NATIONAL REPORT OF THE SLOVAK REPUBLIC

COMPILED ACCORDING TO THE CONVENTION ON NUCLEAR SAFETY

QUESTIONS AND ANSWERS

August 2025

SLOVAKIA

1.	Article General	Ref. In National Report 3
Question:	**It is mentioned that NPPs have been significantly upgraded and one of the major achievements is the improvement of containment tightness in existing power plants. Slovakia may like to share detail regarding improvement made for tightness of containment.**	
Answer:	The following upgrades at Mochovce NPP can be considered the most significant: 1. Implementation of measures for flooding the reactor shaft, resealing the penetration and hermetic protective doors – meeting parameters for severe accidents. 2. Replacement of the seal of reactor lid (1st stage: double seal made of 3 parts; 2nd stage: single profile seal using vulcanization without glued joints, made from a mixture certified for severe accidents). 3. Conducting the leak rate test 10 years after commissioning in a two-year cycle. 4. Replacement and modification of the design of hermetic protective doors balancing valves (hermetic protective valves). 5. Adjustment of hermetic protective doors at the containment boundary by doubling its seals, creating a double-seal configuration with an intermediate space that meets qualification parameters for severe accidents, while maintaining replaceability and enabling local tightness tests. 6. Replacement and sealing of the flange segment of the reactor shaft cover. The following upgrades at Bohunice NPP can be considered the most significant: 1. Modernization of the monitoring system for leak rate test 2. Replacement of the seal of reactor lid POWER SEAL 2105.40 (certified for severe accidents) 3. Seismic reinforcement of gas holders heating systems 4. Modification of signalling, automation, and seals of hermetic doors 5. Comprehensive repair of coatings on gas holders and barbotage trays liners 6. Operational maintenance (weld repairs, resealing of critical areas; regular weld measurements - UT, B-Scan; elimination of boric acid leaks 7. Containment repairs carried out after uncovering leaks hidden under concrete by welding or injecting epoxy resins	

2.	Article 13	Ref. In National Report 5.4.5 Role of Regulatory Authorities
Question:	**How does the regulator verify the 3S+ integration by the Licensee, including interfaces and conflicts between them, as indicated in GSR part 2?**	
Answer:	UJD SR verifies 3S+ integration by multi-layered oversight with the goal to ensure that measures in one area do not compromise another area. UJD SR inspects the Integrated Management System (ISM) as a whole (processes, responsibilities etc. including change management) and at the same time approves or assesses selected ISM documentation. In the field of inspection activities, team inspections (inspections focused on several areas simultaneously), special inspections (thematic inspections) or joint inspections (in cooperation with other state authorities) are carried out in addition to routine inspections performed by on-site inspectors. During inspections UJD SR verifies if the interfaces between 3S+ are clear and how the license holders identifies and handles potential conflicts among them. UJD SR also participates in so-called joint exercises with license holders in various areas (for example emergency preparedness, physical	

	protection or cybersecurity) which significantly assists in the verification and possible identification of possible non-compliances.

3.	**Article** 11	**Ref. In National Report** 5.2.3 Human Resources and Professional Training
Question:	**Is there a formal, documented process for the transfer of institutional knowledge between outgoing senior staff and junior staff? In what formats is this information captured or collected?**	
Answer:	Slovakia recognizes the importance of knowledge transfer between outgoing senior staff and junior staff. At UJD SR, the subsequent adaptation and mentoring process together with the competence training is implemented to enable the inspectors to pass the examination and receive the certification. The competence training program of inspectors is partially very similar to the NPP operators training program, held by the same institutions, and including the on-job training system together with the regulatory rules training, legal basis for the licensing, decision-making and performance of the nuclear oversight. Once they pass the certification, they are supported with the annual plan of education to build further skills and receive more and more experience. Skilled senior staff is encouraged to support the junior staff to build-up strong inspectorial platform and cooperation. Also, knowledge management basis is set within the regulator and under development period through the knowledge portal. PHA SR has established a structured and documented approach to the transfer of institutional knowledge in the field of radiation protection. Knowledge transfer is ensured through internal procedures, mentoring of junior staff by senior experts, on-the-job training, and the use of written guidelines, standard operating procedures, methodological instructions, and archived case documentation. Key information and experience are also captured through training materials, internal reports, and participation in exercises and inspections conducted jointly by senior and junior staff. At the level of NPP operator Slovenské elektrarne has implemented a succession process that defines the procedure for hiring a new employee to replace a departing employee. It is possible to create a temporary position to ensure that a new employee is selected and hired before a long-term employee retires. Critical positions and critical knowledge are identified. These must be considered in the employee selection and recruitment process. The subsequent training of the employee is defined by the Adaptation Process and the document ""Professional Training System"". Each job position has a training program that defines the basic and periodic training of the employee. The most important part for new employees is Theoretical Training, which is completed with a commission exam, an internship at a nuclear facility, and on-the-job training, where an inexperienced employee is taught by a designated instructor according to an approved training program. The training program defines the training objectives based on the activities performed in the given position. The training includes the study of training materials, presentations, and instructional videos, which are managed by the Personnel Training departments. At the government / regulatory level the hiring process is quite rigid due to the requirements on the civil servant's recruitment process as set by the Law on the Civil Service and set in detail by the special regulation on the hiring process.	

4.	Article 6	Ref. In National Report 3.7
Question:	**Which waste streams are treated using bituminization, cementation, and incineration process?**	
Answer:	Generally, bituminisation is dedicated for treatment of concentrates and sorbents from NPP operation. Currently the bituminisation technology is not used by JAVYS, a.s. due to reduced production of liquid concentrates and sorbents from operating WWER Units. Cementation is used for liquid RAW treatment and solidification of solid RAW and drums in the container for disposal. Incineration process is used for liquid RAW (concentrates, sludges and sorbents) and solid combustible RAW.	

5.	Article 15	Ref. In National Report 5.6.2
Question:	**How often reports from NI with the results of personal monitoring are requested to be sent to the PHA SR?**	
Answer:	In accordance with Act No. 87/2018 Coll. on Radiation Protection, the evaluation of personal dosimeters for Category A workers shall be performed by the dosimetry service at monthly intervals. The competent radiation protection authority may require personal monitoring by the dosimetry service for Category B workers as well. The dosimetry service shall provide the employer with the results of monitoring and the assessed individual doses of its employees for each monitoring period no later than 30 days after the end of the period. Annual cumulative doses of workers shall be provided to the employer no later than the end of March of the following calendar year. In the event of exceptional or accidental exposure, the dosimetry service shall promptly evaluate the personal dosimeter submitted by the affected worker. Cumulative results of personal dose measurements for Category A and Category B workers shall be submitted by the dosimetry service to the PHA SR for the preceding calendar year no later than the end of March of the following year.	

6.	Article 15	Ref. In National Report 5.6.2
Question:	**It is stablished that for the purpose of balancing and assessing the impact of operation of a NI on the dose load, PHA SR has set values for activity of radionuclides discharged into the atmosphere and to the hydrosphere. Could you summarize the methodology applies for derivation of suchvalues?**	
Answer:	The dose constraint for a representative person for the design, construction, and operation of a nuclear installation for a single operator is 0.25 mSv per calendar year. For discharges into the atmosphere and into surface waters, the dose constraint for a representative person is set separately for individual discharges as follows: a) an effective dose of 0.2 mSv per calendar year for discharges into the atmosphere, and	

	b) an effective dose of 0.05 mSv per calendar year for discharges into surface waters. If there are several nuclear installations in one site or region that affect the dose to a representative person, this value applies to the total exposure from all nuclear installations at the site or in the region (Act No. 87/2018 Coll. on Radiation Protection). The determination of a representative person and the assessment of their exposure must be carried out on the basis of information about the source of ionizing radiation, including the expected radionuclides released into the environment from the workplace and their activities per calendar year. The authorized radiological limit that restricts the discharge of radioactive substances during normal operation is defined as the effective dose to a reference member of the public living in the sector where the highest exposure is caused by radioactive substances released from the NPP. The authorized radiological limit for the effective dose to a reference member of the public is selected to transparently ensure and demonstrate compliance with the established dose constraint for public exposure caused by all nuclear installations operated at the site. Primary control of discharged radioactive substances is ensured by measuring the activity of airborne effluents in ventilation stacks and in wastewater. Therefore, in addition to the authorized radiological limit for public exposure, annual reference levels are also established for directly measurable quantities of discharged substances. The annual reference levels are set for the activity discharged per calendar year in a sufficiently conservative manner to ensure that, by complying with them, the authorized radiological limit is not exceeded.

7.	**Article** 15	**Ref. In National Report** 5.6.3
Question:	**Regarding Monitoring of Personal Doses: Is there any dose restriction value for nuclear power plants in Slovakia?** **Was any collective dose value established to achieve as an optimization target?**	
Answer:	In general, in accordance with Act No. 87/2018 Coll. on Radiation Protection, dose limits for occupational exposure to sources of ionizing radiation, as specified in Section 15, shall not be exceeded. Annual dose limits for occupational exposure are as follows: Effective dose: 20 mSv Equivalent dose to the lens of the eye: 20 mSv Equivalent dose to the skin: 500 mSv (applied to the average dose over any 1 cm^2 of skin, regardless of the total irradiated skin area) Equivalent dose to the extremities: 500 mSv The effective dose limit applies to the sum of all annual effective doses from external exposure and the committed annual effective doses from intake of radioactive substances from all sources of ionizing radiation to which a worker is exposed during occupational activities, whether under a single employer or concurrently under multiple employers. The equivalent dose limit applies to the sum of all annual equivalent doses from external exposure and the committed annual equivalent doses from intake of radioactive substances from all sources of ionizing radiation to which a worker is exposed during occupational activities, whether under a single employer or concurrently under multiple employers.	

	These dose limits also apply to workplaces with elevated natural background radiation. For Slovak NPPs, internal limit ((individual) effective dose) during normal operation (for planned exposures): working with radiation work permit 1mSv, daily limit 1 mSv/calendar day, annual limit 10mSv. Optimisation is largely determined by operational experience. On the basis of information exchange (benchmarking performance) from WANO (Paris Centre) 3-Yr CRE (Man-Sieverts) three-year rolling average annual doses are Slovak NPP units in the best quartile.

8.	**Article** 17.1	**Ref. In National Report** pages 137-140
Question:	**Was possible climate change taken into account when preparing new meteorological studies for both power plants, especially towards the generally expected increase in temperatures and an increase in the occurrence of extreme meteorological phenomena?**	
Answer:	All meteorological hazards relevant to the NPP sites are quantified and hazard curves have been developed. Probabilistic methods, but also deterministic methods are used for quantification. The Slovak hydrometeorological institute processes relevant studies. The studies are regularly updated taking into account changes in the assessment methodology, new meteorological data, as well as observations related to climate change. Studies dealing with climate change are usually prepared by universities and research organizations. They assess the impact of climate change on meteorological conditions. The greatest potential threats are shown to be an increase in average and maximum daily air temperature, long-term drought and reduced water flow in river beds, tornadoes, and an increase in the intensity of extreme rain and wind. The license holder monitors potential climate change and takes design and operational measures to limit the negative impact of climate change on the safety of the NPP. Particularly, resistance of building structures against tornado has been increased and operational measures are in place in the event of low river flow.	

9.	**Article** 16	**Ref. In National Report** pages 126-128
Question:	**Regarding the early warning and notification system's reliability and redundancy in case of an emergency resulting in a loss of one or several communication elements at once (e.g. during a major, large-scale blackout, floods, etc.), what are the capabilities and how are the contingency systems utilised to assure the flow of information from on-site to the ÚJD and by extension to the emergency response parties (i.e. the usage of the mentioned on-site satellite phones in regard to other users within the emergency response system, the Ministry of the Interior hotline, etc.)?**	
Answer:	At the central State administration level the reliability of the early warning system is ensured as follows: electronic sirens are functional for at least 72 hours after the primary power source fails; electronic sirens can be triggered from 3 independent levels - national, regional and local; remote control of sirens is ensured via 2 radio channels via independent infrastructures. Communication of rescue units of the integrated rescue system is ensured within the dedicated radio communication network of the Ministry of Interior.	

	At the level of regulatory body, UJD SR tries continuously improve its equipment and procedures, utilizing findings from previous/historical emergency exercises to strengthen the coordination and communication channels. Recognizing the risks associated with total infrastructure failure, the authority is implemented and using a multi-layered communication strategy: a) to ensure autonomy from terrestrial networks, the UJD SR Emergency Response Centre (ERC) has been equipped with satellite connectivity. This establishes a direct with the license holder's emergency control centres, guaranteeing operational continuity even during large-scale blackouts. b) as a somehow fail-safe redundancy for international notification obligations (IAEA and European Commission), legacy systems such as secure Fax communication are actively maintained to ensure diverse transmission paths. c) looking ahead, the strategic goal is to further diversify communication assets by integrating into the Ministry of Interior's secure radio network. The vision is to encompass not only the UJD SR but also the license holders' emergency centres and their headquarters, creating a unified, independent communication system for critical scenarios. At the level of NPP operator, the Bohunice NPP radio network, fixed telephone and mobile networks, and fax machines are used to ensure internal and external communication. In addition to the main relay radio station, the emergency radio network also has a backup mobile relay radio station with batteries that can last for at least 4 hours. During a prolonged power outage, the relay radio stations for communication with the Emergency Response Organization will remain functional both within and outside the site. The plant's telephone exchange has backup batteries and ensures the functionality of telephone lines for 10 hours after a power failure. Satellite phones are another independent means of communication. Satellite phones are located in the Main control rooms (category 1 backup power supply), at the Shift supervisor, in the Emergency Response Centre and Back-up Emergency Response Centre (UPS and DG). Portable satellite phones are also located at Shift supervisor and ERC. Another communication and equalization system is the autonomous notification and warning system, which consists of two separate, independent systems – the Warning System and the Notification System. The basic technical means of the NPP notification system, designed to notify persons included in the response organization and representatives of state and local government in the Emergency planning zone, is a paging radio network with terminal equipment – a pager, independent of the telephone network. Pagers only allow one-way communication, and the sender of the message has no feedback that the message has been delivered. Another technical means of the notification system is an automatic telephone notification device, which provides notification to mobile and landline telephones via voice messages and SMS. The notification server provides the sender of the message with feedback on the delivery of the relevant information. Employees are notified of an emergency via the plant radio, which is integrated into the internal autonomous warning system. If necessary, the sirens of the internal warning system can be used to inform employees of imminent danger. An autonomous nuclear facility warning system with a backup power supply for sirens for at least 72 hours is used to warn employees and residents in the nuclear facility danger zone in the event of an emergency. The sirens can be used to transmit a warning signal and, via a local control module, also allow

	announcements to be made via a microphone to inform residents of imminent danger. For external communication, a direct MB line with a permanent service provided by the Ministry of the Interior has also been set up to communicate with the Main control room and ERC. The plant firefighters unit is also connected to the operations centre of firefighters corps of the relevant region via a direct UB line and radio connection/radio station.

10.	**Article** 10	**Ref. In National Report** 72
Question:	**The report refers to the promotion of safety culture within the operating organisations and the regulatory body. Could Slovakia explain how it demonstrates in practice that nuclear safety is given priority over production goals and economic considerations, and how ÚJD SR assesses and monitors the safety culture of the licensee over time?**	
Answer:	Slovakia demonstrates the priority of nuclear safety through its legislative framework, practical mechanisms within operating organizations (mainly Slovenské elektrárne, a.s.) and inspection and regulatory activities of the UJD SR: Operator: • Operational Stoppage: Operating procedures clearly mandate that if there is any doubt regarding the safe condition of the facility, the unit must be shut down or power reduced, regardless of electricity production targets. • Management System: The licensee's Integrated Management System (IMS) includes a Safety Policy that explicitly declares the supremacy of safety over all other goals. • Independent Oversight: Within the NPPs, there are nuclear safety departments that are organizationally separate from production departments and report directly to top management. The Nuclear facility operation license holder regularly accesses the Safety Culture in the organization (independent and anonymous survey) and also periodically organizes Safety Culture seminars for employees and supplier organizations, where licensee explains and in specific cases presents that Nuclear Safety is given priority over production goals and economic considerations. The principles of the Safety Culture are reflected in the license holder's individual guidelines, procedures, manuals, etc. UJD SR: 1. Inspection Activities: During inspections, inspectors observe personnel behaviour, adherence to procedures. Specific inspections are also conducted targeting safety culture and the human factor. 2. Safety Performance Indicators: UJD SR monitors a set of indicators, including the number of operational events caused by human error or the quality and timeliness of corrective actions. 3. Analysis of Operational Events: Every event is analysed for root causes. If it is determined that production pressure or communication failure was a factor, UJD SR mandates corrective measures. 4. Regular Self-assessments and International Missions: UJD SR requires the license holder to perform periodic safety culture self-assessments (typically every 3 years) and reviews the findings. Furthermore, IAEA missions (such as OSART) are utilized to provide an independent perspective.	

	Nuclear Safety Inspectors of the UJD SR assess the Safety Culture in the conducted inspections directly focused on the Safety Culture of the Nuclear facility operation license holder and also inspections, which were not primarily focused only on the Safety Culture of the licensee. The results of the assessment in inspections focused on the Safety Culture are presented to the licensee during assessment and are compared with the results of the Safety Culture assessment found in previous periods, if they were accessed. During inspections, which were not primarily focused only on the Safety Culture, partial assessments of the Safety Culture are recorded in the inspection results, in a record or protocol. The Nuclear facility operation license holder is thus immediately informed which area of the Safety Culture was assessed during the inspection, with what result.

