on the safety of the storage facility.

20. When assessing potential external and internal hazards caused by human activity, it is required to:

20.1. assess the human activities and infrastructure in the vicinity of the site which may have effect on the safe operation of the storage facility;

20.2. identify the factors induced by human activities which may have effect on the safe operation of storage facility;

20.3. apply up-to-date established models of assessing impacts of human activities on the storage facility.

21. Site assessment of the storage facility must include:

21.1. the analysis and assessment of possibilities for the management of radioactive waste generated by storage facility operation (transportation, storage and processing);

21.2. the analysis and assessment of possibilities for the application of off-site technical and/or administrative measures to compensate for shortcomings of the site.

22. When assessing the site for the storage facility, it is required to analyse and assess the possibility of applying administrative and technical measures of physical protection. The analysis shall be focused on the assessment of the following characteristics of the storage facility site and its surrounding area which may have effect on the application of physical protection measures or their effectiveness: the topography, infrastructure, meteorological conditions of the area and other factors. The analysis shall encompass the territory or territories anticipated for the storage or collection of dual-use nuclear goods and/or SSCs IS which are to be protected to prevent attempts of their illegal seizure or terrorist acts.

23. If the safety analysis and substantiation of the site reveals the existence of any on-site shortcomings of the storage facility which may have a negative effect on the safety of the storage facility at any stage of its lifecycle, technical solutions of the storage facility design and administrative measures shall be specified to compensate for the above-mentioned shortcomings. If the shortcomings cannot be compensated, the site shall be declared unfit.

24. To obtain a license referred to in Article 22(1)(1) or Article 22(1)(3) of the legal act referred to in paragraph 2.1 of the Requirements, the applicant is required to make and provide in the preliminary safety analysis report a description of the procedure for monitoring external natural and human-induced hazards, their changes and effects on the characteristics of the site in order to allow for the assessment of the compliance of the hazards with those identified in the preliminary safety analysis report of the storage facility.

25. The site evaluation report shall be drawn up in accordance with a typical content of the storage facility site evaluation report presented in Annex 2 hereto. If any part of the typical content of the storage facility site evaluation report is omitted, it is required to justify in the report that the safety analysis and substantiation in this part have no effect on ensuring the safety of the storage facility during its operation and decommissioning.

CHAPTER VIII
REQUIREMENTS FOR PERIODIC SAFETY ANALYSIS AND SUBSTANTIATION

26. In compliance with the requirements of the legal act referred to in paragraph 2.1 of the Requirements, the licence holder is required to carry out periodic safety analysis and substantiation of the storage facility, draw up a periodic safety evaluation report and submit it to VATESI for approval.
Amendments to the paragraph:
No 22.3-205*, 28/06/2018, published in TAR on 28 June 2018, ID 2018-10721.*

27. *Repealed as from 1 November 2018.*
Repeal of the paragraph:
No 22.3-205*, 28/06/2018, published in TAR on 28 June 2018, ID 2018-10721.*

28. *Repealed as of 1 November 2018.*
Repeal of the paragraph:
No 22.3-149, 28/06/2018, published in TAR on 28 June 2018, ID 2018-10721.

29. The periodic safety evaluation report shall be drawn up in accordance with a content presented in Annex 3 hereto.
Amendments to the paragraph:
No 22.3-149, 28/06/2018, published in TAR on 28 June 2018, ID 2018-10721.

CHAPTER IX
STORAGE FACILITY DESIGN

SECTION I
GENERAL REQUIREMENTS FOR STORAGE FACILITY DESIGN

30. The storage facility must be designed in compliance with:
30.1. legal acts referred to in paragraphs 2.1, 2.2, 2.3 and 2.4 of the Requirements;
30.2. obligatory normative technical documents of nuclear safety listed in Article 5(1) (1) and (2) of the legal acts referred to in paragraph 2.1 of the Requirements;
30.3. obligatory design documentation of a storage facility construction works listed in Article 24(3) of the legal act referred to in paragraph 2.4 of the Requirements;
30.4. technical specification of the storage facility drawn up by the builder (client) of the storage facility and coordinated with VATESI. Requirements for the preparation, coordination and amendment of the technical specifications are set out in the legal act referred to in paragraph 2.15 of the Requirements.
Amendments to the paragraph:
No 22.3-205*, 24/11/2017, published in TAR on 24 November 2017, ID 2017-18617.*

30[1]. It is advisable to design the storage facility taking into account IAEA's recommendations and practices of other organisations operating in the area of SNF management and storage.
Insertion of the paragraph:
No 22.3-225, 24/11/2017, published in TAR on 24 November 2017, ID 2017-18617.

31. The storage facility shall be designed in such a way that it would be possible to perform the following main safety functions under the conditions of normal operation, anticipated operational occurrences and design-basis accidents:
31.1. subcriticality control;
31.2. protection of the staff of the storage facility and population against the effects of ionising radiation;

31.3. cooling control;

31.4. confinement of radionuclides;

32. The storage facility and its SSCs shall be designed so that safety, to the extent possible, shall be ensured with passive SSCs IS (not requiring external mechanical impact or power source).

33. The SSCs of the storage facility shall be designed taking into account the anticipated service life of the storage facility.

34. The design of the storage facility shall:

34.1. describe the site of the storage facility and its plan as well as assess the aspects of the site likely to have impact on the safety of the storage facility;

34.2. describe the storage facility, specifying its SSCs and all technological processes involving SNF and casks;

34.3. assess external natural hazards which have been identified in the site safety analysis and substantiation as likely to affect the safety of the storage facility (e.g. extreme conditions (rain, hail, snow, icing, wind, tornado, hurricane, lightning, high and low temperatures, humidity, flooding, earthquake, fire));

34.4. assess potential human-induced hazards (e.g. fire, explosion, spread of hazardous and corrosive substances, plane crash, flying objects, flooding, loss of power supply);

34.5. assess potential internal hazards (e.g. failures in power supply, air or water circulation or ventilation, misuse of chemical substances or electricity, failures of equipment and components, including downfall of components being handled, their damage, human errors, internal fires and explosions, flooding);

34.6. provide the list of postulated initiating events made taking into account external and internal hazards and combinations thereof, anticipated failures in SSCs IS, staff errors and other actions likely to result in a postulated initiating event. The list of the postulated initiating events shall include events that can lead to both design-basis accidents and beyond-design-basis accidents;

34.7. substantiate that the design and construction of the storage facility comply with construction normative technical documents and nuclear safety normative technical documents, and that building materials are selected taking into account the envisaged lifetime of storage facility;

34.8. in the context of the analysis and substantiation referred to in paragraph 22 of the Requirements, provide for technical solutions ensuring the physical protection of the storage facility and its SSCs through the maximum use of the storage facility constructional elements and equipment characteristics;

34.9. classify SSCs IS on the basis of their importance to nuclear and radiation safety;

34.10. describe the characteristics of the SSCs IS of the storage facility which have effects on nuclear safety and radiation and/or physical protection;

34.11. specify the safe operation limits and conditions of SSCs IS as well as acceptance criteria of casks with SNF for storage at the storage facility, as required for ensuring the safety of the storage facility, its equipment and SNF casks throughout the entire lifetime of their operation as well as provide for administrative measures to prevent violations of the operation limits and conditions;

34.12. describe instruments and equipment identified as SSCs IS for monitoring, measuring and control of the safe operation limits and conditions of the storage facility;