11.	**Article** 11.2	**Ref. In National Report** 76
Question:	**The report mentions challenges related to human resources and the ageing of experienced staff in both the regulatory body and the operating organisations. Could Slovakia describe its long-term strategy for competence management and succession planning, including knowledge transfer, training programmes and recruitment initiatives for new experts in nuclear safety and radiation protection?**	
Answer:	On January 28, 2026, the Slovak government approved an Action Plan to Support Education, Research, and Human Resource Development in the Nuclear Sector. The approved Action Plan to Support Education and Research in the Nuclear Sector contains 28 specific measures. They concern higher education, secondary education, lifelong learning, and other forms of training and education. It responds to fundamental changes in the European and global context, where nuclear technologies are once again becoming the focus of attention as part of energy security, decarbonization, and technological development. The action plan does not exclusively concern of nuclear energy. It covers the entire nuclear ecosystem – from energy to healthcare, radiopharmacy and industrial applications to research, regulation and nuclear safety. At the same time, it responds to serious challenges facing the sector, such as generational replacement of experts, aging personnel, low interest among young people in technical fields, and the brain drain abroad. For PHA SR, its long-term strategy focuses on systematic competence management through succession planning, structured knowledge transfer from senior experts to junior staff, and continuous professional training. This is complemented by targeted recruitment of new experts and close cooperation with universities and national training institutions to ensure the long-term sustainability of expertise in radiation protection. UJD SR follows its Human Resources Plan based on the competence maps needed for the relevant positions. Such plan is annually reconsidered prior to draft State budget is negotiated with the Ministry of Finance to gain financial, material and human resources needed for the next years, when new projects or safety aspects have occurred, or, the new areas of inspections or topic became highly challenging (good planning and inspection analysis, but also benchmarking with other national regulators are basis for regular review and re-evaluation of human resources needed).	

12.	Article 17	Ref. In National Report 137
Question:	**The report discusses siting aspects for the Bohunice and Mochovce sites, including consideration of external natural and human-induced hazards. Could Slovakia clarify how site-related hazards have been re-evaluated in light of post-Fukushima stress tests, particularly with respect to seismic events, flooding, and loss of off-site power, and how these re-evaluations have been reflected in plant design or operating limits?**	
Answer:	After Fukushima accident, the re-evaluation of both sites was performed in Stress Tests, including the siting aspects. Based on the National Report on Stress Tests for NPPs in Slovakia (December, 2011), the "Post Fukushima National Action Plan of the Slovak Republic" was prepared. The hazards were re-evaluated accordingly, based on up-to-date methodologies and latest input data. Moreover, the re-evaluation of the external natural and human induced hazards was carried out in the PSA analyses. Based on the re-evaluation, the reinforcement or mitigation actions were conducted to sustained events with frequency up to 10-4 per year. E. g., the following actions and measures with regard to the external hazards were taken under the post-Fukushima re-evaluations: The seismic reinforcement project – technology in the emergency response centre (e.g. reinforcement of air-condition, electrical cabinets, etc.) – has been completed for Bohunice and Mochovce NPPs, and included in the design basis for Mochovce 3 and 4; The multi-year project of seismic reinforcement of NPP Mochovce 1 and 2 to the new PGA value of 0.15 g had been completed according to the schedule by the end of 2022. The reinforcement included, e.g., following SSCs: Fire station building, Emergency feed water system, Emergency Response Centre, Air duck to venting stack, Venting stack, Diesel Generator Station, Diesel oil system, Central pumping station of ESW and firefighting, Forced draft cooling towers of ESW system, etc., Reactor building of Mochovce 1 and 2, Electrical switchboards. The seismic margins of selected systems, structures and components (SSC) were analysed in order to evaluate the resistance of selected SSC at a seismic event with intensity corresponding to the probability of occurrence less than once per 10,000 years. Various scenarios for putting the NPP units into safe condition after a seismic event were analysed, and the updated scenarios were incorporated into Operating Instructions for Emergency Situations. Measures for protection against penetration of water into buildings as well as protection against floods for identified rooms for Bohunice and Mochovce 1 and 2 NPPs were implemented (and for MO34 included in the design basis), and updated scenarios were incorporated into Operating Instructions for Emergency Situations.	

13.	Article 14	Ref. In National Report p. 36
Question:	**Do you consider implementing some of the safety improvements of MO 3, 4 on EBO V2 and EMO 1,2 during the third PSR?**	
Answer:	Safety improvements have been implemented as result of previous PSRs and also stress tests conducted after Fukushima accident. E.g., NPPs Bohunice V2 and Mochovce Units 1 and 2 have implemented the same SAM-related improvements as NPP Mochovce Units 3 and 4. The SAM project was implemented at NPP Bohunice V2 in 2013 and at NPP Mochovce 1 and 2 in 2015.	

14.	Article 8	Ref. In National Report p. 19
Comment:	**CHALLENGE: Consider increasing the human and financial ressources of the UJD SR in the coming years to cope with the evolution of the slovakian nuclear capacities : construction, commissionning and oversight of new NPPs (MO 3,4, new NPP in Bohunice), lifetime extension of EBO V2.**	
Answer:	The UJD SR fully recognizes the increasing demands associated with the development of nuclear energy in Slovakia. Given the strategic importance of projects such as the completion of Mochovce Unit 4, the planned construction of a new nuclear source in Jaslovské Bohunice, and the long-term operation (LTO) processes for NPP Bohunice V2, strengthening the Authority's capacities is a top priority. It is necessary to guarantee that the expansion of Slovakia's nuclear capacities is conducted in compliance with the highest standards of nuclear safety and public protection. Planning for development of human resources of UJD SR is a process that is performed annually and is connected with planning of budget. This process provides for adaptation to actual needs of UJD SR (e. g. inflation rates). Also, based on the finalisation status of the construction and commissioning of Mochovce 3 and 4, UJD SR expects to have human resources available in the near future who have experience of overseeing this project. Based on the relatively recent experience with increasing human resources in connection with finalization of construction of Mochovce 3 and 4 NPP and on stipulation of Atomic Act that provides financing for regulatory activities during construction of nuclear installation (Section 34a (5) of Atomic Act No. 541/2004 Coll.) UJD SR currently does not consider increasing human and financial resources in the coming years as a challenge.	

15.	Article General	Ref. In National Report p. 64
Comment:	**AREA OF GOOD PERFORMANCE: Many international missions were hosted in Slovakia: IRRS mission in 2022 (with follow-up IRRS planned in 2026), ARTEMIS and OSART missions in 2023, SALTO mission in 2024.**	
Answer:	Thank you for the proposal of the Area of Good Performance.	

16.	Article 15	Ref. In National Report 5.6.2, Radioactivity Monitoring by the License Holder – Gaseous and Liquid Discharges, p. 109
Question:	**What explains the significant difference in the maximum effective doses per representative individual from emissions into the atmosphere (0.2 mSv/year) and discharges into surface water (0.05 mSv/year)? Is the contribution of tritium to the radiation dose from liquid discharges taken into account? What are the results of emissions and discharge monitoring to date?**	
Answer:	The difference between dose limits (0.2 mSv/year for air and 0.05 mSv/year for surface water) results from the regulatory approach to distributing the dose limit among individual exposure pathways so that the total dose limit for the	

	population (0.25 mSv/year per facility) is complied with. The atmospheric pathway is generally considered to be dominant in terms of potential exposure routes (inhalation, deposition on soil, food chain), which is why it is allocated a higher proportion of the dose quota. The aquatic pathway generally has a smaller and more controllable impact, which is why it is allocated a lower value. This is therefore a conservative administrative allocation of the dose budget, not a claim that water is "safer," but that its contribution is typically lower and more predictable. The contribution of tritium from liquid discharges is taken into account as standard. Tritium (H-3) is often the main component of liquid discharges in terms of activity, but its dose coefficient is low. Assessments use a model of dispersion in the hydrosphere, dilution in the receiving environment, drinking water and food consumption scenarios, and relevant dose conversion factors. Although its activity is higher, the resulting dose to a representative person is usually small. This confirms that the system of monitoring, control, and optimization (ALARA) is effective. The basic authorisation limit for the limitation of radiation exposure of inhabitants in the surroundings of the nuclear facility, caused by radioactive substances discharged into the air and surface water, released from the administrative control, through the operation of the NPPs is even lower. For NPP Mochovce the effective dose of a representative person is 0.075 mSv per calendar year: Effective dose 0.070 mSv per calendar year for releases into air, Effective dose 0.005 mSv per calendar year for releases into surface water. The activity of radionuclides discharged as waste water into the surface water over calendar year does not exceed the annual reference values for tritium. Committed effective dose coefficients for tritium for the ingestion is 1.8E-11 Sv/Bq. According to the European Commission Recommendation no. 2004/2/Euratom NPP operator is sending compilation sheet for reporting airborne and liquid discharges from NPPs.

17.	**Article** 15	**Ref. In National Report** 5.6.3 Personal Monitoring and Personal Doses of Workers and External Workers in Nuclear Installations, p. 112
Question:	**Is the intake of pure alpha- and beta-emitting radionuclides into the human body monitored? If so, by what methods?**	
Answer:	Concerning general public, the assessment of the effective dose to the population arising from alpha- and beta-emitting radionuclides is performed through systematic monitoring of selected components of the food chain and drinking water. The activity concentrations, expressed on a volumetric or mass basis, of plutonium (Pu), americium (Am) and uranium (U) isotopes are determined. Among beta-emitting radionuclides, strontium-90 (Sr-90) is routinely monitored. Within the framework of ambient air monitoring, the activity concentration of plutonium in air is also assessed based on the analysis of aerosol filter samples. The determination of alpha-emitting radionuclides is carried out using radiochemical separation procedures based on extraction chromatography, followed by alpha spectrometric measurement. Strontium-90 is determined using a liquid–liquid extraction method with tributyl phosphate (TBP), with subsequent measurement by proportional counting.	

	Concerning NPP operators, a program for controlling alpha/beta risks has been developed, describing the method for calculating the activity of alpha/beta radionuclides. The activity of alpha/beta radionuclides is determined through correlation ratios to easily and reliably measurable gamma radionuclides (Cs-137). A gamma-spectrometrically measurable isotope (Cs-137) is used in a whole-body counter to convert the activity of difficult-to-detect alpha/beta radionuclides. Collection of biological samples of personnel urine (in vitro) in hot part of changing room to estimate committed effective dose from 3H (3H2O) in case of exceeding DCA (Derived air concentration) for 3H (pure beta). The results of gamma-spectrometric analyses and radiochemical analyses are used to estimate the correlation ratios. Dosimetric data provided of the Occupational Intakes of Radionuclides OIR ICRP PUBLICATION 134 series include tables of committed effective dose per intake (Sv per Bq intake) for inhalation and ingestion, tables of committed effective per content (Sv per Bq measurement) for inhalation, and graphs of retention and excretion data per Bq intake for inhalation. These data are provided for all absorption types and for the most common isotope(s) of each element. The electronic annex that accompanies the OIR series of reports contains a comprehensive set of committed effective and equivalent dose coefficients, committed effective dose per content functions, and reference bioassay functions.

18.	**Article** 14	**Ref. In National Report** 5.5. Safety Assessment and Verification, p. 98
Question:	**What measures are being taken to ensure long-term safety and monitoring of storage facilities after their closure, particularly the National Repository for Radioactive Waste (RÚ RAO) in Mochovce?**	
Answer:	In connection with the optimal proposal for monitoring and ensuring the long-term safety of the LLW repository (at the National Radioactive Waste Repository), a Repository covering model was designed and built in 1999-2005. This was monitored until 2024. The results of long-term monitoring are presented in the document "Summary evaluation report on monitoring parameters and quantities of the National Radioactive Waste Repository covering model for the entire period of its operation" and will be used for the final proposal of repository monitoring after its closure. After the closure of the repository, institutional control will follow, which includes activities carried out after the final cover and closure. Institutional control consists of active control, which is actually the continuation of monitoring of environmental components, in particular groundwater and drainage waters, or the performance of maintenance and passive control, which is a set of measures that prevent entry and unauthorized activities at the repository site, e.g. guarding, fencing, warning signs.	

19.	Article 17	Ref. In National Report 2 Concept of the Use of Nuclear Resources in Slovakia. Forecast of the development of available electricity production in Slovakia, p. 17 6 Safety of Nuclear Installations in Slovakia, 6.1.2, p. 137
Question:	**The Slovak Republic has approved the construction of new facilities (power unit/units) in Jaslovské Bohunice with an expected installed capacity of up to 1,200 MW (Resolution No. 279/2024 of May 2024). The Slovak Republic is a member of WENRA. Therefore, the new facilities being constructed must be resistant to the impact of a heavy commercial aircraft.** **1. The site's seismic activity is determined to be 0.344 g. Will the Slovak Republic take into account the European Utility Requirements (EUR) for seismic reserves equal to 50% of the site's maximum design earthquake (MDE)?** **2. Will the PSA consider a combination of external natural and man-made events, including the combination of MDE and the impact of a heavy commercial aircraft?**	
Answer:	The design of the new nuclear source will have to comply with strict international safety standards, including IAEA requirements and WENRA safety reference levels and safety goals. UJD SR has only issued a decision on the sitting of the new nuclear source in Bohunice site. The design of the new nuclear source has not yet been submitted to the UJD SR, and has therefore not been assessed by the UJD SR.	

20.	Article 6	Ref. In National Report page 21 table 1
Question:	**The electrical power of the operated units at Jaslovské Bohunice site (EBO V2) is 505 MW per unit as well as for the units 1 and 2 at Mochovce site (EMO 1,2). The electrical power of the new unit 3 of Mochovce NPP (same reactor type) is limited to 471 MW. Could you please give some explanations on this difference and possible plans for a power increase for the new unit?**	
Answer:	Mochovce Unit 3, similarly to the other WWER 440 units at the Mochovce and Bohunice sites, was initially commissioned at 100% of its nominal thermal power (Nnom), which corresponds to approximately 471 MWe with both turbine sets in operation. For Mochovce Units 1 and 2 and Bohunice Units 3 and 4, the nominal power was increased to 107.1% Nnom following comprehensive analyses, implementation of the required technical modifications, and subsequent regulatory approval. As Mochovce Units 3 and 4 represent a newer generation of units, these technical improvements were incorporated directly into design basis. Slovenské elektrárne, a.s., is currently undertaking the necessary activities and expert consultations aimed at the stepwise increase of the output of Units 3 and 4, first to 107.1% and later to maximal 112% Nnom. Implementation of these upgrades is planned for the period 2030–2032.	

21.	Article 3	Ref. In National Report page 93
Question:	**In 2020, it became known that components whose material composition did not meet the technical specifications were installed in Units 3 and 4 of the Mochovce Nuclear Power Plant. The cause was stated to be quality assurance issues with suppliers. Could you please give some explanations on which improvements were subsequently implemented?**	
Answer:	"The incoming checks of all deliveries of metallurgical semi-finished products and steel products to nuclear units have been expanded to include measurements of their chemical composition using X-ray spectral analysers. They must correspond to the declared composition in the submitted inspection certificates. In case of non-compliance, such deliveries of materials are rejected, which ensures the use and installation of only deliveries with verified properties declared in the delivered accompanying technical documentation."	

22.	Article 6	Ref. In National Report page 21 table 1
Question:	**Could you please give some explanations on what is the content and the requirements of the trial operation of unit 3 of Mochovce, and how long it will take?**	
Answer:	Content and requirements of the trial operation is set up in special procedure issued by licensee and approved by UJD SR. Trial operation is the stage of nuclear facility operation that begins with the issuance of a valid license for the operation of a nuclear facility within the scope of trial operation and valid consent to trial operation, and ends with the entry into force of the license for operation within the scope of permanent operation of the nuclear facility. The trial operation stage is divided into an "evaluation period" and an "assessment period". Evaluation period: This is the period of collecting data necessary for evaluating trial operation in accordance with this program, beginning after 144 hours of proven operation and covering the period from the first fuel campaign to the end of the first GO. Assessment period: This is the period for assessing the data collected during the evaluation period. It begins at the end of the evaluation period and ends with the completion of trial operation. The final report is submitted to authority, which has to approve this report. Among evaluated parameters are as follows for example: safety systems, industrial safety, physical protection, reported events, radiation protection and etc. The evaluated criteria also covered the evaluation of the outage and the report about fuel safety criteria. The content of the final report about evaluation of the trial operation is defined in the Decree No. 58/2006 Coll. on Documentation Section 24 (3).	

23.	Article 8	Ref. In National Report page 54, first paragraph, brackets in last sentence)
Question:	**Is there some technical support of the Slovak Regulatory Body ÚJD by external experts (e.g. TSO, scientific Institutes or Universities)?**	
Answer:	UJD SR relies on extensive technical support from external experts, including Technical Support Organizations (TSOs), scientific institutes, and universities. This practice is explicitly anchored in the Atomic Act (Section 4(4)), which allows the UJD SR to use external scientific and technical resources and expertise to support its regulatory functions. The technical support of UJD by external experts is arranged as needed, through the contracts. The expertise of Slovak and/or foreign TSOs, Universities or Scientific Institutes is used on case-by-case basis. The main criteria for selection of a specific organization include the experience and skills of a potential contractor in the specific field/topic and exclusion of potential conflict of interests. Depending on the financial scope/size of the individual contracts, relevant procurement methods are applied, as requested by the Slovak and European rules/law.	

24.	Article 16	Ref. In National Report Page 115-132
Question:	**Is the present system of radiological protection in connection with radiological and nuclear emergencies appropriate for all situations that may arise both in peacetime and during a heightened state of alert, including armed conflict? If not, is there any changes that need to be considered?**	
Answer:	PHA SR considers the current system of radiological protection to be robust and largely adequate for most foreseeable radiological and nuclear emergency situations. Nevertheless, in light of the changing security environment and lessons learned from international experience, targeted updates and continuous improvement are necessary to ensure that the system remains effective, resilient, and responsive under all conditions, including situations of armed conflict.	

25.	Article 16	Ref. In National Report Page 115-132
Question:	**What are the major EPR challenges for the Slovak system? Is it competence and staffing, communication pathways or technical support, if any of these?**	
Answer:	While Slovakia maintains a robust and legally compliant EPR framework, long-term systemic resilience depends on addressing several critical strategic areas. Primarily, the sustainability of the system deals with an aging demographic of specialists, necessitating proactive recruitment and knowledge transfer to maintain human capital. Furthermore, optimizing inter-agency synergy is essential to ensure rapid communication and a unified public message across health, security, and regulatory sectors during a crisis.	

26.	Article 6	Ref. In National Report p. 21
Question:	**Can you give a brief explanation on what was the cause of the containment tightness problem (e.g., design issues, ageing…)?**	
Answer:	There are two reasons why it was necessary to improve the containment tightness of the operating units. The main reason is that at the beginning of the operating life of the units, the requirements for the containment tightness parameters, as well as the quality of measurement technologies, were lower compared to today. At the same time, the needs to improve the containment tightness was caused by the ageing and degradation of materials.	

27.	Article 6	Ref. In National Report p. 33
Question:	**"… the ÚJD SR ordered an increase in the seismic capacity of NPP EMO 1,2…". It is not clear whether only new reassessment was completed or any reinforcements/modifications to the buildings and equipment were implemented by the end of 2022. If the latter is true, what were the implemented modifications?**	
Answer:	The reinforcement of the NPP Mochovce 1 and 2 to a new higher level of seismic hazard resistance (0.15 g) was successfully completed by the end of December 2022, i.e., by the deadline requested in the UJD SR Decision. It was not just a new reassessment and verification of seismic resistance. If these showed that the seismic resistance does not comply with the required value, suitable reinforcement measures were proposed, designed and implemented, and their implementation was verified. The reinforcement included, e.g., following SSCs: Fire station building, Emergency feed water system, Emergency Response Centre, Air duck to venting stack, Venting stack, Diesel Generator Station, Diesel oil system, Central pumping station of Essential Safety Water (ESW) and firefighting, Forced draft cooling towers of ESW system, etc., Reactor building of Mochovce 1 and 2 NPP, Electrical switchboards. The progress of the reinforcement work and efforts had been continuously monitored and inspected by the UJD SR and documented in the outputs from the set of inspections. The last of the inspections (completed in May 2024) verified and confirmed that the conditions of the UJD SR Decision had been met.	

28.	Article 6	Ref. In National Report pp. 34-35
Question:	**Table 5: it is not clear what the mentioned safety improvements of new/future Mochovce Units 3 and 4 refer to, i.e. are they the improvements over older Units 1 and 2, or just improvements of the original design of Units 3 and 4?**	
Answer:	Both NPPs have the same basic design (they use the same reactor type etc.). At the Mochovce 1 and 2 (EMO 12) and at the Mochovce 3 and 4 (MO34), and also at the Bohunice 3 and 4 (EBO V2) practically the same safety improvements have been implemented with the difference that in case of the EMO 12 and EBO V2 implementation was performed after the start of operation and in case of the MO34 during construction.	

29.	Article 6	Ref. In National Report p. 37
Question:	**What is meant here by "The EIA Report must be accepted by ÚJD SR"? Is ÚJD SR in charge (or responsible) by law to actually approve the EIA report? Or ÚJD SR only gives its opinion/acceptance of the EIA report, which is then approved by some other governmental authority?**	
Answer:	EIA Report states conditions which had to be fulfilled by Slovenske elektrarne (SE, a.s.). They were continually submitting the written report providing information about the fulfilment of these conditions. The fulfilment of some of these conditions had to be approved by the Transport Office, Ministry of Transport or the Labour Inspectorate and Public Health Authority. If UJD SR was not satisfied with how they had dealt with these conditions it would not be accepted and SE, a.s. would have to supplement the fulfilment of this condition in a way specified by UJD SR.	

30.	Article 12	Ref. In National Report pp. 93-95
Question:	**Do members of ÚJD SR also assess the safety culture of the licensee's staff from observations during ordinary visits/inspections/meetings at the NI that are not specifically aimed at safety culture issues? If yes, what is the procedure to deal with such observations (e.g., are they reviewed and processed by the regulatory body and then communicated with the licensee)?**	
Answer:	UJD SR assesses the safety culture of licensees during inspections that focus directly on safety culture, as well as during inspections that focus on other areas. Until the end of 2025, the results of the observed safety culture were evaluated according to the 'Komfort' system. During inspections that were not primarily focused on safety culture, findings relating to safety culture were recorded in the inspection results. This meant that the licensee knew which area of the safety culture had been assessed during the inspection and what the result was. From 1 January 2026, UJD SR began using the internationally recognised methodology for assessing safety culture, known as the '10 Traits'. The results of the assessment according to this methodology will be recorded in the electronic application for assessing the safety culture, and these results will subsequently be presented to the licence holder at annual intervals.	

31.	Article 14	Ref. In National Report p. 103
Question:	**How many safety indicators are there in the mentioned operational and safety areas? Do the licensees of NIs and use the same set of safety indicators for their own applications as ÚJD SR? If so, do they use the same warning and/or alarm levels of a particular indicator as ÚJD SR? (similar goes also for Chapter 5.5.4 on pp. 105-106.)**	
Answer:	UJD SR uses 13 safety indicators in the mentioned operational and safety areas. The licensees of NIs use enlarged set of safety indicators; the 13 safety indicators used by UJD SR are all included in the set of safety indicators used by the licensees of NIs.	

	UJD SR and the licensees of Nuclear Installations use the same warning and/or alarm levels for the 13 common safety indicators. In addition to values of safety indicators, UJD SR also monitors trends of these indicators. Slovenske elektrarne (SE, a.s.), has introduced 60 specific indicators that are included in the evaluation tree. Some of them are indicators for individual units, others are for nuclear facilities as a whole. The limits of these indicators are set by SE, a.s. for the relevant period according to the relevant rules. The UJD SR is informed about the related procedures, indicators, and limits.

32.	**Article** 14	**Ref. In National Report** p. 105
Question:	**It is written that the inspection process and documentation review process are periodically subject to internal and external audits. What organizations perform the external audits? In other words: are here meant only international missions (e.g., IAEA IRRS), or are TSOs or other organizations on the national level (i.e. outside ÚJD SR) also involved in auditing?**	
Answer:	Quality Management System of the UJD SR is subject to periodical audits. Mentioned processes are part of the system and are audited by certified contracted organization.	

33.	**Article** 17	**Ref. In National Report** p. 139
Question:	**It is stated: "Providing for the update of the relevant chapters of the Safety Report in order to take into account new meteorological data, other measures implemented to enhance safety and the most advanced assessment methodology, is currently in the stage of design preparation." Is this new meteorological data referring to the impact of climate changes? If yes, how would its influence on magnitude of the events with, e.g., 10.000 years return period be assessed?**	
Answer:	The latest changes made to the NPP design and operation due to extreme weather conditions are caused by: a) changes of the methodology for assessing the resilience of classified SSCs to weather extremes (wind); b) changes in the weather characteristics of the site (e.g. inclusion of a possibility of tornado). The assessment of the threat to the NPP site caused by weather extremes is carried out using probabilistic methods, but also deterministic methods. Climate change has so far had an insignificant effect on changes in the characteristics of weather extremes of sites.	

34.	**Article** 6	**Ref. In National Report** 3.4 Page 34
Question:	**It is mentioned that in Mochovce Units 3 and 4, one safety upgrade was "equipping Emergency Control Centre with workstations for full control and**	

	monitoring of NPP MO 3, 4 Units in case of unavailability of Main Control Room and Emergency Control Room". **Could Slovakia clarify what is meant by "full control" with respect to Emergency Control Centre of NPP MO 3, 4 Units?**
Answer:	"The purpose of the Emergency Response Centre (ERC) systems is to provide the members of Emergency Response organization with information regarding NPP condition and radiation situation in its surrounding, communication means and prognostic tools for fulfilment of measures for mitigation and limitation of event and accident. ERC systems provide the possibility of simulation for purposes of personnel education and training. After Stress Tests, it has been identified the need to extend the scope of ERC with Plant Control means that could be needed in case of Severe Accidents with (mainly postulated) radiation level in MCR/ECR dangerous for personal but not for equipment. If no power division has been restored (HVAC is still not functioning) in MCR, the MCR crew has the possibility to switch to the ERC and continue to perform the minimum required set of functions, i.e.: - heat removal during severe accident - control of electric systems of common diesel generator for severe accidents and the associated power supplies - control of severe accidents mitigation system - removal of post-accident hydrogen, vacuum prevention - safe shutdown for the non-affected unit - secondary containment"

35.	**Article** 14	**Ref. In National Report** Ch. 1.3.1, pp. 12-13
Question:	**Talking about regulatory oversight during Mochovce 3 & 4 commissioning, the report indicates that the challenge from the Joint 8th and 9th Review Meeting "maintaining effective regulatory oversight during commissioning" has been fulfilled, nevertheless it provides limited information on how findings from unplanned inspections (13 out of 60) and other joint inspections in the area of emergency preparedness and spent fuel shipments were integrated into regulatory improvements. Could Slovakia elaborate on the main lessons learned from these unplanned and other inspections, and how these have influenced current or future regulatory activities?**	
Answer:	As stated in the National Report: "The inspection plan is a tool for continuous and systematic evaluation of the inspection activity at NIs." Results from all of these inspection activities are one of the inputs during the preparation of inspection plan for next calendar year. Based on these results UJD gives more emphasis in its inspection activities on specific areas. Main findings from the inspections from previous years concerned the fulfilment of the written procedures and internal quality documentation. Due to this, emphasis of inspection activities of current year is stronger in these areas.	

36.	**Article** Planned Activities	**Ref. In National Report** Ch. 1.4, pp. 14-15
Question:	**The report notes that a feasibility study and EIA for the new nuclear power source in Jaslovské Bohunice have been completed, but does not specify how the Vienna Declaration principles are concretely applied in the project design**	

	stage. Could you clarify what specific design or safety measures have been adopted to align the new Bohunice project with the Vienna Declaration on Nuclear Safety, beyond transposition into national legislation?
Answer:	The design of the new nuclear source will have to comply with strict safety standards, including requirements defined in Vienna Declaration on Nuclear Safety as stated in National Report.

37.	**Article** Planned Activities	**Ref. In National Report** Ch. 1.3.2, pp. 13-14; Ch. 4.1.2
Question:	**The report briefly mentions that the regulatory body will continue to pay attention to new and innovative technologies, but does not elaborate on how this is operationalised in practice. What concrete steps have been taken since the 2022 IRRS mission to strengthen regulatory capabilities for assessing emerging technologies, such as SMRs or digital instrumentation and control systems?**	
Answer:	UJD closely monitors development in this area through various platforms, including IAEA (e.g. through NHSI intiative), at the EU level, through participation in relevant OECD/NEA working groups and through information exchange via bilateral channels	

38.	**Article** 7	**Ref. In National Report** Ch. 4.1.2, pp. 48-53
Question:	**Preparations for a new Atomic Act are ongoing to reflect modern regulatory challenges, including cybersecurity, SMRs and WENRA 2020 Reference Levels. Could Slovakia provide more details on the timeline and expected key changes in the new Atomic Act, and how it will enhance the regulatory framework compared to the current version?**	
Answer:	"UJD SR has been working on the Atomic Act continuously, last version of the text is from January 2026. According to the Legislative Plan of the Government the UJD SR should submit the first proposal in 4Q of 2026. UJD SR does not have any specific timeline elaborated for this matter. As far as the specific modifications are concerned, it will be more specific, more elaborate and will include e.g.: SMRs: specifications regarding the SMRs, which are currently under considerations, but will be based on the IAEA´s recommendations. These will be modified based on the WENRA reference levels and will become binding for the license holder, if they are reflected in the legally binding document. Cybersecurity - new Atomic Act will impose new obligations on the license holder. These rules are already applied; however, they are not binding from the UJD SR´s point of view. UJD SR - as a special building authority has different rights and obligations which derive from the new Building Act. These will be elaborated specifically for the licensing process of the nuclear installations."	

39.	Article 16	Ref. In National Report Ch. 1.3.2, pp. 13-14; Ch. 5.7.6
Question:	**The report highlights Slovakia's active involvement in international cooperation and peer review missions (IRRS, OSART, ARTEMIS, SALTO). We would much interested to hearing more how cross-border collaboration outcomes are integrated into domestic safety practices. Could you share examples of how insights or good practices from these recent peer review missions have been implemented domestically, particularly in strengthening cooperation with neighbouring regulatory authorities?**	
Answer:	The outcomes of the international peer reviews, (e.g. IRRS and ARTEMIS) are generally incorporated into action plan with defined actions, responsibilities of stakeholders and timeframe.The implementation of the Action Plan brings together stakeholders and enables further strengthening and improving the efficiency of the system of regulation of peaceful uses of nuclear energy in Slovakia. Exchange of information about lessons learned from hosting of international peer reviews (including the findings and further steps ahead) is also included in the topics discussed with partners during bilateral meetings, held between UJD SR and regulatory bodies from neighbouring partner countries (i. a. Czech Republic, Poland, Austria). License holders similarly invite and host such missions (OSART and SALTO), and incorporate the findings into the further strengthening of the safe and stable operation of Nuclear Installations.	

40.	Article Planned Activities	Ref. In National Report Ch. 2, pp. 16-19
Question:	**With ongoing efforts to complete Mochovce 4, extend EBO V2 to 2045 and develop a new Bohunice plant, Slovakia's nuclear sector is entering a new phase. How does Slovakia envision balancing investment in new capacity, long-term operation of existing units and preparation for decommissioning to ensure a sustainable and safe nuclear programme through 2050?**	
Answer:	Slovakia's approach to development of its nuclear programme is through a balanced combination of long-term operation of existing NPPs, preparation of new nuclear capacities and responsible preparation for decommissioning, including a deep geological repository, with the aim of ensuring a safe and sustainable nuclear programme beyond 2050. Existing NPPs are operated under valid licenses and are subject to regular safety assessments and modernization to enable their safe long-term operation. At the same time, Slovakia is preparing new nuclear capacities, including the project of new nuclear source in Jaslovské Bohunice, which is intended to respond to the expected growth in electricity demand and replace the gradually decommissioned generation capacities in the long term. The plans also include potential deployment of small modular reactors (SMRs). In the field of decommissioning, Slovakia is one of the leading countries, as e.g. the decommissioning of the V1 NPP is in its final phase, where the decontamination and dismantling of large-scale components of the primary circuit, including the reactor, main circulation pumps, and steam generators have been completed, with the extraordinary success of releasing up to 98 percent of all metal materials from the primary circuit into the environment.	

	Slovakia is implementing these steps in a European context, while actively participating in discussions on the creation of financial mechanisms to support nuclear energy, including special programs to support investments in new nuclear capacities, in extending their lifetimes, and in innovative technologies.

41.	**Article** 12	**Ref. In National Report** 5.3.3 Methods of Detecting and Correcting Human Errors
Question:	**Which indicators does the operator use to evaluate the effectiveness of Human Performance Enhancement System (HPES) programmes, and what recent trends have been observed?**	
Answer:	The operator (SE, a.s.) uses a set of leading indicators to evaluate the effectiveness of the Human Performance Improvement Program. These indicators are monitored monthly and quarterly in the following categories: • Observation and Coaching Performance: Observation schedule fulfilment, Targeted observations and co observations schedule fulfilment, Safety critical work observations schedule fulfilment • Observation and Feedback Findings: Findings in leadership from observations (areas for improvement), Findings in the use of the five "key HEPTs" from observations (areas for improvement) • Event related indicators: Event rate, Average number of days between the last six plant events resetting the timer, Highest number of days between plant events in the last 12 months, Number of human factor events during overhauls, Number of events resetting the timer at the department level, Number of serious events with a human factor, Number of repeated serious events with a human factor with the same cause Recent trends - from the 2025 outage evaluations (for units Bohunice 3, Bohunice 4, Mochovce 1, Mochovce 2 and Mochovce 3), the main trends are: • Areas needing the most improvement (Top 3): 1. Load handling (rigging/lifting equipment), 2. Storage and handling of substances, 3. Peer checking. • Areas with the best performance/positive trends (Top 3): 1. Flagging, 2. Documentation at the workplace, 3. Effective communication. These indicators and trends are regularly reviewed and used to focus coaching in the field, training and corrective actions within the HP program in order to prevent human errors and support safe operation.	