34.13. specify the marginal values of functional possibilities and operational characteristics of the SSCs IS of the storage facility under the conditions of SNF handling and storage, as are necessary for the purpose of maintaining the design characteristics of casks for the storage of SNF and ensure radiation protection of staff and population;

34.14. provide for technical solutions to ensure fire safety of the SSCs IS of the storage facility in accordance with the safety analysis report and the fire safety analysis of the SSCs IS of the storage facility in accordance with the requirements laid down in the legal act referred to in paragraph 2.14 of the Requirements;

34.15. provide for information communication equipment and measures, including duplicating ones, used for warning of deviations from normal operation limits and conditions stipulated in the design

of the storage facility and for the management of storage facility systems under the conditions of normal operation, anticipated operational occurrences as well as design-basis and beyond-design basis accidents, concurrently ensuring the information safety of such equipment and measures;

34.16. describe administrative measures at all stages of storage facility lifecycle, including handling, storage and traceability of documents, the SSC IS maintenance, monitoring and inspections in order to ensure the safe operation of the storage facility;

34.17. provide for computer systems or computer-controlled measurement and control systems or individual components programmed by measurement and control systems (hereinafter "computer equipment"), as well as software used together, that must be in compliance with the legal acts of the Republic of Lithuania on nuclear safety and radiation protection and established engineering practices documented in the normative technical documents of the applicant or licence holder. Computer equipment and software must be designed in a manner that guarantees their cybersecurity and possibility to perform periodic testing to certify the operation of the equipment. Reliability and periodic testing of computer equipment and software must be in conformity with their functions and importance to safety, and designed in a manner that enables improvements and testing of the computer equipment and software over the entire design life of their operation. Periodic testing of the computer equipment and software must be carried out in accordance with the procedure and at intervals set out in the licence holder's normative technical documentation;

34.18. provide references to the sources of technical information used in the process of the design of the storage facility;

35. Measures of protection against external hazards provided for in the design of the storage facility should not affect the application of other measures.

36. The design of the storage facility shall assess, describe and substantiate design-basis earthquake associated with ground motion of the storage facility's site. Design-basis earthquake shall be estimated as a ground motion at a bare field of the ground surface and at the level of the foundation base and shall be expressed as the ground motion acceleration spectrum.

37. SSCs IS, the failure of which may result in radioactive emissions inside or outside the storage facility, and SSCs IS required for the performance of accident management actions shall be designed taking into account impacts resulting from the loads of design-basis earthquakes on the SSCs IS.

38. Systems containing combustive or explosive materials and located in the same premises together with other SSCs IS, as well as fire detection, emergency alert and fire extinction systems located in the same premises together with other SSCs IS, shall be designed taking into account impacts resulting from the loads of the design-basis earthquakes on the systems.

39. The SSCs referred to in paragraphs 37 and 38 of the Requirements shall maintain the integrity, tightness and functionality during the design-basis earthquake.

40. The storage facility design shall assess the seismic resistance of the SSCs referred to in paragraphs 37 and 38 of the Requirements in compliance with established engineering practices laid down in standards and other documents (e.g. Seismic Analysis of Safety-Related Nuclear Structures, ASCE 4-98, published by American Society of Civil Engineers, 2000, Seismic Design Criteria for Structures, Systems, and Components in Nuclear Facilities, ASCE/SEI 43–05, published by American Society of Civil Engineers, 2005, Evaluation of the Seismic Design Criteria in ASCE/SEI Standard 43-05 for Application to Nuclear Power Plants(NUREG/CR-6926), published by U.S. Nuclear Regulatory Commission, 2007).

41. The floor response spectrum, which is derived as structural response to the design-basis ground motion, shall be used as the seismic input for designing the SSCs referred to in paragraphs 37 and 38 of the Requirements.

42. When designing seismic-resistant SSCs, normal operation loads and loads in case of anticipated operational occurrences shall apply in conjunction with the loads of the design-basis earthquakes.

43. Seismic qualification of the SSCs referred to in paragraphs 37 and 38 above shall be performed by the use of one or more of the following approaches: analysis, testing, earthquake experience and/or comparison of candidate SSC with already qualified items (similarity).

44. Seismic qualification of actual or prototype SSC shall be made by the use of one of the following:

44.1. reduced-scale model;

44.2. reduced-scale prototype;

44.3. simplified SSC, in accordance with similarity analysis between the component and its reference item when direct qualification has been performed on the latter.

45. Seismic qualification by analysis should be used for SSCs that cannot be qualified by testing.

46. For components not modelled together with the supporting structure, the input for analysis shall be the floor response, expressed in terms of either design floor time history (a record of the floor motion with time for the structure under consideration derived from the design-basis ground motion, with account taken of the variability of and uncertainty in the input ground motion and the characteristics of the building and the foundation) or design response spectra.

47. The output of seismic linear dynamic analysis shall be expressed in terms of floor response spectra, maximum relative displacements, relative velocities, absolute accelerations and maximum stresses during an earthquake.

SECTION II
SSCS IS OF STORAGE FACILITY AND THEIR CONSTRUCTIONAL CRITERIA

48. SNF in the storage facility shall be stored in casks only.

49. When designing the storage facility, it is advisable to use engineering practices and nuclear energy technologies used for similar storage facilities and the most recent standards.

50. SSCs IS shall be designed and arranged in such a way that:

50.1. their effect on each other and compatibility with the characteristics of the site as well as the environmental impact would be taken into account;

50.2. safety functions would be effectively performed under the conditions of potential flooding, fire and explosion of the storage facility. Non-flammable and heat resistant materials shall be used in SSCs IS intended for storing SNF and controlling the performance of safety functions;

50.3. they would be duplicated and mutually independent so that a failure of one SSCs IS during operation of the storage facility would not affect the safety of the storage facility and other SSCs IS;

50.4. they would function in a reliable manner in the case of the postulated initiating events envisaged in the design solutions. The period of operating SSCs IS shall be justified and specified in the design of the storage facility;

50.5. their physical safety, the possibility to perform their maintenance, repair, inspection and testing would be ensured and it would be possible to access them in the event of accidents for the purpose of eliminating the consequences thereof;

50.6. the effects of external hazards on SSCs IS would be minimised, with account taken of the importance of the SSCs IS for mitigating the consequences of the effects caused by external hazards;

50.7. the minimum interaction between the buildings with SSCs IS and other structures of the storage facilities as a result of external hazards would be ensured;

50.8. to ensure that SSCs IS would withstand the effects of external hazards specified in the design of the storage facility;

50.9. human factors and minimisation of employee errors while using computer equipment and software during operation of the storage facility would be taken into account. The computer equipment, software and other SSCs IS should include components (indicators, alarms, keys, etc.) that enable storage facility staff to perform and control SNF handling process operations and reduce the likelihood of employee error during operation of the storage facility.

51. The systems for explosive gas concentrations, flooding and fire detection, emergency alert and fire extinction shall be designed in such a way that to enable reduction of the adverse effect of fire, flooding and explosions on SSCs IS of the storage facility to the level at which the limits and conditions of safe storage facility operation are not exceeded.

52. The area for storing loaded SNF casks shall be designed in such a way that public engineering and communication networks would not be running through it.

53. The internal engineering and communication networks at the locations where casks with SNF are unloaded and stored shall be as short and straight as possible and the number of maintenance operations shall be as limited as possible in order to avoid excessive SNF handling operations and prevent unauthorised access to the respective monitored and controlled zones.