42.	**Article** 16	**Ref. In National Report** 5.7 Emergency Preparedness
Question:	**How does Slovakia evaluate the effectiveness of public warning and notification systems during emergencies?**	
Answer:	The Notification and Warning System of NPPs operator consists of technical means of notification (paging, automatic telephone notification devices) and warning (autonomous system of sirens, incorporated into governmental warning system). The government and its subjects also use several types of notification and warning system The functionality and effectiveness of system means are regularly checked: Notification:	

	• Once a year, Ministry of Interior performs notification exercise of the whole crisis system from the governmental to municipal level • up to 4 times a year UJD SR performs notification of international, state and media counterparts during exercises • operator performs notification drills: • 12 times a year with state and local government • 2 times a week with members of the Emergency Response Organization (OHO) • 8 times a year with all counterparts during emergency drills • Once a week UJD SR performs notification drill of its employees Warning: • 12 times a year test of warning system (second Friday of the month), out of which: • 8 times a year Silent system test • 4 x per year loud system test (1 initiated by central government, 1 by regional offices of Ministry of Interior, 2 by municipalities) • 1 x per year Loud system test during emergency drills - performed by operators of NPPs in the Emergency Planning Zone • 12 x per year Silent system test of autonomous warning system in EPZs during emergency drills The effectiveness of NPP operators' system measures is evaluated using NPP process indicators (KPIs) on a monthly and quarterly basis. The effectiveness of state-run warning system is evaluated automatically - inherent feature of the system.

43.	**Article** 19	**Ref. In National Report** 6.3.2: Limits and Conditions for Operation
Question:	**How are the applicable safety margins for each parameter defined?** **What process is used to evaluate whether a temporary L&C modification is acceptable?** **What is the regulator's role when a deviation from the established L&C occurs?**	
Answer:	1. Safety margins are determined in the design process using deterministic analyses. Their definition is carried out in accordance with the IAEA Safety Guide SSG-70 Operational Limits and Conditions and Operating Procedures for Nuclear Power Plants, Fig. A-1, which illustrates the interrelationship between the safety limit, a safety system setting and a limit for normal operation (also in UJD SR Safety Guide BN 2/2024). The safety margin is defined as the margin in the value of a parameter above or below the operational limiting value of the parameter until the safety limit of this parameter is reached. The operating margin is determined as the margin from the value of the parameter in its given range in normal operating modes until the limiting value of the operating parameter is reached - to the operational limit value of the parameter. It consists of the margin until the correct operation of the warning signal is achieved and the practical margin until the operational limit is reached. The value of the operational limit is given based on the results of safety analyses and is above the operational range of the parameter and below the settings of safety systems.	

	An appropriate margin is maintained between the operating limits and the settings of the safety systems to avoid too frequent activation of the safety systems. 2. The Atomic Act does not define temporary changes, temporary changes of L&C are treated as permanent changes and the method of change management is defined in Section 9 of the Decree No. 431/2011 Coll. on QMS. The applicant for an authorisation or the authorisation holder shall submit to the authority: a) an analysis of the causes of the proposed change, with justification of the goal of the change, b) an impact assessment of the change on nuclear safety, c) proposed measures to eliminate possible negative effects of a new installation on existing equipment during its installation, inspection, tests, maintenance and operation, d) proposed measures to eliminate possible negative effects of the change, including its inclusion in quality management system documentation or professional employee´ s training, e) a list of the quality management system documentation that the change shall affect, and changed quality management system documentation if it is subject to Authority approval, or if the Authority evaluation or if the Authority requires to take look at it, f) a safety assessment for the proposed change performed by an independent person through risk analysis, g) an evaluation of the proposed change by the author of the original design, or another qualified person with proven experience. 3. According to the Atomic Act No. 541/2004 Coll., within the scope of the permission or the authorisation, the authorisation holder is obliged to comply with the L&C of safe operation or L&C of safe decommissioning; their breach, non-compliance or exceeding thereof must be notified to the Authority immediately. These events are dealt with by the event analysis group established at the Authority. Passing of L&C are reported to the authority by the permit holder in the form of daily reports and are immediately inspected by local inspectors. If an event occurs and the required action is not taken within the specified time, as defined in the wording of the L&C, this constitutes a breach of the L&C. Breaches of L&C are examined during inspections by the Authority, which can be planned or unplanned, with a focus on checking the implementation of prescribed activities to be performed by operating personnel in the event of deviations from L&C and the permitted time frame for recovery from these deviations, which will bring the NPP to a safe state. Inspections include a review of the root cause analysis performed by the permit holder. The result of the inspection is a protocol specifying corrective measures to eliminate the identified deficiencies.

44.	**Article** 19	**Ref. In National Report** Point 6.3.3: Review of Operational Documentation
Question:	**What is the specific scope of the three-year operational documentation review? Does it cover all documentation (normal, abnormal, emergency, SAMG, etc.) or only a specific subset?**	

	Are all documents actually reviewed, or are some revalidated without changes if still valid? **What is the regulator's role in this review process?**
Answer:	All the documentation of the management system of the license holder must be reviewed at least once in three years (see Section 4(11) and Section 4(2) of the Decree No. 431/2011 Coll. on QMS) That means the review applies to all documentation, including operational documentation. The task of the review is to determine whether a specific document needs to be updated or remains valid without changes. Documents without changes are not reissued, only status of document is changed on ""reviews with results up-to-date"" with actual date. The task of the UJD SR is to check (in the form of an inspection) whether the review was carried out within the specified deadline. If the updated documentation is subject to approval by the UJD SR (selected operational regulations), then the UJD SR assesses and approves the updated documentation.

45.	**Article** 19	**Ref. In National Report** Point 6.3.3: Preventive Maintenance
Question:	**How is a graded approach applied to determine which components receive preventive maintenance and at what frequency?** **What level of regulatory oversight is applied? Do they inspect tasks in the field, verify acceptance criteria, or mainly review records and frequencies?**	
Answer:	"Preventive maintenance is applied to power plant components in accordance with legislative requirements (see Section 2(4) of the Decree 431/2011 Coll. on QMS) and equipment reliability processes based on best operating practices. The graded approach consists of complying with legislative requirements for preventive maintenance according to the frequency and intensity of preventive maintenance defined by law or decree. The Equipment Reliability Process has introduced a graded approach according to INPO AP 913 rev.5 - equipment criticality, where individual maintenance tasks are assigned based on the criticality (critical/non-critical/to be repaired) of components and maintenance templates for component subgroups. The graded approach to equipment maintenance is proportional to its classification into a safety class. The classification into a safety class and in-service inspections programs of classified equipment are approved by the UJD SR based on the requirements set by the equipment manufacturer. For the most important components of a NPP (e.g. reactor pressure vessel, steam generator, main circulation pump, automatic control rod drives, etc.), changes in the periodicity of inspections are approved by UJD SR. UJD SR carries out in-service inspections and maintenance of classified equipment in the form of regular annual inspections in all NPP locations (Bohunice + Mochovce) on all NPP units. Inspections by the UJD SR are divided according to the type of classified equipment into the mechanical, electrical, instrumentation and control system (I&C) and civil structure areas."	

46.	Article 19	Ref. In National Report Point 6.3.3: Severe Accident Management Guidelines (SAMG)
Question:	**Does the SAMG package address flammability management in the containment building atmosphere? If so, what strategies are considered to control flammable gas accumulation?**	
Answer:	"SAMG was developed in cooperation with Westinghouse and it addresses flammability management in containment building. In confinement PAR are installed, which manage hydrogen in confinement. Accumulation of hydrogen and other flammable gases in rooms neighbouring to confinement are solved by ventilation of these rooms."	

47.	Article 6	Ref. In National Report 3 Nuclear Installations in Slovakia According to the Convention
Question:	**What are the modernizations implemented in the plants, as mentioned on page 21/182?**	
Answer:	The mentioned modernization activities are described in detail in Section 3.2 for Bohunice units 3 and 4, in Section 3.3 for Mochovce units 1 and 2, and in Section 3.4 for Mochovce units 3 and 4.	

48.	Article 6	Ref. In National Report 3.4 Nuclear Power Plant Mochovce Units 3 and 4
Question:	**Have the power and signal wiring, for different redundancies in the safety systems, been segregated to avoid common cause failure? Page 34/182.**	
Answer:	Nuclear safety of each unit is assured by three independent divisions of safety systems. Each of these divisions is equipped with necessary equipment for reactor aftercooling and failure mitigation for different types of accidents. In each of these divisions, there is created one Emergency Electricity Power Supply (marked 1, 2, 3 or K, L, M) as support system for the other safety systems of own division. For providing of necessary degree of redundancy and reliability, these Emergency Electricity Power Supply are independent and mutually separated in layout (structurally, fire separation), electrically (principle 100% + 100% + 100%) and from the point of view of control. Power and control cables are isolated, too. In connection to design of power supply technology (three divisions), these three Emergency Electricity Power Supplies create system resistant to single failure in design states.	

49.	Article 14	Ref. In National Report 5.5 Safety Assessment and Verification
Question:	**In sites with multiple units, how has the interaction between them been considered?, for example, in the habitability of the control room, shared emergency systems, electrical interconnection, fire brigades, etc.**	
Answer:	At multi-unit sites, interactions between units are addressed within the safety assessment and verification framework described in Chapter 5.5 of the National	

	Report. Deterministic and probabilistic safety assessments and periodic safety reviews consider common cause scenarios involving shared systems, electrical interconnections, and common organizational resources to ensure that safety margins and defence in depth are preserved. Control room habitability is evaluated for multi-unit events, including radiological conditions, fire, and loss of support systems. There is the availability of a dedicated emergency control room, designed to ensure continued control capability in the event that the main control room becomes unavailable or uninhabitable. Clear and predefined operating instructions specify the conditions and criteria under which the transition to the emergency control room is required. The availability and capacity of shared emergency and support systems are verified to ensure that safety functions for each unit remain fulfilled. Fire protection, including on site industrial fire brigades, are assessed to confirm adequate capability to respond to events potentially affecting more than one unit.

50.	**Article** 14	**Ref. In National Report** 5.5 Safety Assessment and Verification
Question:	**Has the use of AI been implemented, either in the regulatory body or in the operator?**	
Answer:	"Trends and developments in the area of artificial intelligence are being monitored. AI is not formally implemented at UJD SR. At the Bohunice NPP, the use of artificial intelligence has been explored on a limited basis in the past, primarily in the area of supporting the coding of NG (events, deficiencies and near miss) reports. At that time, early generation AI models were tested, however, their performance and reliability were not sufficient for practical or sustained use, and the approach was discontinued. Currently, modern AI tools are used only as auxiliary means to support the work of employees, for example in drafting, reviewing, or structuring information. These tools are used at individual user level and serve purely as support instruments. AI is not formally implemented."	

51.	**Article** 14	**Ref. In National Report** 5.5 Safety Assessment and Verification
Question:	**Have regulated entities been required to develop or implement a cybersecurity plan? If so, what guidelines were considered?**	
Answer:	At present, legislative framework does not explicitly require the establishment of a distinct “Computer Security Plan” as a standalone document. Nevertheless, the operator has developed such a plan, which is incorporated into the "Physical Protection Plan" as an integral chapter thereof. Supervised entities prepare these plans in accordance with the recommendations of the International Atomic Energy Agency documentation and in compliance with the relevant requirements set out in applicable international standards governing this field (e.g. IAEA Guidance NSS 42-G Computer Security for Nuclear Security).	

52.	Article 8	Ref. In National Report 4.2 State regulation
Question:	**Are there established time periods for the regulator regarding the granting of licenses or permits?**	
Answer:	Government authorities are bound by statutory time limits. The general time limits for issuing a decision, stems from the Administrative Proceedings Act, which typically provides for a 30-day period, or a 60-day period in more complex cases. Nuclear licensing proceedings, however, are classified as particularly complex administrative proceedings. According Section 8 (5) of the Atomic Act, UJD SR shall issue a decision regarding permission or authorisation, if the application contains the prescribed essentials, if the required documentation was attached and the applicant meets the conditions, within the following time limits: a. within 60 days, unless this Act further stipulates otherwise, b. within four months, if it is for the decision for construction intention of the construction of the nuclear installation except for the repository construction, c. within six months for 1.approval for the trial operation, 2.preliminary use of the construction, 3.approval of the building, 4.commissioning of the nuclear installation and 5. decommissioning phase, d. within one year for 1.authorisation according to Section 17a (siting of nuclear installation), 2.approval for the construction of the repository and the closure of the repository, 3.approval subsequent to the termination of the approval issued with some restrictions according to par. 1 letter. d) and 4. verification of the construction project.	

53.	Article 8	Ref. In National Report 4.2 State regulation
Question:	**Does the regulator have any method for verifying and validating codes?**	
Answer:	UJD SR does not perform verification and validation of computer programs or I&C software. However, UJD SR requires that the licensee/TSO ensure verification and validation of the software within the established QA, or product quality assurance of classified equipment. UJD SR checks compliance with the given legal requirement within the administrative proceeding process. UJD SR participates, to the extent possible, in international projects/activities organised by OECD/NEA, IAEA or bilateral cooperation focused on verification/validation of selected computer codes and uses the acquired experience in practice. UJD SR participates, as necessary, in verification and validation of I&C software performed by its manufacturer/supplier.	

54.	Article 6	Ref. In National Report Para 3.8, pages 42-43
Question:	**Since the National Repository for Radioactive Waste, which is located near the Mochovce NPP, is designed only for low-level and very low-level waste, what decisions are being implemented with regard to the management of intermediate- and high-level waste?**	
Answer:	Management of intermediate- and high-level waste follows strategic document "The national policy and national programme for handling of spent nuclear fuel and radioactive waste in the Slovak Republic". In accordance with this document, the last step in the management of this waste stream is final disposal in deep geological formations. The preparation of the deep geological repository is currently under development. Radioactive waste (RAW) from NPP A1 and NPP V1 decommissioning that cannot be disposed of at the Mochovce National RAW Repository is stored in the Interim Storage of RAW (facility).	

55.	Article 6	Ref. In National Report Para 3.8
Question:	**Does Slovakia consider the possibility of expanding the functions of the existing radioactive waste repository or constructing a new facility for the increasing amounts of radioactive waste generated during the decommissioning of power units?**	
Answer:	Currently, there are no plans to expand the functions/functionalities of the existing radioactive waste repository or build a new radioactive waste disposal facility in Mochovce. The current disposal structures of the repository for disposal of low-level waste consists of three operational double rows of concrete boxes with the total capacity 10,800 containers. Works are currently under way to provide additional disposal capacity for low-level waste. The fourth double row is ready to be put into the operation. The repository site allows for its expansion up to 7.5 disposal double rows, i.e. for the disposal of approx. 27,000 containers. The total disposal capacity within phase 1 and 2 for very low-level waste is currently 29,000 m3. The implementation of the last, 3rd phase of very low-level waste repository is under preparation.	

56.	Article 6	Ref. In National Report Para 3.8
Question:	**Does Slovakia have a determined strategy for the final disposal of radioactive waste that is not suitable for near-surface disposal (note: the national repository near the Mochovce NPP is a near-surface facility)?**	
Answer:	The Slovak Republic has a defined strategy for the final solution for radioactive waste that is not suitable for storage in a surface repository, based on the "National Policy and National Program for the Management of Spent Nuclear Fuel and Radioactive Waste in the Slovak Republic" (the document is being updated in the final stages of the Strategic Environmental Assessment process based on Act No. 24/2006 Coll. on Environmental Impact Assessment). The long-term goal	

	is to build a deep repository for spent nuclear fuel and radioactive waste that cannot be stored in the National Radioactive Waste Repository in Mochovce.

57.	**Article** 10	**Ref. In National Report** Para 5.2.2, page 75
Question:	**Act No. 308/2018 Coll. on the National Nuclear Fund establishes the rules for managing, collecting and using the financial resources of the National Nuclear Fund.** **The main source consists of mandatory contributions and payments from holders of licenses for operation.** **Question: Please describe in more detail the mechanism by which the mandatory contributions to the National Nuclear Fund are calculated.**	
Answer:	The calculation process for determining the mandatory (compulsory) contributions and mandatory payments to the Nuclear Fund is annually based. The structure of the parameters according to the annual expression complies with the structure of costs for the final stage of the nuclear power engineering. The setting of the individual phases of the accumulation of funds relates to the lifecycle of the given nuclear installation. In principle, the structure and length of the different phases may have a different composition at the start of operation of a given nuclear installation, during operation according to the amount of accumulated funds, and in the sections of the lifecycle of a nuclear installation prior to its planned decommissioning. The phases of accumulation of funds in the nuclear fund are different for nuclear installations generating electricity and non-generating electricity (non-reactor installations). The description of the methodology is included in Chapter C7.11 of the updated „National Programme for Management of Spent Fuel and Radioactive Waste in the Slovak Republic“ available on the web page of the National Nuclear Fund : https://www.njf.sk/wp-content/uploads/2026/02/nat-pro-_update_feb-2024-pdf.pdf	

58.	**Article** 14	**Ref. In National Report** Para 5.5.1, pages 99-100 (Update of natural hazards characteristics)
Comment:	**According to the information presented in this section, "The update of the meteorological hazard characteristics will be carried out for the Jaslovske Bohunice and Mochovce sites in 2022. The reinforcement of the NPP EMO 1,2 to a new higher level of seismic hazard resistance is currently underway and will be completed by December 2022 ", i.e. it is stated that the update of meteorological hazard characteristics for the Jaslovske Bohunice and Mochovce sites will be conducted in 2022. In December of the same year, activities to bring the Mochovce NPP Units 1 and 2 to a higher level of seismic resistance were scheduled to be completed. However, now it is already 2025. Apparently, the information needs to be corrected if the indicated activities have been completed.**	
Answer:	The indicated activities were successfully completed in 2022. Slovak hydrometeorological institute (SHMÚ) continuously monitors the meteorological situation at NPP sites in Slovakia, and regularly updates its report on weather, meteorological and hydrological conditions for these sites. The last summary	

	SHMÚ reports were issued in March 2022 for Jaslovské Bohunice site and in April 2022 for Mochovce site. Weather trends and data are used to derive the frequency and intensity of extreme meteorological and hydrological conditions. The return periods of extreme conditions are evaluated by SHMÚ, Slovenske elektrarne, and other organizations in Slovakia, and are used to validate the assessments. Based on the data, the analyses of the sites are performed and the resistance of the NPPs to extreme external conditions is determined. The results are reflected within PSA studies on external hazards for the NPPs. The last updated PSA was issued in April 2024 for Bohunice NPP, and in October 2024 for Mochovce NPP. The reinforcement of the NPP EMO 1,2 to a new higher level of seismic hazard resistance was successfully completed by the end of December 2022, i.e., by the deadline requested in the UJD SR Decision. The progress of the reinforcement work and efforts (analysis/re-assessment and verification of seismic resistance for equipment and civil structures, proposal and design of reinforcement measures, if necessary, implementation of the measures and verification of their implementation) had been continuously monitored and inspected by the UJD SR and documented in the outputs from the set of inspections. The last of the inspections (completed in May 2024) verified and confirmed that the conditions of the UJD SR Decision had been met.

59.	**Article** 14	**Ref. In National Report** Para 5.5.1, page 101 (PSA)
Question:	**Have combinations of initiating events (including internal and external extreme hazards) been taken into account in the PSA of the Bohunice and Mochovce NPP units?**	
Answer:	PSA of Mochovce and Bohunice NPPs also includes a comprehensive analysis of combinations of internal and external events with a significant impact on risk, and these are subsequently part of the quantification of risk within PSA. In general, potential combined events are two or more events that have a conditional probability of simultaneous occurrence. It is caused by physical, technological, spatial interaction causing a cause-effect relationship. Combinations of two or more initiation events are not combined in terms of PSA creation methodologies. The reason is precisely the fact that these are mutually unrelated events with a negligible conditional probability of their simultaneous occurrence. However, combinations of the initiating event and events resulting from internal and external threats are considered, where the conditional probability of their joint occurrence is significant (e.g. the simultaneous occurrence of the initiating event and an internal fire is considered). Also included are combinations of events resulting from external threats for which there is a causal relationship or non-negligible conditional probability of simultaneous occurrence (e.g. strong wind occurring simultaneously with precipitation and snow extremes, etc.). On the contrary, it does not combine, for example extreme high temperature and extreme low temperature because their co-occurrence is physically mutually exclusive. Combinations of human-induced events with each other and with other events are not considered because they are rare independent events and do not have a conditional probability of occurrence together with other events.	

60.	Article 15	Ref. In National Report Para 5.6.3, pages 114-115
Question:	**Section 5.6.3 provides the average effective doses to workers at nuclear facilities for 2020-2024.** **Question 1. What were the maximum effective doses received by workers at nuclear facilities during the period from 2020 to 2024? Is there a downward trend in the maximum effective doses received by nuclear facility workers for 2020-2024? What measures were taken to reduce the maximum effective doses to nuclear facility workers?** **Question 2. Were there any cases of exceeding the dose limits established for nuclear facility workers in 2020-2024? If so, for what reason?**	
Answer:	The average effective dose of workers in nuclear facilities for the period 2020–2024 was 0.3333 mSv. The average maximum effective dose for the same period was determined based on the highest individual dose recorded for a worker in each year. Trend analysis indicates that during 2020–2024 there was a declining trend in the maximum effective doses received by workers in nuclear facilities. Specifically, in 2020 the maximum dose recorded for a worker in a nuclear facility was 7.322 mSv, while in 2024 the maximum dose reached 4.946 mSv. The received maximum effective doses depend on the work performed during operation and decommissioning of NPPs. Max individual effective doses (mSv) for 2020-2024 at Radiologicallly Controlled Area NNP Bohunice : 4.989, 6.171, 4.852, 5.481, 4.946 - at Radiologicallly Controlled Area NNP Mochovce : 2.333, 2,086, 3.623, 2.687, 3.248 Optimisation is largely determined by operational experience. To reduce the maximum effective doses, measures aimed at optimizing radiation protection were implemented, including: • improvement of work procedures and operational strategies to minimize exposure, • regular monitoring and assessment of individual worker doses, • strengthening the personnel and technical capacities of radiation protection control units, • training of workers focused on safe handling of radioactive materials and operational risks. There were no cases of exceeding the dose limits (20 mSv) established for nuclear facility workers in 2020-2024.	

61.	Article 15	Ref. In National Report Para 5..6.2, page 109
Question:	**What are the maximum discharges and releases registered in recent years in relation to the permissible levels? Do you calculate the doses received by the public due to discharges and releases during NPP normal operation? How do you monitor the content of radioactive substances in the environment? Is there an independent organization in your country, subordinate to the regulator, that monitors the content of radioactive substances in the environment?**	
Answer:	The results of emissions and discharge monitoring to date show in most cases that actual discharges are well below the specified limits and reference levels. E.g. discharges from JAVYS, a.s. nuclear installations (decommissioning and radwaste treatment activities) were as follows	

	Year α RN 90Sr β+Y RN 2020 - 2023 < 23% < 25% < 10% 2024 < 5% < 4% < 1% Doses for a representative person from the operation of nuclear facilities typically range at fractions of a percent of the legal limits. Both radiation protection regulator (PHA SR) and operators calculate doses based on discharges. Radioactive discharges are monitored by online measurements in ventilation stack and online waste water monitoring, and by gamma spectrometry, liquid scintillation spectrometry, alpha spectrometry, low beta measurements (proportional counter) of each sample from discharged material (aerosols, liquid samples from effluents). There are two environmental survey programmes, one carried out by the regulatory authority and one by the NPP operator. On the regulatory side, there is no other organization, or subordinate organization which could monitor radioactive discharges - there is PHA SR only.

62.	**Article** 14.1	**Ref. In National Report** Para 5.5.1, page 101 (PSA)
Question:	**To what extent have probabilistic models of power units been developed for real-time risk monitoring?**	
Answer:	Probabilistic models of Bohunice NPP for real-time risk monitoring have been developed on the base of PSA models and cover all types of hazards (internal and external) related to the site. In the case of Mochovce NPP, such models will be finalized by the end of 2026.	

63.	**Article** Planned Activities	**Ref. In National Report** Para 3, page 21
Question:	**According to the information provided in Table 1 on page 21 of the report, the last safety review of Bohunice NPP Unit 3 and 4 was carried out 41 and 40 years after their commissioning, respectively. Question: Could you provide (brief) information on Slovakia's (specific) plans to construct new NPP units that would replace Bohunice Unit 3 and 4 in the (near) future? (Note: According to the information on page 52, Section "Recent legislative amendments", small modular reactors (SMRs) are also listed among the reasons for developing the new Atomic Act. Thus, it can be concluded that the country is considering the possibility of SMR deployment).**	
Answer:	The project of a new nuclear source in Slovakia is mainly response to the expected growth in electricity demand in the future and the need to ensure long-term stability and security of electricity supplies. Operation of the Bohunice V2 NPP is carried out on the basis of valid operating licenses. It is assumed that in the event of termination of operation of these units, new nuclear source will be able to replace the resulting production outage and at the same time contribute to ensuring stable and low-carbon electricity consumption in Slovakia. According to current assumptions, the new nuclear source is expected to be put into operation approximately in 2040 - 2041. Slovakia is also actively interested in the introduction of small modular reactors (SMRs). It is currently assumed that the first deployment of this technology could be implemented in the period 2035-2037. Within the framework of the Phoenix	

	and NEXT projects, a survey of several potential facilities, including former coal-fired power plants, is underway to assess their suitability for the implementation of these technologies. At the same time, JAVYS, a.s. participates in joint venture, which will address the question of the future need for the use of spent nuclear fuel, in particular through its reprocessing and subsequent use in lead-cooled advanced modular reactors (AMRs).

64.	**Article** 6	**Ref. In National Report** Para 3.8, page 43 (National Repository for Radioactive Waste)
Question:	**What specific types of high-level radioactive waste are being or are planned to be finally disposed of, and what conditioning methods are applied in this process?**	
Answer:	High-level waste is intended to be disposed in the deep geological repository which is under development. This repository will primarily dispose of spent nuclear fuel and all radioactive waste that does not meet the acceptance criteria of the National Radioactive Waste Repository in Mochovce. Currently the project for development of deep geological repository is in the state of documentation preparation for siting and public involvement and the specific method(s) of conditioning have not been determined, yet. The deep geological repository is expected to be commissioned roughly around 2065. More details see in the G.6 section of the 2024 "National Report of the Slovak Republic compiled in terms of the Joint Convention on the safety of spent fuel management and on the safety of radioactive waste management".	

65.	**Article** 17.1	**Ref. In National Report** Para 6.1.2, page 138
Question:	**Is population density a criterion that is taken into account when selecting sites for nuclear facilities in Slovakia?**	
Answer:	The selection of a site for a new nuclear facility is a complex process that assesses various decisive criteria for its appropriate selection. The first step in this process is a professional and public assessment of the environmental impacts of the proposed activity before deciding on its location or before its permit, in accordance with Act No. 24/2006 Coll. on Environmental Impact Assessment. The purpose of this assessment is a high level of environmental protection, identifying direct and indirect impacts of the proposed activity on the environment, clarifying and comparing the advantages and disadvantages of the proposed activity and determining measures and obtaining professional basis for the decision on the permit for the activity. Part of the environmental impact assessment (in the assessment report) is also the assessment of the impacts of the proposed activity on the population and their health, which also includes a description of the affected area, and therefore also population parameters. The next step in this permitting process is to obtain approval for the location of the structure by the UJD SR in accordance with Atomic Act No. 541/20045 Coll., which also include demographic criteria from a safety perspective. The distribution of the population in the surrounding area is therefore a relevant input when assessing the site and when proposing/justifying protection zones and emergency planning. However, from the point of view of the applicable	

	legislation, population density is not an explicitly stated criterion for selecting the location of a nuclear facility. Currently, all Slovak nuclear facilities are located in Jaslovské Bohunice and Mochovce, where construction began in 1958 (for Jaslovské Bohunice) and 1983 (for Mochovce). It is therefore necessary to emphasize the already existing experience of the population with the construction and operation of nuclear facilities and the support of the local population for the use of nuclear energy.

66.	**Article** 17.1	**Ref. In National Report** Page 138 (general question)
Question:	**At what stage of the decision-making process for the construction of, for example, small modular reactors, does work with the public begin, and what does this work involve in Slovakia?**	
Answer:	In Slovakia, public engagement in the decision-making process concerning the construction of facilities such as small modular reactors begins at a very early stage, in particular within the environmental impact assessment (EIA) procedure. The EIA constitutes a key phase of the decision-making process, during which the public is granted extensive participatory rights, including access to relevant documentation, the right to submit written comments and objections, and participation in public hearings. Public participation is anchored in both national legislation and international and EU legal instruments, notably the Aarhus Convention and the relevant EU EIA legislation. The competent authority is obliged to duly assess and take into account the comments submitted by the public when issuing its decision. Section 24 (2) of the Act No. 24/2006 Coll. on Environmental Impact Assessment stipulates that public concerned shall have the status of a party to the proceedings in the environmental impact assessment process and, subsequently, the status of a party to the authorisation proceedings for the proposed activity or its change, provided that it follows the procedure under Section 3 or if its participation in the proceedings does not already arise from a special regulation. In addition to the EIA process, public involvement may also take place in subsequent administrative proceedings, including zoning and construction proceedings under the Construction Act, where affected persons and the public may exercise procedural rights in accordance with applicable law. The overarching purpose of public engagement is to ensure transparency, democratic legitimacy of decision-making, and the integration of public interests into the authorisation process for projects with potentially significant environmental and societal impacts. Anyone can become a party to the proceedings during any stage of the licensing process. If UJD SR wants deny a person his participation, it has to be done through the administrative proceedings. Against its decision a party may appeal.	

67.	**Article** 18.1	**Ref. In National Report** Para 6.2, page 140 (general question)
Question:	**Have assessments been carried out for the different types of radioactive waste that will be generated at each nuclear power plant as a result of decommissioning activities?**	
Answer:	Assessments of future different types of radioactive waste (RAW) generated at NPPs is performed during all steps of NPP lifetime. First assessment is conducted	

	in the Reference report on the method of decommissioning during building intention of a nuclear installation and siting of a nuclear installation (in details it is listed in Section 3(d) of the Decree 58/2006 Coll. on Documentation. Consequently, inventory of RAW is assessed in Preliminary conceptual decommissioning plan (in details it is listed in Section 10(3)(f) of the Decree 58/2006 Coll. on Documentation) and Conceptual decommissioning plan (in details it is listed in Section 22(3)(f) of the Decree 58/2006 Coll. on Documentation) during construction phase and operation. Also, Section 3(3) of the Decree 30/2012 Coll. requirements on the management of nuclear materials, radioactive waste and spent nuclear fuel stipulates: "To document and assess the management of radioactive waste, representative samples are taken and analysed at important management points by the authorisation holder according to Section 5(3)(f) (of the Atomic Act). These samples are kept until the radioactive waste has been placed in a repository, and the samples from waste characterisation during repository operation are kept until the end of repository operation." Finally, assessment of the different types of radioactive waste that will be generated as a result of decommissioning activities is specified in a methodological guideline of operator of Slovak NPPs.

68.	**Article** 14	**Ref. In National Report** Para 5.5.1, pages 98-102
Question:	**Were the WENRA reference levels (Safety of New NPP Designs. Report/Study by RHWG, 2013) for new power units taken into account during the preparation of the reports on safety justification for Mochovce NPP Units 3 and 4, in particular such levels as O3.3 (Multiple Failure Events) and O3.5 (Practical Elimination)? If so, what were the results, and were any corrective measures required?**	
Answer:	The indicated safety objectives for new reactors have been implemented to Slovak legislative requirements. Therefore, consideration of multiple failure events and practical elimination of situations that could lead to early or large releases of radioactive materials is essential part of the safety assessment and demonstration documented in the safety reports for all units. For Mochovce 3&4, the technical, operational and/or administrative measures needed for reaching these objectives were implemented already in the design phase. Among others, various technical means for severe accident management (e.g., concept of in-vessel melt retention, additional emergency resources of energy, cooling water and tools for their delivery) and SAMG. The safety justification complies with WENRA safety expectations for the design of new NPPs presented in the above mentioned WENRA study prepared in 2013. Specifically, safety justification for Mochovce NPP Units 3 and 4 was carried out by Addendum to the Basic Design no. 048 and amendment of SAMG. The following activities were carried out in the area of Multiple Failure Events and spent fuel pool: a) Processed analysis "Management of severe accidents on all units at the site" (including reactors at full power, reactors in shutdown state and spent fuel pool) b) Prepared plan for implementation of additional measures to expand the SAM project to improve the manageability of severe accidents when they occur on all units at the site at the same time.	

	c) SAMG was updated after Fukushima to implement post-Fukushima improvements for the Westinghouse Owners Group (Pressurized Water Reactor Owners Group). Measures from "Load Tests" were implemented in the SAMG manuals. d) SAM was updated with regard to possible damage to the infrastructure, including disruption of communication at the power plant, plant and state level, long-term accidents (lasting several days) and accidents affecting multiple units and neighboring industrial facilities. The Transport Research Institute analysis has been processed – „Analysis of possible damage to critical road communications at the power plant, plant and state level due to an external extreme event - seismic activity and a proposal for measures to ensure the traffic availability of the power plant premises within 24 and 72 hours after the occurrence of an external extreme event at Bohunice and Mochovce“. e) The SAM project was implemented from the point of view of managing a severe accident on multiple units at the same location (fuel placed in an active reactor zone and in the spent fuel pool). The plan for the implementation of additional measures for the expansion of the SAM project with the aim of improving the ability to manage a severe accident at its simultaneous occurrence on all units on the site.

69.	**Article** 15	**Ref. In National Report** Para 5.6, pages 107-115
Question:	**Could you please provide more details about the system existing in Slovakia for prompt analysis of the dosimetric situation in the vicinity of nuclear power plants?**	
Answer:	The Teledosimetry system (TDS) is used for continuous monitoring of radiation situation on the site and around the NPPs during normal operation as well as in case of emergency, associated with the release of radioactive substances into the environment. The system is operated by NPPs operator and is divided into two circuits. The first circuit is located on the site and consists of monitoring pillars with collimated dose rate detector and large monitoring stations with dose rate, aerosol and iodine volume activity measurements. The second circuit is located near selected settlements in the NPPs Emergency Planning Zone and consists of small monitoring stations with dose rate detectors and iodine and aerosol samplers and large monitoring stations with dose rate, aerosol and iodine volume activity measurements. Data from the TDS system are sent to the PHA SR and also to UJD SR. During Emergencies, it is part of Slovak Radiation Monitoring Network.	