54. The storage facility shall be designed so that operations of transporting heavy cargos near casks with SNF and SSCs IS would be minimised as much as possible.

55. The storage facility design shall ensure the possibility of removing any cask with SNF during the period of storage facility operation in case of any corrective actions being required and at the end of storage facility life.

56. The design of the storage facility shall provide for the possibility of preparing casks with SNF for storage and checking their tightness.

57. The area intended for storing loaded SNF casks should be separated from other premises.

58. The storage facility design shall include SNF handling equipment, called the hot cell, to be used for checking, removing and reloading of casks or SNF or for performing corrective actions, if any changes in the condition of the cask or SNF are detected during storage. The licence holder shall ensure the possibility to use the hot cell of SNF at any time of storage facility operation for placing the removed SNF and casks in the process of performing corrective actions.

59. It is required to provide for enough space for the transportation of casks inside the storage facility as well as for the maintenance and operation of SSCs IS in the storage facility.

60. The design shall include equipment for handling the components of untight and damaged SNF and its storage casks in the storage facility, if the storage of such SNF is envisaged in the technical solution of the storage facility. If the function of storing untight and damaged SNF is not envisaged, the presence of such fuel in the storage facility must be prevented. The measurements of SNF tightness shall be made prior to loading it into casks.

61. The storage facility shall be designed in such a way that all employees could easily leave its premises in the event of an accident.

62. The parts of the storage facility (such as openings related to cooling or loading/unloading SNF) where no barriers of biological protection are installed must be designed in such a way that no water, inorganic solutions, organic substances, etc. could enter them, as this could lower the subcriticality level of SNF and/or the designed effectiveness of heat off-take, lead to corrosion and impede the performance of inspections and surveillance.

63. If casks have metal walls, it should be ensured that water does not seep into the space between the wall and the outer shell. Fixed reinforced concrete cask structures must have a water drainage system installed inside.

64. The foundation of the storage facility must be constructed in such a way that it would be able to sustain the impact of all SSCs and the weight of fully loaded casks and that the cask structure would be able to retain stability and durability.

65. Open storage facilities shall be equipped with water collection, drainage, monitoring and processing systems.

66. If the storage facility is designed on the NPP site, the use in the storage facility of common engineering systems shared with the NPP should not increase the risk of a nuclear or radiological accident or the magnitude of its consequences and should not impair the functioning or reliability of SSCs IS.

67. The systems for the control of stored casks with SNF shall ensure the possibility of performing their permanent monitoring and periodic inspections, so that the licence holder would be able to identify the need for corrective measures in order to maintain operation limits and conditions.

68. The storage facility design shall provide for a control room for carrying out, on a permanent basis, remote monitoring and inspection of the indicators of the storage facility and casks with SNF stored therein during the normal conditions of operation and in case of accidents.

69. All engineering networks and systems (water supply, drainage, electricity supply and other systems) shall be designed taking into account their anticipated accidents and the postulated initiating events analysed in the safety analysis.

70. The equipment intended for the detection and confinement of accidents and for the mitigation of their effects shall be designed in such a way that it would be possible to check the equipment for functional preparedness for operation during the entire lifetime of the storage facility and to ensure its operation with power supply from an emergency source.

71. It is required to envisage a reliable emergency power supply to all devices and equipment, central emergency alert systems, physical safety and normal operation systems in the event of primary power failure or disconnection of power supply so that the limits and conditions of safe operation would be retained throughout the period set forth in the design and supported in safety analysis and substantiation.

72. When designing the storage facility, materials, additional welding materials and welding methods shall be compatible with each other and selected in compliance with the requirements laid down in nuclear safety normative technical documentation.

73. The SSCs of the storage facility and their materials shall be such as to enable easy decontamination of their surfaces.

74. When designing the storage facility, it is required to assess the ageing of SSCs IS and factors having effect on their functionality (corrosion, creep, changes caused by ionising radiation, fatigue and shrinkage of materials, etc.). These shall be taken into account at the time of envisaging the period of storage facility operation and maintenance, monitoring, periodic testing and inspections performed during storage facility operation.

75. SNF handling equipment, lifting installations and their equipment intended for relocating, lifting, dismantling of SNF, casks and their components and other SSCs IS (hereinafter “the components being handled”) as well as for other handling process operations performed in storage facilities and on their sites, including operations performed above SSCs IS, shall be designed in such a way, and the licence holder’s normative technical documents shall specify such measures, that:

75.1. to ensure protection of employees against exposure to ionising radiation, facilitate maintenance and minimise the probability of anticipated operational occurrences and accidents, as well as their consequences, during the performance of these operations;

75.2. the SNF handling equipment, lifting installations and their equipment have no sharp angles and endings which could damage the components of SNF;

75.3. the components being handled are protected against uncontrolled dropping while being lifted, relocated or lowered, and the fasteners of the SNF handling equipment, lifting installations and their equipment secure the components being handled from their accidental detachment;

75.4. movement zones for moving equipment and speed limits applicable to them during the operations of SNF handling are established;

75.5. manual operation of the SNF handling equipment and lifting equipment is provided for in cases of any failures of the SNF handling equipment and lifting equipment as well as design-basis and beyond-design-basis accidents;

75.6. the loads of the components being handled do not exceed the limits established in the design and mechanical load limiters are designed for the SNF handling equipment and lifting installations and their equipment;

75.7. operations involving the components being handled are performed and controlled in a remote way, unless the design of the storage facility provides a justification of an alternative method which is compliant with the requirements of nuclear safety and radiation protection and with the principle of optimisation of radiation protection;

75.8. the SNF handling equipment and lifting equipment remain effective and do not impair the integrity and tightness of the components being handled in cases of anticipated operational occurrences or accidents (e.g. in the event of accidental dropping of the components being handled);

75.9. there is no opportunity for incidental or unauthorised use of the SNF handling equipment, lifting installations and their equipment;

75.10. there is no opportunity for lifting, relocating and lowering of the components being handled, if such lifting, relocating and lowering are not envisaged and their safety is not substantiated in the storage facility design;

75.11. the layout, dimensions, direction of movement and the lifting, relocating and lowering heights of the SNF handling equipment, lifting installations and their equipment are ensured so that their operation have no adverse effects on SNF and SSCs IS;

75.12. the use of the SNF handling equipment, lifting installations and their equipment is ensured only in the conditions of the storage facility envisaged in its design.

Amendments to the paragraph:
No 22.3-29, 31/01/2018, published in TAR on 31 January 2018, ID 2018-01489.

SECTION III
SAFETY REQUIREMENTS FOR CRITICALITY

76. The parts of the design related to SNF handling, packing, transporting and storing systems, where solutions thereof are provided, shall justify that the subcriticality level of SNF is ensured, taking into account the uncertainty in the data and calculation methods applied by ensuring safety under the conditions of normal operation, anticipated operational occurrences and design-basis accidents.