70.	**Article** 15	**Ref. In National Report** Para 5.6, pages 107-115
Question:	**Could you please provide information on the emergency planning zones and distances for NPPs in Slovakia?**	
Answer:	The emergency planning zone for the Bohunice NPP is defined by a radius of 21 kilometers, while the zone for the Mochovce Nuclear PP covers a radius of 20 kilometers. Details on Emergency planning for nuclear installations in the Slovakia are primarily based on Atomic Act No. 541/2001 Coll. and by the Decree 55/2006 Coll.	

	on Emergency Planning. These instruments lay down the framework and general requirements for determining the size of emergency planing zones and for assessing the potential radiological consequences of incidents and accidents.

71.	**Article** 6	**Ref. In National Report** page 34
Question:	**One of the measures to improve fire protection for Mochovce NPP Units 3 and 4 is to equip NPP cable ducts and rooms with a stable fire extinguishing system. Did these measures concern the modernization of existing fire extinguishing systems or the installation of new ones? Are similar measures planned to improve fire protection for Mochovce NPP Units 1 and 2?**	
Answer:	As for units 3 and 4, the fixed fire extinguishing system in the cable areas was improved from the point of view of the initial project, it was not a modernization. A fixed sprinkler fire extinguishing system was formerly designed for fire extinguishing. By updating the initial project, it was changed to a fixed water mist fire extinguishing system. Other fixed fire extinguishing systems used at units 3 and 4 of Mochovce are based on the updated initial project. A fixed sprinkler fire extinguishing system is used at units 1 and 2 of Mochovce. There are currently no plans to modernize the fixed fire extinguishing system. Modernizations are planned from the point of view of the control and management system, when fire-resistant and non-flammable cables will be used, which will lead to increased fire safety. As for the modernization of fixed fire extinguishing systems at units 1 and 2 of Mochovce, there are plans to change the fixed gas fire extinguishing system to foam fire extinguishing system at diesel generator.	

72.	**Article** 14	**Ref. In National Report** 5.5, 6.1, page 99,100, 137-139
Question:	**Section 5.5.1 of the National Report states: "Both studies take into account expected climate change in Slovakia. The meteorological hazard characteristics will be updated for the Jaslovské Bohunice and Mochovce sites in 2022. The EMO 1 and 2 nuclear power plants are currently being upgraded to a new, higher level of seismic resistance, which will be completed by December 2022." Have these activities been completed? Does the information provided in Section 6.1.2 take into account the results of updating the meteorological hazard characteristics?**	
Answer:	The mentioned activities were successfully completed in 2022. The section 6.1.2 is in principle taking into account the results of the updated meteorological characteristics. However, some pieces of information in 6.1.2 are not correctly updated and/or are not accurate. E. g., the value of extreme precipitation (209 mm rainfall during 1 hour) does not represent the local site value once in 10 000 years (i.e., probabilistic value). But the value is set up deterministically, as the worst value from the data from the larger area that has ever been measured in Slovakia, and was applied for both sites (Bohunice and Mochovce). This value (higher than local probabilistic ones) was used in analysis determining the resistance of the NPPs to external flooding. Where needed, the corrective measures were applied accordingly. Advanced analyses reassessing the seismic resistance (i.e., quantifying safety margins of key structures, systems and components) were completed, as well. The safety reports of NPPs have been already updated. The updated results are also reflected within PSA studies on	

	external hazards and within the seismic PSA for the NPPs. The last updated PSA was issued in April 2024 for Bohunice NPP, and in October 2024/January 2025 for Mochovce NPP.

73.	**Article** 14	**Ref. In National Report** 5.5 Safety Assessment and Verification
Question:	**Are there plans to conduct Multi-unit Probabilistic Safety Assessment studies for the EBO and EMO NPP units? Have such studies been conducted previously (if so, could you provide their main results)?**	
Answer:	Currently, multi-unit Probabilistic Safety Assessment is not required in Slovakia and no such assessment has been carried out. However, there are plans to perform of Multi-unit PSAs in order to understand the risks of multi-unit sites.	

74.	**Article** 14	**Ref. In National Report** 5.5 Safety Assessment and Verification
Question:	**Were probabilistic safety assessments performed for the EBO and EMO NPP units in the event of initiating events leading to simultaneous damage to nuclear fuel in the reactor and spent fuel pool? Was LRF/LERF assessment performed for such initiating events?**	
Answer:	In general, assessment of Large Release Frequency/Large Early Release Frequency is not performed for simultaneous damage of nuclear fuel in the reactor and spent fuel pool. However, for some particular cases was PSA analysis conducted when the possibility of Core Damage Frequency and Fuel Damage Frequency may be caused simultaneously. It was deemed necessary to conduct these analyses for certain project changes that could influence nuclear safety. In the case of Slovenske elektrarne, the change of the spent fuel heat exchanger was assessed in this manner.	

75.	**Article** 14	**Ref. In National Report** 5.5 Safety Assessment and Verification
Question:	**The legislative requirements of Slovakia for natural hazard assessment are established in Decree No. 430/2011 Coll. on Requirements for Nuclear Safety and Decree 33/2012 Coll. on Periodic Safety Review, which are based on the recommendations of the IAEA safety standards: Seismic Hazards in Site Evaluation for Nuclear Installations, No. SSG-9; Meteorological and Hydrological Hazards in Site Evaluation for Nuclear Installations, Specific Safety Guide No. SSG-18; and Issue T – Natural Hazards of the WENRA reference levels. Are there any plans to revise the above requirements for taking into account the updated IAEA recommendations: Seismic Hazards in Site Evaluation for Nuclear Installations, No. SSG-9 (Rev. 1), Design of Nuclear Installations Against External Events Excluding Earthquakes, No. SSG-68, and Issue TU: External Hazards of the WENRA reference levels (Report WENRA Safety Reference Levels for Existing Reactors. WENRA, 2020)?**	
Answer:	The legislative requirements of Slovakia for natural hazard assessment are established in Decree No. 430/2011 Coll. on Requirements for Nuclear Safety and Decree 33/2012 Coll. on Periodic Safety Review, which are based on the	

	recommendations of the IAEA safety standards: Seismic Hazards in Site Evaluation for Nuclear Installations, No. SSG-9; Meteorological and Hydrological Hazards in Site Evaluation for Nuclear Installations, Specific Safety Guide No. SSG-18; and Issue T – Natural Hazards of the WENRA reference levels. Are there any plans to revise the above requirements for taking into account the updated IAEA recommendations: Seismic Hazards in Site Evaluation for Nuclear Installations, No. SSG-9 (Rev. 1), Design of Nuclear Installations Against External Events Excluding Earthquakes, No. SSG-68, and Issue TU: External Hazards of the WENRA reference levels (Report WENRA Safety Reference Levels for Existing Reactors. WENRA, 2020)?

76.	**Article** 14	**Ref. In National Report** 5.5 Deterministic Safety Analysis, page 101
Question:	**"Calculations are performed for all operating modes and states of the NI. ... They include nuclear reactor and SNF pool". Has such an analysis been performed for the fresh fuel storage?**	
Answer:	Yes, the analyses verifying that the subcriticality of the fresh fuel is maintained and ensured for various fuel configurations and/or situations within the storage or during transport (e.g., scenarios with a flooded storage, dropout od fuel assemblies from the transport container etc.) are essential part of the safety report.	

77.	**Article** 17	**Ref. In National Report** 6 Safety of Nuclear Installations in Slovakia
Question:	**Section "Siting" provides information on the consideration of earthquakes, floods, and extreme meteorological conditions in hazard assessment for the Bogunice V2 and Mochovce NPPs. Was assessment performed for other possible extreme hazards at the sites, such as external fires, as well as combinations of internal and external events, in accordance with the recommendations of SSG-64 "Protection against Internal Hazards in the Design of Nuclear Power Plants" and SSG-68 "Design of Nuclear Installations Against External Events Excluding Earthquakes"? This question also concerns the consideration of man-induced hazards at the NPP sites.**	
Answer:	Yes, an assessment of all possible internal, external and man-induced hazards and their combinations has been carried out. These assessments are based on relevant IAEA documents, which are also reflected in the safety guides issued by the UJD SR (such as, "UJD SR Safety Guide 3/2022 – Requirements for the safety of nuclear installations in relation to external hazards", and "UJD SR Safety Guide 2/2022 Requirements for the safety of nuclear installations in relation to internal hazards").	

78.	**Article** 17	**Ref. In National Report** 6.1.2, Earthquakes
Question:	**In 6.1.2, it is stated: "Overall, the seismic resistance of power plants in the SR has increased several times compared to the original design, and is in line with current international standards and requirements. There are plans for advanced analyses to quantify the safety margins of key SSCs for beyond-**	

	design-basis earthquakes and development of seismic PSA." Which structural elements of the NPP have actually been reinforced (containment, pipelines, safety systems)?
Answer:	Seismic PSA is available for all NPPs which are in operation/under commissioning in Slovakia. Seismic PSAs are regularly updated. The last seismic PSAs for NPPs Bohunice and Mochovce are from 2024 and 2025, respectively. The seismic resistance of classified structures, systems and components (SSC) is assessed conservatively. Conservatism is built into the methodology for assessing the seismic vulnerability of classified SSC, the assessment criteria, the input data used and assessment conditions, the consideration of uncertainties and the assessment results. From a practical point of view, increasing the seismic resistance of classified SSC includes strengthening anchorages, installing motion dampers, various reinforcements, covers, changing the routing of pipes and cables, preventing inappropriate interactions of SSC during a seismic event or as a consequence of a seismic event, installing new seismically resistant equipment, creating a seismic island in the event of a seismic event and other design and operational measures. The seismic resistance of the NPPs is proven with a safety margin to the required level of resistance derived from the seismic hazard curves of the site. When it comes to reinforcing structural elements of the NPP, all safety elements involved in the shutdown and cooling of the unit in the case of a seismic event were evaluated. Those elements that did not show sufficient resistance to the increased value of the seismic load were reinforced. They mainly included less robust equipment such as pipes, I&C cabinets, cable holder structures, etc.

79.	**Article** 17	**Ref. In National Report** 37262
Question:	**Section 6.1.2 contains information with regard to the criteria for external hazards at the Jaslovské Bohunice and Mochovce sites, such as eathquakes, flooding, extreme meteorological conditions. Are combined external hazard scenarios considered, e.g. earthquake + flood, earthquake + fire?**	
Answer:	Yes, based on Atomic Act No. 541/2004 Coll. and the Decree No. 430/2011 Coll. on Requirements for Nuclear Safety all possible combinations of external hazards are considered during the siting of a nuclear installation and the selection of the site. The mentioned combinations (earthquake + flood and earthquake + fire) were evaluated in detail within PSA.	

80.	**Article** 17	**Ref. In National Report** 3, 5.5.1, 6.1.2
Question:	**Is the seismic model (PSHA) regularly updated in connection with the development of regional geodynamic data?**	
Answer:	Yes, the seismic model (PSHA) is regularly updated to consider state of the art methodology and regional geodynamic data. The PSHA has been usually developed by international foreign companies in close co-operation with domestic experts. Last update of PSHA was done for Bohunice and Mochovce sites in 2023. The latest PSHA shows a reduction in the seismic hazard of the Bohunice site compared to the previous assessments, which is due, among other things, to the use of new, more accurate regional data in the study. The reduction	

	in the predicted seismic hazard of the Bohunice site leads to an increase in the existing seismic safety margin for the SSC.

81.	**Article** 19	**Ref. In National Report** 6.3
Question:	**In Chapter 6.3 (para 6.3.3), it is stated: "...The Long-Term Operation Programme of the EBO V2 NPP was subject to further review during the 2017 PSR. Implementation of the PDP V2 and PSR corrective actions for the Long-Term Operation area is currently underway. Question: What are the main corrective measures developed for the long-term operation period of the Jaslovské Bohunice V2 NPP?**	
Answer:	The main corrective measures included the development of a new time limited ageing analyses (TLAAs) and the reassessment of existing TLAAs for plant LTO (for a minimum of 60 years), followed by corrective measures concerning the reassessment of ageing management programs and the development of new maintenance templates (developed in accordance with the INPO-913 methodology) + the preparation of a methodological document for maintaining the equipment qualification. The plant has to develop quality plans for selected piping systems as a whole.	

82.	**Article** 6	**Ref. In National Report** Chapter
Question:	**Information is provided on automatic fire extinguishing used at Mochovce NPP Unit 3 and 4 in cable ducts and rooms. What types of automatic fire extinguishing are used?**	
Answer:	Several types of automatic extinguishing systems are used at Units 3 and 4 of Mochovce. The system is divided into two subsystems for each unit - seismic resistant part and seismic non-resistant part. All of the following stable extinguishing systems are activated automatically. Water mist is used in cable areas. Foam extinguishing is used at diesel generators. Foam extinguishing is used to extinguish turbine oil. FM200 gas extinguishing is used to extinguish oil from the Main Circulation Pumps in room where they are stationed. Flood extinguishing (deluga) is used to extinguish transformers. In the building of active auxiliary operations, automatic CO2 gas extinguishing is used to extinguish solid flammable radioactive waste. A water curtain is used in the engine room, the purpose of which is not to extinguish but to prevent the spread of fire to other areas.	

83.	**Article** 6	**Ref. In National Report** 3.4 Nuclear Power Plant Mochovce Units 3 and 4
Question:	**It is noted that the power units are equipped with a common diesel generator designed to manage severe accidents, with the possibility of connecting to 6 kV buses of safety systems (a solution in the event of a complete power outage at the NPP). Based on the provided wording, in addition to DGs for each of the safety systems, the power units are equipped with a common powerful diesel generator designed to power safety systems in severe accidents, which**	

	increases the safety level of the NPP power units. Question: Please, provide information regarding the capacity, installation location, basic requirements for the common diesel generator.
Answer:	The concept of a common Severe Accident Management diesel generator (SAM DG) for all plants is designed as a two-units system, i.e. for each two units, one independent SAM DG with a electrical power of 2500 kW (for Mochovce 1 and 2 (EMO12) and Mochovce 3 and 4 (MO34)) / 1200 kW (for Bohunice 3 and 4 (EBO34)), voltage of 6.3 kV and frequency of 50 Hz is intended. The common SAM DG is installed outside the safety DG (3rd level of Defence in Depth) for all plants. The location of the SAM DG was chosen based on analyses of external and internal events, so that its functionality is not jeopardized during and after the event. The requirement for the DG is that it reliably supplies electrical energy to the SAM equipment during the entire spectrum of external and internal events at the NPP for a period of 72 hours, independently of other systems. The total supply of lubricant, fuel and other consumables must ensure the operation of the common SAM DG at nominal power for a period of at least 72 hours. The DG is air-cooled during operation, no support system for DG cooling is required. SAM DG is capable of long-term operation without interruption for at least 30 days. DG achieves high reliability at start-up and after a valid start it is shut down only by necessary protections. SAM DG for EMO 12 and EBO34 starts only following manual activation, it is not automatically started from an initiation event or other condition. SAM DG for MO34 starts following manual activation or automatically from voltage loss at the relevant substation.

84.	**Article** 13	**Ref. In National Report** 5.4.4, page 96
Question:	**The report states that IMS effectiveness is assessed through audits, checks by management, and self-assessment. Please clarify whether criteria and requirements have been established for the mutual differentiation and coordination of the scope of these three methods. Please also explain how it is verified and confirmed that their combined efforts provide full coverage of all critical IMS processes, while avoiding duplication.** **The goal is to specify that three verification methods mentioned in the text are coordinated and function effectively (without duplication).**	
Answer:	Audits, targeted self-assessments, and independent nuclear safety assessments are planned in advance. Targeted self-assessments are planned by line management depending on their needs and process rules. Audits and independent nuclear safety assessments are jointly planned in advance in accordance with process rules. Joint planning of audits and reviews ensures that they do not overlap. They may overlap with targeted self-assessments, but this means that line management has consciously decided to do so because it is familiar with the audit and review schedule. Such overlap is not considered inappropriate.	

85.	**Article** 15	**Ref. In National Report** Gaseous and Liquid Discharges, page 109
Question:	**How are the authorized annual releases and discharges determined?**	

Answer:	The dose constraint for a representative person for the design, construction, and operation of a nuclear installation for a single operator is 0.25 mSv per calendar year. For discharges into the atmosphere and into surface waters, the dose constraint for a representative person is set separately for individual discharges as follows: a) an effective dose of 0.2 mSv per calendar year for discharges into the atmosphere, b) an effective dose of 0.05 mSv per calendar year for discharges into surface waters. If there are several nuclear installations in one site or region that affect the dose to a representative person, this value applies to the total exposure from all nuclear installations at the site or in the region (Act No. 87/2018 Coll. on Radiation Protection). The determination of a representative person and the assessment of their exposure must be carried out on the basis of information about the source of ionizing radiation, including the expected radionuclides released into the environment from the workplace and their activities per calendar year. The authorized radiological limit that restricts the discharge of radioactive substances during normal operation is defined as the effective dose to a reference member of the public living in the sector where the highest exposure is caused by radioactive substances released from the NPP. The authorized radiological limit for the effective dose to a reference member of the public is selected to transparently ensure and demonstrate compliance with the established dose constraint for public exposure caused by all nuclear installations operated at the site. Primary control of discharged radioactive substances is ensured by measuring the activity of airborne effluents in ventilation stacks and in wastewater. Therefore, in addition to the authorized radiological limit for public exposure, annual reference levels are also established for directly measurable quantities of discharged substances. The annual reference levels are set for the activity discharged per calendar year in a sufficiently conservative manner to ensure that, by complying with them, the authorized radiological limit is not exceeded.

86.	**Article** 15	**Ref. In National Report** page 109-110
Question:	**Are there measurements of carbon-14 in releases? Are the releases of carbon-14 and tritium taken into account in the calculations of radiation doses to the public?**	
Answer:	The releases of carbon-14 and tritium are monitored through online measurements in ventilation stacks and online wastewater monitoring carried out by the operation of nuclear facilities. Doses are then calculated based on these discharges using ESTE software. The PHA SR does not measure carbon-14 in water releases; instead, it is monitored in aquatic vegetation, fodder, and cereals in areas surrounding nuclear installations.	

87.	Article 15	Ref. In National Report 5.6.3, Page 112
Question:	**Are there special restrictions on exposure of pregnant women, students, etc.?**	
Answer:	Yes, PHA SR Radiation Protection Policy for Pregnant Women, Breastfeeding Women, Pupils and Students is in accordance with Act No. 87/2018 Coll. and contains these principles: Pupils and Students: Pupils under 16 years of age are subject to the same dose limits as members of the public. Pupils and students aged 16–18 years shall not exceed the following annual dose limits: Effective dose: 6 mSv Equivalent dose to the lens of the eye: 15 mSv Equivalent dose to the skin: 150 mSv (average over any 1 cm^2) Equivalent dose to the extremities: 150 mSv Pregnant Women: Pregnant women are subject to public dose limits: Effective dose: 1 mSv per calendar year The employer or operator shall immediately adjust working conditions after notification of pregnancy to ensure that the effective dose to the unborn child does not exceed 1 mSv for the remainder of the pregnancy. Pregnant women shall not work in controlled areas or perform work where fetal exposure may exceed 1 mSv. Breastfeeding Women: Breastfeeding women working with open radioactive sources shall not work in controlled areas. Working conditions shall be adjusted to minimize the risk of contamination, intake of radionuclides, and exposure of the breastfed child. Exceptional Exposure: Pupils, students, Category B workers, pregnant women, and breastfeeding women shall not be subject to exceptional exposure. Medical Exposure: Special care shall be taken when performing medical exposure on pregnant or breastfeeding women. Pregnant and breastfeeding women shall be informed of potential risks, and such information shall be documented. Breastfeeding shall be interrupted for the period determined by the attending physician after administration of radioactive substances. If medical exposure occurred before pregnancy was known, the fetal dose shall be assessed by a qualified expert. Controlled and Restricted Areas: Pregnant and breastfeeding women and persons under 16 years of age shall not enter controlled or restricted areas, except when undergoing medical exposure. Pregnant women may enter restricted areas only in urgent diagnostic or therapeutic cases. Accompanying Persons: Pregnancy status shall be verified for accompanying women of reproductive age. Pregnant women shall not accompany or care for patients during medical exposure.	

88.	Article 11	Ref. In National Report § 5.2.3
Question:	**Apart from the required qualifications and professional competencies of the technical staff, the licensee must assess the number of staff required to perform the activities and guarantee a "sufficient workforce". What is the frequency of this assessment and which factors are taken into account? Is this challenged by UJD SR?**	
Answer:	The nuclear facility operation license holder must meet the conditions for issuing a consent or permit specified in Section 7(2)(c) of the Atomic Act No. 541/2004 Coll. (demonstration of a sufficient number of permanent employees with the required expertise). Furthermore, the license holder subsequently carries out a PSR every 10 years. The license holder also sends twice a year to the UJD SR the report with the number of vacant positions with impact and direct impact on nuclear safety. The UJD SR also carries out inspections regarding the sufficient number of employees and vacant positions, e.g.: • In 2018 the inspection was carried out at the headquarters of Slovenské elektrárne (SE) focused on verification of the occupancy of jobs with impact on nuclear safety according to the SE systematization, • In 2024 the inspection was carried out at the headquarters of SE focused on the verification of the number of permanent employees and the implementation of organizational changes. The UJD SR approves organizational changes at the license holder. Every cancellation, merger or creation of a job function is closely monitored by UJD SR. Reducing or increasing the number of job positions in job functions is also thoroughly assessed and evaluated, especially those with impact and direct impact on nuclear safety.	

89.	Article 14	Ref. In National Report §5.5.1 p 102 Periodic Safety Review
Question:	**W.r.t. the PSR, the report mentions 15 resp. 16 areas of assessment (safety factors), where IAEA Safety Guide SSG-25 only mentions 14 safety factors. What are the additional safety factors considered in the Slovakian PSRs?**	
Answer:	Decree 33/2012 Coll. on Periodic Safety Review recognizes 15 areas of periodic safety review. The difference with SSG-25 being the 15th area: long term safe operation of nuclear installation. In UJD SR Guide BN 1/2020, the area of operating procedures has been divided into two subareas.	

90.	Article 17	Ref. In National Report § 6.1.1
Question:	**The document mentions in § 6.1.1 a new two-step siting process (siting authorization + building permit). How does this differ from the previous process, and what are the expected benefits of it?**	
Answer:	Until the entry into force of Act 363/2021 Coll., amending and supplementing the Atomic Act No. 541/2004 Coll., UJD SR issued consent for the location of the construction of each type of nuclear installation. After the amendment, UJD SR issues a permit for the location of a nuclear installation, but only for the reactor type of installations, from the point of view of nuclear safety, physical protection	

	and radiation protection. As a consequence, one additional step of the administrative procedure has been added, i.e. the siting will be a two-step procedure. According new Construction Act for completely new nuclear facilities, the siting process according Construction Act will be integrated into the building permit procedure, conducted by UJD SR acting as another building authority. By centralizing the proceedings within a single authority (UJD SR), the need for complex coordination between general regional building offices and the specialized regulator is removed. UJD SR possesses the highest level of expertise to assess the unique requirements of a nuclear project, where structural and safety aspects are inherently linked. Merging the siting and building permit procedures into a single integrated process under the leadership of one authority significantly shortens timelines. It eliminates the "waiting periods" for opinions from various other offices to the extent seen in the past, thereby minimizing the risk of administrative bottlenecks.

91.	**Article** 17	**Ref. In National Report** § 6.1.2
Question:	**In § 6.1.2 the following is mentioned "The original design value for horizontal PGA for NPP EBO V2 was increased from 0,025 g through PGA = 0,25 g (in 1995), up to the currently valid value of PGA = 0,344 g, which corresponds to the updates completed in 2008. Based on the results of the Probabilistic Seismic Hazard Assessment from November 2023, a new PGA value of 0,2654 g was evaluated." Could you clarify what is the final retained PGA value (0,344 or 0,2654)? Could you clarify as well what new data or methodologies led to this revision? Does Slovakia plan for further seismic upgrades/updates (e.g., beyond-design-basis earthquake analysis, seismic PSA)?**	
Answer:	An updated seismic PSA (SPSA), in line with updated international standards, was performed in 2024, and subsequently approved by the UJD SR. In order to maintain a conservative approach, the original higher value of the horizontal PGA at the surface level of 0,344g was retained and used for the updated SPSA. With regard to the new hazard value of horizontal peak ground acceleration (pga) at the surface level of 0,2654g, as resulted from the updated PSHA for the NPP EBO site performed in 2023, lowering of the hazard value may be attributed primarily to the use of more robust methodology for assessment of the local effects and site response analyses.	

92.	**Article** 17	**Ref. In National Report** § 6.1.2
Question:	**In § 6.1.2 it is mentioned that the evaluations of the effects of extreme meteorological conditions in the stress test report are mostly qualitative (in particular in NPP EBO V2), based on operating experience and on engineering judgment. Are there any plans to quantify these risks (e.g., PSA)? How is climate change taken into account for extreme meteorological conditions?**	
Answer:	A) The impacts of meteorological conditions are assessed and quantified deterministically in separate analyses such as strength calculations and static assessments, etc. The results of such analyses are subsequently also used as inputs for vulnerability analysis directly within the PSA.	

	B) Meteorological studies are processed by statistical estimates of extreme values exclusively by analyzing historically recorded meteorological data. No "artificial" assumptions and forecasts related to climate change are additionally used to determine extreme phenomena. At the same time, however, it is true that the impacts of a changing climate are present and quantified in the measured data, which is naturally reflected in the determined characteristics. These include, in particular, an increase in average atmospheric temperatures, a decrease in air humidity and a decrease in precipitation, etc. A new assessed phenomenon is the tornado phenomenon, which practically did not occur in Slovak region in the past, but its occurrence can no longer be neglected due to its presence in the region in recent years.

93.	**Article** 17	**Ref. In National Report** § 6.1.2
Question:	**Could you clarify what is meant with "In addition, for situations without a time frame for flooding safety related components and systems, it has been appreciated that the time margin to flooding of secured power supply is more than 72 hours." in § 6.1.2?** **What emergency measures are implemented to respond within this timeframe (72h)? How is this timeframe judged sufficient?**	
Answer:	Safety of NPP is evaluated against the performance of critical safety functions; availability of electrical power, coolant, other materials and NPP staff should be demonstrated for specified time period. Implemented measures are provided in the emergency operating procedures, SAMGs and procedures for external hazards. The time interval of 72 hours applied for three redundant systems was determined in basic design by the original designer of WWER.	

94.	**Article** 17	**Ref. In National Report** § 6.1.2
Question:	**The document mentions logistics for emergency preparedness during extreme weather. Did the stress test lead to any update of the on-site emergency plan?**	
Answer:	As part of the stress tests, the Mochovce and Bohunice NPPs were assessed for vulnerability to selected external extreme events. Based on the conclusions, procedures were developed for identifying external risks resulting from extreme climatic conditions, adopting and implementing preventive measures to ensure the reliability of equipment, and mitigating the consequences of such climatic conditions. Initial events were added to the emergency procedures "Emergency classification of events at nuclear facilities" on the basis of which an extraordinary event at a nuclear facility would be classified and the components of the Emergency Response Organization would be called in: Extreme external initiating events: Major natural, meteorological, and other disasters such as earthquakes, tornadoes, extremely strong winds, extremely high air temperatures, extremely low air temperatures, lightning activity, frost, extreme rainfall, extreme snowfall (including snowstorms).	

95.	Article 18	Ref. In National Report §6.2.1
Question:	**Does the new Construction Act require a quality assurance program for the follow-up of a new construction? If so, how a non-conformity is handled?**	
Answer:	According to Section 31 (5) of the Construction Act, the construction of a reserved structure shall be carried out by a contractor who, throughout the entire duration of the construction works on the reserved structure, meets the competence requirements pursuant to the certification scheme: "National Document: Requirements for bodies performing audits and certification of the management system of contractors of reserved structures." A reserved construction is a building or an engineering structure that is technologically demanding or structurally unusual, and which—in terms of the scope of construction works, construction technology, and construction products used—places increased demands on the organization and coordination of construction activities and on the necessary technical equipment of the contractor. The construction of a nuclear facility shall also be considered a reserved construction. The Construction Act mandates that the construction log be maintained electronically within the information system managed by the Ministry (or the relevant authority). Since UJD SR acts as the special building authority for nuclear installations, it has direct access to this digital log. This enables inspectors to monitor entries regarding material quality, test results, and technological procedures immediately after they are recorded by the contractor. Furthermore, the authorization holder under the Atomic Act must ensure that not only themselves but also each of their suppliers (contractors) has an approved and verified quality system that complies with the specific requirements for nuclear safety. If a non-conformity (a deviation from the approved design or quality standards) is identified during construction, the following procedure applies: • Every non-conformity must be recorded in the authorization holder's system. If the non-conformity impacts nuclear safety, the holder is obliged to inform UJD SR immediately. • The designer and the building supervisor assess the severity. A decision must be made whether to repair the item, replace it, or (in exceptional and documented cases) accept it "as-is," provided it is proven that there is no negative impact on safety. • The construction inspector has the authority to order a stop to the works if a non-conformity threatens safety or if the builder fails to respond to corrective demands. Under the new Act, significant penalties can be imposed for failing to remedy non-conformities, and the facility cannot be commissioned (receive a final building use permit) until compliance with the design is fully demonstrated.	

96.	Article 18	Ref. In National Report §6.2.1
Question:	**Would SMR also be subject to the new Construction Act?**	
Answer:	Yes, small modular reactors (SMRs) would be subject to the new Construction Act, provided that they meet the characteristics of a structure pursuant to Section 2 of the Construction Act. However, SMRs are considered nuclear facilities and are therefore subject to specific legislation in the field of nuclear safety. Such	

	specific legislation may, in relevant matters, apply with priority as lex specialis in relation to the general Construction Act. New specific legislation for SMR has not been adopted yet and we also don´t plan to do so.

97.	**Article** General	**Ref. In National Report** § 2 Concept of the Use of Nuclear Resources in Slovakia (p.16)
Question:	**SR uses and plans to continue to use nuclear energy in its energy mix, with nuclear safety being an absolute priority. Safety of NIs, in terms of external factors, seismic resistance, as well as in terms of other aspects of safety, is at a required level and permanently monitored. Level of nuclear safety is regularly, comprehensively and systematically evaluated in the context of operational experience and the latest knowledge of science and research, and measures are being adopted continuously to increase safety.** **Can you please comment on, or indicate, the principles underlying the implementation of improvements when these involve significant changes to the safety architecture of the installation? Is this done continuously, if maintaining the operating condition of the installation allows it, or only during the scheduled shutdowns of the plant?**	
Answer:	Changes to safety architecture are thoroughly planned by license holder and when the so-called project change concerns classified equipment, they are approved by UJD SR. These usually comprise preparatory works, some of which can be executed during normal operation and substantive changes that can only be implemented during general outage. Decision on execution of separate parts of change is done on case-by-case basis in such a manner that L&Cs are met and safety margins are maintained.	

98.	**Article** 6	**Ref. In National Report** § 3.2 Nuclear Power Plant Jaslovské Bohunice V2 (Units 3 and 4) §3.2.1 Programmes of Nuclear Power Plant Bohunice V2 Safety Improvements – Historical Overview (p.23)
Question:	**The Programme for Modernisation and Safety Improvements of NPP EBO V2 (Modernization of V2), which started in 1994, did not only focus on addressing safety issues, but also included addressing operational issues related to the 15-year operation of NPP EBO V2 - the physical wear and tear and moral obsolescence of the equipment, which caused problems, especially for the control systems and electrical systems, with regard to the operational reliability of the equipment, spare parts and servicing..** **Could you please indicate what is the meaning of this notion of "moral obsolescence"?**	
Answer:	Definition of Moral Obsolescence: Moral obsolescence in nuclear energy is: A condition in which a NPP component is technically functional but ceases to meet current technological, safety, diagnostic, or integration requirements for nuclear operations, and therefore is no longer optimal for long-term and safe use. It is a form of obsolescence in which the equipment itself does not show physical	

	degradation, but its technological, functional, or conceptual level no longer corresponds to currently recognized requirements for nuclear safety, reliability, cybersecurity, or operational optimization.

99.	**Article**	**Ref. In National Report**
	6	§ 3.2 Nuclear Power Plant Jaslovské Bohunice V2 (Units 3 and 4) §3.2.1 Programmes of Nuclear Power Plant Bohunice V2 Safety Improvements – Historical Overview § Program of Units Power Uprate (p.25)
Question:	**During power uprate, the following design modifications were implemented:** **a) Improving the efficiency of the thermal cycle, which meant modifications to the secondary circuit equipment….** **c) Increasing the thermal power of the reactors, the essence of which was to increase the parameters of the reactors comprising the reactor unit as a whole, while maintaining nuclear and technical safety, and addressing the legislative requirements.** **The increase in power output likely led to a reduction in margins. Could you please indicate if this reduction has been quantified in relation to the 7% increase in thermal energy production? Has this potential reduction in margins been offset by the design modifications mentioned in the text above?**	
Answer:	During the power uprate, the 7% increase in thermal output did indeed require a detailed reassessment of all safety and design margins. This evaluation was performed as part of the overall licensing and safety justification process. Yes, the reduction in margins resulting from the uprate was quantified. For each relevant parameter (e.g., DNBR, fuel and cladding temperatures, pressurizer capacity, primary and secondary pressure limits, and safety system performance), updated safety analyses were performed using the new thermal hydraulic and neutronic input data corresponding to the higher power level. These analyses demonstrated that although certain margins decreased as expected due to the higher thermal load, the remaining margins remained within the acceptable limits defined by both design criteria and regulatory requirements. Furthermore, the design modifications implemented during the uprate effectively compensated for the potential loss of margin. Improvements in the secondary circuit efficiency and the adjustments to reactor unit parameters (such as upgraded components and optimization of operating conditions) were specifically intended to offset the impact of the higher power operation. As a result, the overall safety envelope of the plant was preserved, and in some areas even enhanced. In summary: The impact of the 7% power increase on design and safety margins was quantitatively evaluated. Some margins were reduced, but all remained within acceptable safety limits. The design modifications introduced during the uprate compensated for these reductions and ensured continued compliance with all nuclear and technical safety requirements.	