77. For estimation of the effective neutron multiplication factor, it is required that:

77.1. priority is given to the conservative estimation method, if the initial enrichment of the SNF being handled is different. When the method of the best estimate is chosen, the account shall be taken of the uncertainties in calculations and the validation of such choice shall be provided;

77.2. subcriticality of individual casks and the storage facility as a whole is substantiated by applying the maximum level of enrichment for SNF, if the enrichment of SNF in individual fuel bundles differs;

77.3. the estimation of subcriticality is based on conservative data;

77.4. the storage facility is considered completely filled with casks with SNF as per design;

77.5. the absorbance of neutrons in SSCs and cask components in the storage facility is not taken into account, except for the cases when the SSCs are irremovably fixed and their neutron absorbance characteristics as well as variations thereof, if any, are assessed;

77.6. when estimating the level of subcriticality, the burnable absorbers of neutrons are not taken into account, except for cases when substantiated estimation methodology is provided. Such methodology must be validated and verified using experimental data;

77.7. any potential deformations in SNF and storage facility components resulting from postulated initiating events are taken into account;

77.8. the moderation and reflection of neutrons are assessed conservatively in cases of all normal operation conditions and in the event of potential storage facility flooding;

77.9. all estimations made for SNF are based on the degree of SNF burn-up and enrichment corresponding to the maximum reactivity, except for cases when this is justified by the presented methodology containing the assessment of decreases in fission product concentrations as a result of nuclear fuel burn-up. Such methodology must be validated and verified using experimental data and the burn-up of the nuclear fuel bundle transferred for storage must be confirmed by measurements and controlled by implementing technical and administrative measures;

77.10. neutron sources in other parts of the storage facility are taken into account in estimations of the criticality of individual storage facility parts;

77.11. conservative assumptions are applied for temperature variations under conditions of normal operation and in case of accidents.

78. When estimating the effective neutron multiplication factor and taking into account uncertainties, it is necessary to ensure that the value of criticality under the conditions of normal operation, anticipated operational occurrences and design-basis accidents is not higher than 0.95.

79. The multiplication factor for infinite medium neutrons may be used as the conservative estimation of the effective neutron multiplication factor. Criticality must be assessed both for a single cask with SNF and for all casks as a whole.

SECTION IV
DESIGN-BASIS REQUIREMENTS FOR SNF COOLING

80. The storage facility shall be designed in such a way that it is possible to ensure cooling of SNF and that the design temperature of SNF capsules and other components important to safety is not exceeded under the least-friendly ambient conditions and in the case of design-basis accidents.

81. Reserve, forced and natural cooling systems shall be designed in such a way that they would be able to cool the maximum quantity of SNF envisaged in the design of the storage facility. The design capacity of the cooling systems shall be determined taking into consideration the minimum time of keeping SNF in the storage pool, with account taken of the fact that the capacity of the cooling systems during storage facility operation may decrease due to a variety of external hazards. When designing the cooling systems, it is necessary to assess both a single cask with SNF and all casks as a whole.

82. The cooling systems shall be designed in such a way as to allow their functioning under the conditions of design-basis accidents.

83. SNF cooling must be ensured during its shipment operations.

84. If SNF is stored in a gaseous medium, the parameters of the medium must be kept within the limits envisaged in the design. The design shall provide for the possibility to measure the parameters of the gaseous medium and restore them, except for cases when the possibility to refuse of such measurements is substantiated.

SECTION V
REQUIREMENTS FOR RADIATION PROTECTION

85. The storage facility shall be designed so that the requirements of radiation protection laid down in the legal acts referred to in paragraphs 2.7 and 2.12 of the Requirements are implemented. In addition, the storage facility shall be designed so that the annual effective dose for population would not exceed 0.2 mSv in case of design-basis accidents during storage facility operation and would not exceed 5 mSv in case of beyond-design-basis accidents.

86. The design of the storage facility shall include equipment and measures to ensure that the doses likely to be received by employees and population under the conditions of storage facility's normal operation, anticipated operational occurrences and design-basis accidents do not exceed the limits established in the legal act referred to in paragraph 2.7 of the Requirements and are as low as is reasonably achievable taking into account social and economic factors.

87. The design of barriers from external exposure shall be based on the conservative assumption that the storage facility is fully loaded with casks storing SNF which is burnt up to the maximum degree and has been retained in the basin for the minimum time set. Where less conservative assumptions are envisaged (e.g. the real time of SNF retention in the basin and/or the average burn-up of SNF), the substantiation for such choice shall be provided.

88. The SNF handling equipment shall be designed for the maximum envisaged quantity of SNF to be handled. The SNF shall be designed in such a way as to prevent the possibility of placing casks with SNF in the locations not specified in the design.

89. When designing measures intended to protect employees, population and the environment from the effects of ionising radiation, reflections and scattering shall be taken into account.

90. The SNF handling area in the storage facility (hot cell) shall be equipped with a ventilation system allowing the maintenance of the pressure at a lower level than that of the

atmosphere to prevent radionuclides from diffusing from the hot cell. The ventilation system of the storage facility should be also equipped with an air filtering system for confinement of radionuclides. Permanent radiological monitoring should be in place for the air exiting the filtering system.

91. Radiological conditions shall be monitored in areas where operations involving SNF and casks are carried out.

92. The design of the storage facility shall provide for technical measures and equipment to control how radiation protection is ensured for employees, population and the environment.

93. The RCS shall ensure the performance of measurements of controlled radiological parameters, which define the condition of the storage facility and the ambient environment, in the scope envisaged in the design under any mode of storage facility operation, including beyond-design-basis accidents, as well as under the conditions of storage facility decommissioning.

94. Under the conditions of normal operation, the RCS shall ensure regular collection and processing of information on the radiological conditions in the storage facility. If the values being measured exceed the limits established in the design of the storage facility, the RCS must automatically transfer the respective information to the storage facility control post.

95. In cases of design-basis and beyond-design-basis accidents, the RCS must ensure prompt collection and processing of information on the radiological conditions of the storage facility and the ambient environment and on the activity and composition of radionuclides emitted to the environment as well as information necessary for projecting changes in the radiological conditions over time and for drafting recommendations on the elimination of radiological consequences.

96. The RCS ensuring regular collection of information on the radiological conditions in the storage facility shall always be kept switched on and have a back-up for information transmission channels.

97. In the event of failure of RCS equipment performing the function of regular control of radiological conditions within the storage facility, all SNF handling process operations shall be suspended until such failure is rectified.

98. The storage facility design shall provide for measures:

98.1. to prevent radioactive materials from accumulating in the systems which must undergo maintenance and to enable decontamination of such systems;

98.2. to prevent uncontrolled access by employees to the storage facility zones where casks with SNF are stored or handled;

98.3. to monitor the level of radioactive contamination in the working places;

98.4. to optimise radiation protection of employees (e.g. by ensuring sufficient space for convenient performance of maintenance works, remote control equipment or by designing special equipment for convenient repair or replacement works.

CHAPTER X
PREPAREDNESS FOR STORAGE FACILITY OPERATION

SECTION I
STORAGE FACILITY COMMISSIONING

99. The purpose of storage facility commissioning is to prove that the constructed storage facility is capable of operating safely. The requirements for the commissioning of the storage facility are set out in the legal act referred to in paragraph 2.17 of the Requirements.

Amendments to the paragraph:
No 22.3-297, 04/12/2018, published in TAR on 4 December 2018, ID 2018-19719.

100. *Repealed as of 1 May 2019.*

Repeal of the paragraph:
No 22.3-297, 04/12/2018, published in TAR on 4 December 2018, ID 2018-19719.

101. *Repealed as of 1 May 2019.*
Repeal of the paragraph:
No 22.3-297, 04/12/2018, published in TAR on 4 December 2018, ID 2018-19719.

102. *Repealed as of 1 May 2019.*
Repeal of the paragraph:
No 22.3-297, 04/12/2018, published in TAR on 4 December 2018, ID 2018-19719.

103. *Repealed as of 1 May 2019.*
Repeal of the paragraph:
No 22.3-297, 04/12/2018, published in TAR on 4 December 2018, ID 2018-19719.

104. *Repealed as of 1 May 2019.*
Repeal of the paragraph:
No 22.3-297, 04/12/2018, published in TAR on 4 December 2018, ID 2018-19719.
Amendments to the paragraph:
No 22.3-205, 30/08/2018, published in TAR on 31 August 2018, ID 2018-13689.

105. Testing involving the use of nuclear and/or nuclear fuel cycle materials specified in paragraph 15.2 of the legal act referred to in paragraph 2.17 of the Requirements shall cover handling and storage process operations for SNF and casks with SNF, recording of such operations and SSCs IS performance checks.
Amendments to the paragraph:
No 22.3-297, 04/12/2018, published in TAR on 4 December 2018, ID 2018-19719.

106. *Repealed as of 1 May 2019.*
Repeal of the paragraph:
No 22.3-297, 04/12/2018, published in TAR on 4 December 2018, ID 2018-19719.
Amendments to the paragraph:
No 22.3-205, 30/08/2018, published in TAR on 31 August 2018, ID 2018-13689.

107. *Repealed as of 1 May 2019.*
Repeal of the paragraph:
No 22.3-297, 04/12/2018, published in TAR on 4 December 2018, ID 2018-19719.

108. *Repealed as of 1 May 2019.*
Repeal of the paragraph:
No 22.3-297, 04/12/2018, published in TAR on 4 December 2018, ID 2018-19719.

109. The licence holder shall ensure that the performance and results of the tests for the commissioning of SSCs IS are recorded in the chronological order. The test documentation (conformity assessment documents issued by an independent assessment body, certificates, attestations, forms listed in the management system documentation of the licence holder) shall be kept up to the completion of the decommissioning of the storage facility.

SECTION II
STORAGE FACILITY OPERATION INSTRUCTIONS

110. The licence holder shall ensure that the normative technical documents of the licence holder related to storage facility operation, as specified in paragraph 4.3 of the legal act referred to in paragraph 2.17 of the Requirements, shall be in place prior to commencement of the tests not involving the use of nuclear and/or nuclear fuel cycle materials. Requirements for preparing, checking and amending the licence holder's normative technical documents related to storage facility operation at the stage of commissioning of the storage facility are set out in the legal act referred to in paragraph 2.17 of the Requirements.
Amendments to the paragraph:

No 22.3-297, 04/12/2018, published in TAR on 4 December 2018, ID 2018-19719.

111. The operation instructions shall define the following:

111.1. maintenance and accounting of unused casks and their parts prior to their loading with SNF, including checking of all necessary documents confirming the quality and completion of the casks;

111.2. SNF handling and storing process operations;

111.3. accounting of casks with SNF placed in the storage facility, collection and storage of data on SNF and casks with SNF as well as the storage location of loaded SNF casks;

111.4. control and recording of SNF relocations within the storage facility;

111.5. use of RCS and its equipment;

111.6. monitoring and control of employee exposure;

111.7. regular control of radioactive contamination;

111.8. regular monitoring of cask cooling;

111.9. maintenance and regular monitoring of cask's internal medium;

111.10. rectification of accidents envisaged in the safety analysis report and elimination of their consequences;

111.11. maintenance, testing and inspection of the storage facility equipment;

111.12. control of corrosion, maintenance and repair of primed and painted surfaces;

111.13. documentation of storage facility operation and control, traceability and storage of such documents.

112. The operation instructions for SSCs shall contain specific guidance for the staff on the methods of work performance under the conditions of normal operation and in case of accidents, specifying the following:

112.1. the title and reference number of the instructions, the date of their approval and/or entry into force, and the name and title of the approving person;

130.2. the purpose of the instructions;

130.3. the scope of the instructions;

112.4. constraints and limits of controlled parameters, violations of which require measures to be taken in order to bring the parameters back to their normal range;

130.6. assessment criteria for right and wrong acts;

130.7. checklists of procedures referenced in the instructions.

113. The operation instructions for SSCs shall be reviewed and revised during the operation of the storage facility in accordance with the procedure and at intervals set out in the licence holder's management system documentation.

Amendments to the paragraph:
No 22.3-297, 04/12/2018, published in TAR on 4 December 2018, ID 2018-19719.

SECTION III
PREPAREDNESS FOR MAINTENANCE, MONITORING, TESTING AND INSPECTIONS OF STORAGE FACILITY AND SSCs IS

114. During the commissioning of the storage facility, the licence holder should approve and implement management system's documents on maintenance, monitoring and inspection of SSCs IS, specifying all the administrative and technical measures necessary to identify and minimise functional degradation of the SSCs IS in a timely manner or to restore the functions of degraded SSCs IS to the storage facility design level. A system of scheduled and periodic inspections should be in place to ensure that the storage facility is operated in a safe manner, as required in the nuclear safety normative technical documents. The scope of maintenance, monitoring and inspection of SSCs IS should be in conformity with the scope indicated in the safety analysis report of the storage facility.

115. The management system's documents on maintenance, monitoring and inspection of SSCs IS should be prepared and implemented so that the requirements laid down in the legal act referred to in paragraph 2.10 of the Requirements.

CHAPTER XI
STORAGE FACILITY OPERATION

SECTION I
MODIFICATIONS

116. Modifications likely to have any effect on the safety of the storage facility during its construction, commissioning, operation and decommissioning should be made in compliance with the requirements laid down in the legal act referred to in paragraph 2.11 of the Requirements.

117. Prior to planning any modifications, it must be ensured that the projected modifications and the potential consequences thereof in any one SSC IS would not affect the operation and/or safety of the related or adjacent equipment and possibilities for further handling of SNF.

SECTION II
MAINTENANCE, MONITORING, TESTING AND INSPECTION OF STORAGE FACILITY AND CHECKS OF LOADED SNF CASKS

118. SSCs IS should be periodically maintained, monitored, tested and inspected in order to secure that the SSCs IS meet the design requirements and are capable of performing the design functions.

119. The programmes of maintenance, monitoring, periodic testing and inspection shall be periodically reviewed and improved in compliance with operation experiences.

120. The licence holder should ensure that metrological confirmation of control, testing and measuring instruments used in the process of maintenance, monitoring, testing and inspection would be performed in accordance with the requirements set out in the legal act referred to in paragraph 2.5 of the Requirements in the procedure established in its implementing legislation.

121. The results of maintenance, monitoring, periodic testing and inspection should be documented, assessed and stored by the licence holder.

122. The programmes of maintenance, monitoring, periodic testing and inspection shall be periodically reviewed and improved in compliance with operation experiences.

123. The licence holder should approve a programme for regular inspection of loaded SNF casks in the storage facility with a view to ensuring that the storage of loaded SNF casks conforms to the limits and conditions of their storage established in safety substantiation documents. The programme shall serve as a basis for:

123.1. monitoring the ambient conditions inside the storage facility;

123.2. assessing the storage facility container intended for storing loaded SNF casks under the conditions of normal operation and in cases of anticipated operational occurrences;

123.3 monitoring of the condition of loaded SNF casks and verification of their integrity during the storage thereof.

SECTION III
PREPAREDNESS IN CASE OF ANTICIPATED OPERATIONAL OCCURRENCES AND ACCIDENTS

124. The licence holder shall envisage the following measures for handling casks with SNF and SNF components which cannot be removed by usual means or which show evidence of degradation:

124.1. measures for the performance of SNF checking, removing and reloading operations in the hot cell in cases of anticipated operational occurrence or accidents;

124.2. the measures referred to in paragraph 124.1 above shall cover safe operations for handling loaded SNF casks not conforming to the acceptance criteria for storage at the facility with a view to performing corrective actions.

125. In compliance with the legal act referred to in paragraph 2.13 of the Requirements, the licence holder must be prepared to adequately respond to accidents related to the on-site handling, storage and transportation of SNF. The results of accident analysis should feed into the emergency preparedness plan and emergency preparedness procedures.

SECTION IV
ACCEPTANCE CRITERIA FOR STORAGE

126. The licence holder shall ensure that casks for storing SNF meet the following requirements envisaged in the design:

126.1. the requirements for storage, transportation and handling (except for transportation beyond the site boundaries of the storage facility), as well as other handling actions, including the possibility of removing casks from the storage facility and transporting them out of the storage facility site after the expiry of the storage period;

126.2. known or potential criteria for SNF acceptance at disposal facilities or other SNF handling actions (treatment, processing, etc.) established in the SNF management strategy which is incorporated in the management system documentation of the licence holder.

127. The acceptance criteria for storage at the facility should be established by the licence holder on the basis of storage facility design solutions.

128. The licence holder shall ensure that loaded SNF casks meet the acceptance criteria for storage at the facility set out in the design of the storage facility by controlling SNF handling process operations and performing their inspections.

SECTION V
IMPROVEMENT OF NUCLEAR SAFETY, RADIATION AND PHYSICAL PROTECTION

128^{1}. The licence holder shall ensure that the status of nuclear safety, radiation and physical protection and emergency preparedness is regularly analysed and assessed, taking into account most recent research results, developments in international nuclear safety standards and operational experience of the licence holder and of other operators in the nuclear energy sector. If the results of the analysis and assessment identify areas where improvements of nuclear safety, radiation and physical protection and emergency preparedness may be implemented, the licence holder shall define safety improvement measures on the basis of the information obtained. The safety improvement measures should meet the requirements laid down in the legal acts governing nuclear safety, radiation and physical protection and emergency preparedness and should be in line with proven engineering practices(activity based on the use of standardised engineering methodology in ensuring the quality of the product and submitting product quality verification results).

128^{2}. The licence holder shall draw up a safety improvement programme for the implementation of safety improvement measures.

128^{3}. The safety improvement programme shall specify:

128^{3}.1. safety improvement measures;

128^{3}.2. objectives of safety improvement measures;

128^{3}.3. anticipated outcomes;

128^{3}.4. time-limits for the implementation of safety improvement measures;

128^{3}.5. persons or structural units responsible for the implementation of safety improvement measures;

128^{3}.6. other information, if any, required for the planning, implementation and traceability of

safety improvements.

128[4]. The safety improvement programme shall be annually reviewed and amended by removing safety measures already in place and adding new safety improvement measures where such measures are necessary in the context of the provisions of paragraph 128[1] above.

128[5]. The licence holder is required to submit the safety improvement programme and its amendments for coordination to VATESI.

128[6]. VATESI shall coordinate the safety improvement programme and its amendments once it has verified that the safety improvement measures envisaged in the safety improvement programme and its amendments are compatible with the requirements laid down in the legal acts governing nuclear safety, radiation and physical protection and emergency preparedness. A decision regarding the coordination of the safety improvement programme and its amendments shall be adopted by VATESI and notified to the licence holder in writing within 20 business days after the receipt of the documents (programme or draft amendment thereof).

Insertion of the section:
No 22.3-205*, 28/06/2018, published in TAR on 28 June 2018, ID 2018-10721.*

CHAPTER XII
STORAGE FACILITY DOCUMENT MANAGEMENT

129. The licence holder is responsible for the management, storage and traceability of safety substantiation documents as well as for the proper use of such documents by the storage facility staff at all stages of the lifecycle of the storage facility. Certified copies of the main safety substantiation document shall be stored separately from the original documents in order to avoid their possible destruction.

130. Safety substantiation documents and their amendments related to the following shall be kept approved, managed and stored at all stages of the lifecycle of the storage facility:

130.1. issuance of licences and permits;

130.2. periodic safety analysis;

130.3. commissioning and operation;

130.4. operational procedure documents;

130.5. modifications;

130.6. maintenance, monitoring, periodic testing and inspection;

130.7. unusual events;

130.8. radiation protection;

130.9. storage and transportation of SNF and other radioactive materials;

130.10. environmental monitoring and discharges of radionuclides and hazardous substances to the environment;

130.11. staff operations in the area of SNF management.

CHAPTER XIII
STORAGE FACILITY OPERATIONAL REPORTS

131. Annual reports on the nuclear safety of the storage facility shall be submitted to VATESI by 1 March of the following calendar year, providing the following:

131.1. information on the operation of the storage facility (protection of employees and population against radiation, environmental impact, ensuring of subcriticality condition of SNF, cooling, etc.);

131.2. information on the functioning of SSCs IS and equipment, information on operations involving SNF, information on actual or potential disruption of normal operation as a result of natural or human-induced circumstances and information on the cases of violation of the operation limits and conditions and other parameters;

131.3. description of any modifications to the storage facility;

131.4. changes in the quantities and characteristics of SNF placed in the storage facility;

131.5. information on loaded SNF casks (cask location, reference number, measurements of cask tightness, surface temperature, ionising radiation emitted by the casks, surface contamination);

131.6. results of the implementation of the programme(s) of storage facility maintenance, periodic testing and inspections for SSCs IS of the storage facility;

131.7. information on the progress of the implementation of the safety improvement programme for the last calendar year, specifying:

131.7.1. completed safety improvement measures under the safety improvement programme and documents showing the completion thereof;

131.7.2. objectives achieved;

131.7.3. results obtained;

131.7.4. interim results for measures started but not yet complete;

131.7.5. safety improvement measures not pursued and the reason for that;

131.7.6. other information, if any, necessary for the planning, implementation and traceability of safety improvements.

Insertion of the paragraph:
No 22.3-205*, 28/06/2018, published in TAR on 28 June 2018, ID 2018-10721.*

CHAPTER XIV
SNF ACCOUNTING

132. The accounting documents for nuclear and radioactive materials of SNF shall be stored and kept up-to-date by the licence holder (showing the assessment of SNF storage conditions in such documents) for as long as SNF is stored at the storage facility and for subsequent five years after its emplacement at a disposal facility or removal from the storage facility. The accounting documents are required for the implementation of SNF management and disposal strategy. The certified copies of these documents shall be stored separately from the original documents in order to avoid their possible destruction.

133. The licence holder must create a database of casks and SNF stored in them which shall provide the following:

133.1. the date and time of loading a nuclear fuel bundle into the nuclear reactor and of its removal from it and the conditions of operating the nuclear fuel bundle;

133.2. the date and time of placing SNF into the retention basin and of its removal from it, specifying its location within the basin;

133.2[1]. the outcome of parameter controls of water used in the retention basis where SNF was stored;

Insertion of the paragraph:
No 22.3-205*, 31/01/2017, published in TAR on 31 January 2017, ID 2017-01776.*

133.3. the results of chemical composition analysis for water contained in cases and the results of measurements and tests carried out during cask drainage and vacuuming;

133.4. the accounting, characteristics, storage location and origin of casks and SNF stored in the storage facility as well as information on their owners;

133.5. the labelling system for casks with SNF allowing the identification of each cask and determination of the location of SNF bundle inside it. Labelling shall be in place throughout the entire period of cask storage;

133.6. the arrangement (diagram) of bundles within a cask;

133.7. variations in the composition of SNF radionuclides;

133.8. the capacity of decay heat discharge;

133.9. the results of measuring ionising radiation emitted by casks;

133.10. information on periodic measurements of cask conditions.

134. The database of casks and SNF stored therein shall be regularly updated subject to changes in the characteristics of casks and SNF during the period of storage.

CHAPTER XV
FINAL PROVISIONS

135. The applicant or licence holder shall be liable for violation of the Requirements in accordance with the procedure laid down in the legal acts of the Republic of Lithuania governing the application of sanctions.

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Annex 1 to Nuclear Safety Requirements BSR-3.1.1-2016 "Management of spent nuclear fuel in dry-type storage facilities"

TYPICAL CONTENT OF A SAFETY ANALYSIS REPORT

1. Introduction
2. General description of the storage facility
2.1. Plan of the storage facility site
2.2. Description of the storage facility
2.3. Description of operations with spent nuclear fuel
3. Requirements for the storage facility
3.1. Applicable nuclear safety requirements, regulations, standards and other technical normative documents
3.2. Safety objectives and criteria
4. Characteristics of the storage facility site
4.1. Natural characteristics of the storage facility site
4.1.1. Geotechnical characteristics of the storage facility site
4.1.2. Seismicity
4.1.3. Shifts
4.1.4. Slope stability and surface erosion
4.1.5. Meteorology and climatology of the area
4.1.6. Hydrology and hydrogeology of the area and storage facility site
4.1.7. Fauna and flora on the storage facility site and in the vicinity thereof
4.2. Data on the population and human activities in the area of the storage facility site
4.2.1. Distribution of the population
4.2.2. Infrastructure in the vicinity of the storage facility site
4.2.3. Transport lines in the vicinity of the storage facility site
5. Characteristics of spent nuclear fuel
5.1. Description of the bundle and basket of spent nuclear fuel
5.2. Surface deposits on spent nuclear fuel bundles and baskets
5.3. Amount of spent nuclear fuel per storage cask and in the storage facility
5.4. Untight and/or damaged spent nuclear fuel and non-tightness and/or damage detection
5.5. Initial enrichment of spent nuclear fuel
5.6. Burn-up, history of operation
5.7. Duration of cooling in the basin
5.8. Isotopic composition
5.9. Subcriticality during storage
5.10. Discharge of decay heat during storage
6. Operations with spent nuclear fuel
6.1. Spent nuclear fuel handling system
6.2. Handling of untight and/or damaged spent nuclear fuel
6.3. Technological process in the basin: SSCs and operations involving loading of spent nuclear fuel
6.4. Transport of spent nuclear fuel: SSCs and procedural operations involving on-site transportation
6.5. Placement of spent nuclear fuel into the storage facility: equipment and procedures
6.6. Handling of spent nuclear fuel in the event of anticipated operational occurrences and accidents

7. Design solutions and substantiation

7.1. Acceptable loads in design work (static, dynamic, cyclic, impact loads, thermal tensions, internal pressures)

7.2. Structures, systems and components of the storage facility

7.2.1. Classification of structures, systems and components

7.2.2. Description of structures, systems and components important to safety and their assessment in terms of the storage facility operation period

7.2.3. Selection and substantiation of materials used for structures, systems and components

7.2.3.1. Physical, chemical and thermal characteristics

7.2.3.2. Resistance

7.2.3.3. Limiting parameters (permissible temperatures and strains of materials)

7.2.3.4. Time-induced processes in materials (corrosion, creep, ageing, shrinkage, ionising radiation impacts)

7.2.4. Substantiation of the period of storage facility operation

7.2.5. Description and assessment of structures, systems and components important to safety necessary to transport SNF outside the site area

7.3. Implementation of the defence-in-depth principle

7.4. Description of radioactive waste management

8. Safety analysis and substantiation

8.1. Hazard assessment

8.1.1. Postulated initiating events

8.1.1.1. External natural hazards

8.1.1.2. External human-induced hazards

8.1.1.3. Internal hazards

8.2. Related and synergistic effects

8.3. Measures of protection against external and internal hazards

8.4. SSCs IS conditions in normal operation and upon occurrence of unusual events

8.5. Results of analyses

8.5.1. Exposure assessment and optimisation for employees and population

8.5.2. Containment and control of the release of radionuclides

8.5.3. Geometry and subcriticality of spent nuclear fuel

8.5.4. Decay heat and its removal

8.5.5. Structural analysis of structures, systems and components of the storage facility (in the light of the information provided under paragraphs 7.1 and 8.4 of this Annex)

8.6. Substantiation and controls of safe and normal operation limits and conditions

9. Spent nuclear fuel acceptance criteria for storage at the facility

9.1. Description of acceptance of spent nuclear fuel: equipment and procedures

9.2. Establishment of the spent nuclear fuel acceptance criteria for storage at the facility

9.3. Description of ensuring long-term compliance with the spent nuclear fuel acceptance criteria for storage at the facility

9.4. Substantiation of the possibility of removing spent nuclear fuel after a long period of storage

9.5. Description of handling procedures for spent nuclear fuel not conforming to the acceptance criteria for storage at the facility

10. Physical safety performance of the storage facility

11. Description of the monitoring of changes resulting from natural and human-induced hazards

12. Description of decommissioning

13. Description of emergency preparedness

14. Description of fire hazard analysis for the storage facility

15. Description of operation of the storage facility

15.1. Description of maintenance, monitoring, testing and inspection

15.2. Management of ageing

15.3. Management of modifications

Annex 2 to Nuclear Safety
Requirements BSR-3.1.1-2016
"Management of spent nuclear
fuel in dry-type storage facilities"

TYPICAL CONTENT OF A STORAGE FACILITY SITE ASSESSMENT REPORT

1. Introduction
2. Summary
3. Description of the storage facility site
3.1. Location and plan of the storage facility site
3.2. Data on natural conditions
3.2.1. Seismicity
3.2.2. Geological faults in the site area
3.2.3. Shifts and their historical data
3.2.4. Geotechnical conditions
3.2.5. Lithology and stratigraphy of the storage facility site
3.2.6. Geomorphology and topography of the storage facility site
3.2.7. Hydrology and hydrogeology of the region and storage facility site
3.2.7.1. Surface water
3.2.7.1.1. Normal drainage conditions
3.2.7.2. Ground water
3.2.7.2.1. Normal conditions
3.2.7.2.2. The maximum level of ground water recorded
3.2.7.3. Floods
3.2.7.3.1. Causes, frequency, intensity and historical data of floods
3.2.8. Meteorology and climatology of the region
3.2.8.1. Air temperature
3.2.8.1.1. Outdoor mean daily temperatures during the warm and cold seasons respectively
3.2.8.1.2. Extreme temperatures recorded
3.2.8.2. Air humidity
3.2.8.3. Precipitation (rain, hail, snow, snow cover, ice, ice cover)
3.2.8.4. Lightning
3.2.8.5. Wind, prevailing directions and intensity
3.2.9. Extreme weather
3.2.10. Important chemical characteristics of the atmosphere
3.2.11. Terrestrial fauna and flora in the storage facility site and in the vicinity of the site
3.2.12. Aquatic fauna and flora in the vicinity of the storage facility site
3.3. Data on the population and human activities in the area of the storage facility site
3.3.1. Distribution of the population
3.3.2. Infrastructure in the vicinity of the storage facility site
3.3.3. Potentially dangerous structures
3.3.4. Transport lines near the site
4. Safety analysis of the storage facility site and substantiation of its appropriateness
4.1. Assessment of external natural hazards
4.1.1. Extreme weather events (e.g., rain, hail, snow, icing, wind, tornado, hurricane, lightning, high and low temperatures, humidity)
4.1.2. Flooding
4.1.3. Earthquake
4.1.4. Fire
4.1.5. Geotechnical site hazards
4.1.5.1. Site stability
4.1.5.1.1. Slope stability

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Annex 3 to Nuclear Safety
Requirements BSR-3.1.1-2016
"Management of spent nuclear
fuel in dry-type storage
facilities"

TYPICAL CONTENT OAF PERIODIC SAFETY EVALUATION REPORT

1. Introduction
2. General description of the storage facility
3. Brief description of structures, systems and components of the storage facility
4. Assessment of compliance of the storage facility with its design and requirements laid down in legal acts on the nuclear safety, radiation and physical protection and emergency preparedness of the storage facility as well as in nuclear safety normative technical documentation:

4.1. Description and assessment of changes in the characteristics of the storage facility site and/or its vicinity and of related measures to compensate for the changes

4.2. Assessment of hazards and unusual events affecting the safety

4.3. Description and assessment of modifications made during the operation of the storage facility

4.4. Description and assessment of compliance with the of loaded spent nuclear fuel casks acceptance criteria for storage at the facility

4.5. Description and assessment of compliance with the requirements for transportation of casks with spent nuclear fuel beyond the site boundaries (if such transportation is envisaged)

4.6. Assessment of the effects of ageing of structures, systems and components important to safety on the storage facility

4.7. Other assessments of compliance of the storage facility with its design and requirements laid down in legal acts on the nuclear safety, radiation and physical protection and emergency preparedness of the storage facility as well as in nuclear safety normative technical documentation

5. Outcomes of the analyses of most recent research results, developments in international nuclear safety standards, best international practices (publications by the European Nuclear Safety Regulators Group and the Western European Nuclear Regulators Association as well as the safety requirements set out by the International Atomic Energy Agency), own experience and that of others operating in the nuclear energy sector, safety improvement measures and time-limits for their implementation
6. Description of radiological effects on the environment and compliance of radionuclides discharged into the environment, their intensity, pathways, media or points of discharge with the plan on release of radionuclides into the environment
7. Necessary corrective measures to ensure compliance of the storage facility with its design and requirements laid down in legal acts on the nuclear safety, radiation and physical protection and emergency preparedness of the storage facility as well as in nuclear safety normative technical documentation (where cases of existing non-compliance with the aforementioned documents or cases of non-compliance that may occur until the next periodic safety analysis are detected during the periodic safety analysis) and time-limits for their implementation
8. The deadline for carrying out the next periodic safety analysis and substantiation

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Amendments to the Annex:
No 22.3-205*, 29/06/2018, published in TAR on 28 June 2018, ID 2018-10721.*

Amendments:

1.
State Nuclear Power Safety Inspectorate, Order
No 22.3-130, 22/07/2016, published in TAR on 27 July 2016, ID 2016-21046
On the amendment of Order No 22.3-59 of the Head of the State Nuclear Power Safety Inspectorate of 21 July 2010 "On the approval of Nuclear Safety Requirements BSR-3.1.1-2010 'General requirements for dry-type storage facility of spent nuclear fuel'"

2.
State Nuclear Power Safety Inspectorate, Order
No 22.3-20, 31/01/2017, published in TAR on 31 January 2017, ID 2017-01776
On the amendment of Order No 22.3-59 of the Head of the State Nuclear Power Safety Inspectorate of 21 July 2010 "On the approval of Nuclear Safety Requirements BSR-3.1.1-2016 'Management of spent nuclear fuel in dry-type storage facilities'"

3.
State Nuclear Power Safety Inspectorate, Order
No 22.3-201, 31/10/2017, published in TAR on 31 October 2017, ID 2017-17210
On the amendment of Order No 22.3-59 of the Head of the State Nuclear Power Safety Inspectorate of 21 July 2010 "On the approval of Nuclear Safety Requirements BSR-3.1.1-2010 'Management of spent nuclear fuel in dry-type storage facilities'"

4.
State Nuclear Power Safety Inspectorate, Order
No 22.3-225, 24/11/2017, published in TAR on 24 November 2017, ID 2017-18617
On the amendment of Order No 22.3-59 of the Head of the State Nuclear Power Safety Inspectorate of 21 July 2010 "On the approval of Nuclear Safety Requirements BSR-3.1.1-2010 'Management of spent nuclear fuel in dry-type storage facilities'"

5.
State Nuclear Power Safety Inspectorate, Order
No 22.3-29, 31/01/2018, published in TAR on 31 January 2018, ID 2018-01489
On the amendment of Order No 22.3-59 of the Head of the State Nuclear Power Safety Inspectorate of 21 July 2010 "On the approval of Nuclear Safety Requirements BSR-3.1.1-2010 'Management of spent nuclear fuel in dry-type storage facilities'"

6.
State Nuclear Power Safety Inspectorate, Order
No 22.3-149, 28/06/2018, published in TAR on 28 June 2018, ID 2018-10721
On the amendment of Order No 22.3-59 of the Head of the State Nuclear Power Safety Inspectorate of 21 July 2010 "On the approval of Nuclear Safety Requirements BSR-3.1.1-2010 'Management of spent nuclear fuel in dry-type storage facilities'"

7.
State Nuclear Power Safety Inspectorate, Order
No 22.3-172, 25/07/2018, published in TAR on 25 July 2018, ID 2018-12396
On the amendment of Order No 22.3-59 of the Head of the State Nuclear Power Safety Inspectorate of 21 July 2010 "On the approval of Nuclear Safety Requirements BSR-3.1.1-2010 'Management of spent nuclear fuel in dry-type storage facilities'"

8.
State Nuclear Power Safety Inspectorate, Order
No 22.3-205, 30/08/2018, published in TAR on 31 August 2018, ID 2018-13689
On the amendment of Order No 22.3-59 of the Head of the State Nuclear Power Safety Inspectorate of 21 July 2010 "On the approval of Nuclear Safety Requirements BSR-3.1.1-2010 'Management of spent nuclear fuel in dry-type storage facilities'"

9.
State Nuclear Power Safety Inspectorate, Order
No 22.3-297, 04/12/2018, published in TAR on 4 December 2018, ID 2018-19719
On the amendment of Order No 22.3-59 of the Head of the State Nuclear Power Safety Inspectorate of 21 July 2010 "On the approval of Nuclear Safety Requirements BSR-3.1.1-2010 'Management of spent nuclear fuel in dry-type storage facilities'"