100.	Article	Ref. In National Report
	6	§ 3.2 Nuclear Power Plant Jaslovské Bohunice V2 (Units 3 and 4) §3.2.1 Programmes of Nuclear Power Plant Bohunice V2 Safety Improvements – Historical Overview § Second Periodic Safety Review of NPP EBO V2 (2016) (p.28) § 3.3 Nuclear Power Plant Mochovce – Units 1 and 2 §3.3.1 Programmes of Safety Improvements at NPP EMO 1,2 – Historical Overview (p.31)
Question:	**p.28: Findings have been identified in the individual areas and one or more corrective actions were proposed for each of these findings. Based on the analysis of corrective actions resulting from the identified findings and for elaboration of integrated plan for their implementation, a total of 12 groups of actions were created with 86 corrective actions in total.** **p.31: Within the framework of the area-by-area assessment, findings were identified and one or more corrective actions were proposed, 12 groups of actions were developed with 68 corrective actions in total.** **Please can you provide additional information on this categorization in 12 groups? What are the key criteria that allow the categorization? Are the 12 groups the same for both plants?**	
Answer:	12 groups of actions are these: Accident Management: Accident management, emergency planning, emergency committee support Design Reasoning: Design reasoning, protection in depth concept implementation, implementation of safety functions Equipment Status: Status of components and systems Demonstration of conformity with nuclear safety: Demonstration and monitoring of nuclear safety, operating experience utilization Quality and Management: Quality, management documentation, administration and organization Human Factor: Management of human sources and training Configuration management: Management of modifications, documenting and evaluating of modifications Operational documentation: Operational procedures, operational documentation management Fire protection: Fire resistance and fire risk assessment Design extended conditions „V“: DEC V – measures related to extended design conditions that are reasonably clear based on current knowledge and/or can be implemented in a relatively short time Design extended conditions „W“: DEC W – measures related to extended design conditions that are currently methodologically unclear and/or require more time for implementation Regulatory requirements: Additional actions defined by regulatory bodies (e.g. UJD SR, PHA SR,...). Criteria for categorization are linked with structure of process management of NPPs operator and with optimal management of fulfilment of corrective actions. The same set of groups was used during PSR at Bohunice NPP and at Mochovce NPP.	

101.	Article 6	Ref. In National Report § 3.3 Nuclear Power Plant Mochovce – Units 1 and 2 3.3.1 Programmes of Safety Improvements at NPP EMO 1,2 – Historical Overview (p.29)
Question:	**The operator of the plant (SE, a.s.) in cooperation with VUJE, a. s. developed a set of technical specifications for 87 safety measures to be implemented under the "NPP Mochovce Nuclear Safety Improvement Program", with taking into account specific measures as identified by the RISKAUDIT and Safety Improvement of Mochovce NPP Project Review Mission Reports and experience with NPP EBO V2 and NPP Dukovany units. This has introduced certain differences between the "NPP Mochovce Safety Improvement Program" and the IAEA document "Safety Issues and their Ranking for NPP of WWER-440/V213 type, IAEA EBP-VVER-03" (certain measures have been added characterized as no-category measures).** **Following table provides a brief description and examples of some areas of the safety measures.** **These measures certainly improve the safety level of the installation. In a logic of graded approach, with an effort that must be proportionate to the expected benefit, could you please indicate if there has been a quantification of the improvement achieved, for example through a PSA?**	
Answer:	Based on the outcomes of the "NPP Mochovce Nuclear Safety Improvement Program", reflecting on documentation: Mission for safety improvements checking on Mochovce NPP (IAEA WWER-SC-102, September 1994) and Safety improvements evaluation for Mochovce NPP rev. 16, Risk audit report, IPSN/GRS, December 1994, the Level 1 PSA Study was performed, which considered both full power (FPSA) and shutdown and low power conditions (SPSA). It also evaluated the basic design and the benefits of all Safety Measures and improvements, which were identified by the Improvement Program, and incorporated them before the start-up of the unit 1. The second PSA model was prepared for Mochovce unit 1 status after the unit start-up, including implemented Safety Measures (the model representing unit 1 status during the first year of its operation). The third PSA model was performed for Mochovce unit 1 status after the unit first refuelling. The results showed that the evaluation, selection and implementation of the Safety Measures enhanced the safety level of the NPP. Since then, Mochovce NPP underwent further safety improvements, based on various national and international inspections. Based on the results for CDF and LERF in PSA studies, a significant improvement has been made in last three decades.	

102.	Article	Ref. In National Report
	6	§ 3.3 Nuclear Power Plant Mochovce – Units 1 and 2 3.3.1 Programmes of Safety Improvements at NPP EMO 1,2 – Historical Overview Periodic Safety Review of NPP EMO 1,2 (PSR – 2007) (p.31)
Question:	**Fig. 5 Illustration of safety improvements on NPPs in operation (source: ÚJD SR) Could you please indicate if there has been any monitoring and quantification of the improvements achieved based, for example, on criteria such as the reduction of initiating events, or the frequency of occurrence of core degradation?**	
Answer:	A suitable tool for the requested monitoring and quantification is, among others, PSA. If we clean the historical time series of PSA of Mochovce 1 and 2, results from the PSA model development itself (modifications related to model improvement and gradual addition of new types of hazards), it is possible to state a constant decrease in risk represented by a decrease in CDF and LERF values. Such a trend can be attributed to the impact of the modernization and implementation of safety improvements during the operation of the Mochovce and Bohunice NPPs.	

103.	Article	Ref. In National Report
	6	§ 3.3 Nuclear Power Plant Mochovce – Units 1 and 2 3.3.1 Programmes of Safety Improvements at NPP EMO 1,2 – Historical Overview Seismic Reinforcements (p.32)
Question:	**Cf. § 3.3 Nuclear Power Plant Mochovce – Units 1 and 2** **3.3.1 Programmes of Safety Improvements at NPP EMO 1,2 – Historical Overview** **Seismic Reinforcements** **Seismic effects are specified and defined in the document "Proposed parameters of seismic ground motion for EMO3,4"", prepared by VUJE, a. s., for reinforcement of secondary circuit of NPP EMO1,2 to a new seismic resistance value. Another document for specifying seismicity was the "Seismic Concept for Seismic Reassessment of EMO Units 1 and 2", from August 2013.** **Cf. § 3.4 Nuclear Power Plant Mochovce Units 3 and 4** **The following table provides a brief description and examples of some areas of safety measures.** **…** **- Seismic upgrade: - upon request of ÚJD SR, the PGA for the seismic upgrade of MO 3,4 has been increased to 0,15 g.** **Within the IAEA SSR 2/1 Rev.1 the Requirement 17 Internal and external hazards raise a specific indication concerning the Extreme External Hazards, that is important for the design…** **§5.21A. The design of the plant shall also provide for an adequate margin to protect items ultimately necessary to prevent an early radioactive release or a large radioactive release in the event of levels of natural hazards exceeding those considered for design, derived from the hazard evaluation for the site.**	

	Could you please indicate how the margin within the design / construction of the MO3 & MO4, corresponds with this recent requirement?
Answer:	The increase in the seismic resistance of the Mochovce 3 and 4 NPP (MO34) was implemented during the construction of the MO34. The original seismic design was revised according to internationally accepted methodology and the seismic resistance of classified systems, structures and components (SSC) was increased to the required level derived from the current seismic characteristics of the site. The seismic resistance of classified SSC is assessed conservatively. Conservatism is built into the methodology for assessing the seismic vulnerability of classified SSC, the assessment criteria, the input data used and assessment conditions, the consideration of uncertainties and the assessment results. From a practical point of view, increasing the seismic resistance of classified SSC includes strengthening anchorages, installing motion dampers, various reinforcements, covers, changing the routing of pipes and cables, preventing inappropriate interactions of SSC during a seismic event or as a consequence of a seismic event, installing new seismically resistant equipment, creating a seismic island in the event of a seismic event and other design and operational measures. The seismic resistance of the MO34 is assessed deterministically and probabilistically. The seismic resistance of the MO34 is proven with a safety margin to the required level of resistance derived from the seismic hazard curves of the site. It can also be stated that, even in terms of the seismic resistance of the equipment, the approach was adopted within the completion of MO34 to ensure the highest possible values of seismic capacity for the systems, structures and components of the safe shutdown path, and if it is technically and economically feasible to go beyond the requirements. The minimum High confidence of low probability failure (HCLPF) values for various systems, structures and components of the safe shutdown path are chosen as follows: System/structure, HCLPF component [g] Building structures 0.15 Mechanical equipment 0.16 Electrical equipment 0.175 I&C equipment 0.30 A similar procedure was followed in the case of other external hazards (meteorological phenomena, etc.)

104.	**Article**	**Ref. In National Report**
	6	§ 3.6 Interim Spent Fuel Storage Facility 3.6.1 Description of Technology (p,39)
Question:	**ISFS is a nuclear facility owned by Jadrová a vyraďovacia spoločnosť, a. s. (JAVYS, a. s.) and located in Jaslovské Bohunice, designed for the long-term storage of spent fuel of VVER 440 type produced by nuclear units operatedin Slovakia.** **Could you please indicate what is the planned duration of the storage in the ISFS, before the spent fuel moves to a final disposal facility?**	
Answer:	Interim Spent Fuel Storage (ISFS) is projected for 100 years operation. It is currently foreseen that spent fuel will be stored in the ISFS until the construction of a deep geological repository in Slovakia. Milestone for operation of Deep Geological Repository is 2065.	

105.	Article	Ref. In National Report
	6	§ 3.6 Interim Spent Fuel Storage Facility 3.6.1 Description of Technology (p,39)
Question:	**Fig. 7 Progressive filling of ISFS with spent fuel as at 31 December 2024 (source: JAVYS, a.s.)** **The figure may need additional clarifications. The indicated limit (dotted line) seems to refer to the wet part of ISFS (14112 SNF). The "No. of stored fuel assemblies" is for the totality or just for the "wet part"?** **Please can you provide information about the Dry part of the ISFS and the corresponding stored SNF?**	
Answer:	"No. of stored fuel assemblies" shown in the Figure (blue area) refers to the entire Interim Spent Fuel Storage (ISFS). As of 31 December, 2024, a total of 13,984 fuel assemblies were stored in the ISFS. Dotted line provides an illustration of increase of storage capacity with addition of dry storage. "Dry part" is extend for another 10 115 SNF. SNF in dry part is be stored in special hermetical canisters with capacity 85 FA. Cooling is ensured thorugh passive air circulation as explained in Section 3.6.1 of National Report Description of Technology. As of 31 December, 2024, 255 fuel assemblies were stored in the dry part of the ISFS. Information about the dry part of the ISFS is provided in Section 3.6.1 of National Report Description of Technology. As of 31 December, 2024, 255 fuel assemblies were stored in the dry part of the ISFS.	

106.	Article	Ref. In National Report
	6	§ 3.7 Radioactive Waste Treatment and Conditioning Technologies (p.42)
Question:	**The Integral RAW Storage Facility is a facility built at Jaslovské Bohunice site. It serves for the storage of solid and solidified RAW generated during the decommissioning of NPP A1 and NPP EBO V1. The IS RAO was built to provide sufficient capacity for the needs of long-term or interim storage buffer of RAW arising from the decommissioning of the NPP. The IS RAO Facility consists of a stand-alone modular hall-type building, which was put into active operation in February 2018.** **Could you please indicate whether you mean RAW only "… arising from the decommissioning of the NPP", or rather "… AW arising from operation and decommissioning of NIs"?**	
Answer:	Integral Storage of Radioactive Waste Facility is used for storage of the following radioctive waste (RAW) arising from the A1 and V1 NPPs decommissioning as follows: - Solid or solidified RAW before their further treatment, - Solid or solidified RAW until their permanent final disposal, - Solid or solidified RAW for a period, during which their activity goes down to a level that they can be released into the environment. Therefore, Integral RAW Storage Facility is not designed for the storage of RAW arising from operation of Nuclear Installations.	

107.	Article	Ref. In National Report
	12	§ 5.3 Human Factor 5.3.3 Methods of Detecting and Correcting Human Errors System of Corrective and Preventive Actions (p.91)
Question:	**To improve safety culture and self-assessment, Safety Culture Action Plans are developed by the license holders and are evaluated annually and submitted to the plant management for approval. The action plan has general binding force for the license holder. Safety culture indicators are defined for evaluation. Could you please provide further information on these Safety Culture Action Plans and indicators?**	
Answer:	Safety Culture Action Plan is a general term for a set of measures proposed to strengthen safety culture based on the results of surveys and analysis of internal events. It can be issued, for example, as a plant manager's regulation or a Chief Nuclear Officer regulation after discussion with plant management. It contains measures, deadlines for implementation, and responsible parties. It must focus on identified employee behaviours that are not in line with the traits and attributes of a healthy nuclear safety culture according to WANO (or INPO). The indicators represent a set of indicators that characterize selected processes in the company (plant) and are linked to the relevant attributes and traits of a healthy nuclear safety culture according to WANO (INPO). These include indicators for processes such as personnel training, safety (radiation protection, nuclear safety, occupational health and safety, etc.), corrective and preventive systems, personnel training, human error prevention, work management, utilization of operating experience, and others. The indicators have their own metrics and are reviewed regularly. A comprehensive review of the safety culture assessment and monitoring system is currently underway to bring it into line with the latest best practices of global operators.	

108.	Article	Ref. In National Report
	14	§ 5.5 Safety Assessment and Verification 5.5.1 Safety Assessments of Nuclear Power Plants in Operation Update of natural hazards characteristics
Question:	**The update of the meteorological hazard characteristics will be carried out for the Jaslovské Bohunice and Mochovce sites in 2022. The reinforcement of the NPP EMO 1,2 to a new higher level of seismic hazard resistance is currently underway and will be completed by December 2022.… Can you confirm the update has been completed? Or is another year meant?**	
Answer:	We can confirm that the mentioned activities were successfully completed in 2022. Slovak Hydrometeorological Institute (SHMÚ) continuously monitors the meteorological situations at NPP sites in Slovakia, and regularly updates its report on weather, meteorological and hydrological conditions for these sites. The last summary SHMÚ reports were issued in March 2022 for Jaslovské Bohunice site and in April 2022 for Mochovce site. Weather trends and data are used to derive the frequency and intensity of extreme meteorological and hydrological conditions. The return periods of extreme conditions are evaluated by SHMÚ, Slovenske elektrarne, and other organizations in Slovakia, and are used to	

	validate the assessments. Based on the data, the analyses of the sites are performed and the resistance of the NPPs to extreme external conditions is determined. The results are reflected within PSA studies on external hazards for the NPPs. The last updated PSA was issued in April 2024 for Bohunice NPP, and in October 2024 for Mochovce NPP. The reinforcement of the NPP Mochovce 1 and 2 to a new higher level of seismic hazard resistance was successfully completed by the end of December 2022, i.e., by the deadline requested in the UJD SR Decision. The progress of the reinforcement work and efforts (analysis/re-assessment and verification of seismic resistance for equipment and civil structures, proposal and design of reinforcement measures, if necessary, implementation of the measures and verification of their implementation) had been continuously monitored and inspected by UJD SR and documented in the outputs from the set of inspections. The last of the inspections (completed in May 2024) verified and confirmed that the conditions of the UJD SR Decision had been met.

109.	**Article** 14	**Ref. In National Report** § 5.5 Safety Assessment and Verification 5.5.1 Safety Assessments of Nuclear Power Plants in Operation Climate change and its impact on the safety of NPPs (p.100)
Question:	**Yet another example is the adoption of regime measures to prevent the negative impact of fluctuations in water flow (low water flow) in the Hron River on the safety of NPPs.** **Can you elaborate on these "regime measures to prevent the negative impact of fluctuations in water flow (low water flow) in the Hron River on the safety of NPPs"? What are the implications in practice?**	
Answer:	As indicated in the national report, the impact of climate change on meteorological and/or hydrological conditions at NPP sites is slow, what provides good conditions for its careful monitoring and sufficient timeframe for applying relevant measures. Various measures have been prepared in advance, including the mentioned regime measures related to a decreased water flow in the Hron River. The main strategy of these measures is focused on effective use of available cooling sources. Depending on their availability the power of the NPP units might be decreased as needed, up-to their shut-down, if necessary. Besides that, other regime provisions are aimed on coolant delivery to the site as needed (from other relevant sources than river, i.e., dam and/or lake).	

110.	**Article** 14	**Ref. In National Report** § 5.5 Safety Assessment and Verification 5.5.1 Safety Assessments of Nuclear Power Plants in Operation § Probabilistic Safety Assessment (p.101)
Question:	**PSA for NPP EBO V2 was updated in 2025 (PSA Level 1 and 2). The scope of the PSA has been summarized; however, the results were not**	

	discussed. Can you please provide additional information on the results of these PSA?
Answer:	Main PSA results for NPP Bohunice V2 from 2025 (note: all presented results include damage of nuclear fuel in the reactor during full power, low power and shutdown and spent fuel pool): The calculated core damage frequencies are: Internal initiating events and hazards – 5,67E-06 per year Seismic event – 2,26E-05 per year Other external hazards – 1,72E-05 per year The calculated large early release frequencies are: Internal initiating events and hazards – 1,33E-06 per year Seismic event – 1,31E-05 per year Other external hazards – 5,15E-06 per year Other external hazards include, for example, extreme wind, extreme temperature, extreme snow, etc.

111.	**Article** 14	**Ref. In National Report** § 5.5 Safety Assessment and Verification 5.5.2 International Nuclear Safety Reviews OSART mission in NPP EBO V2 (2010-2012) (p.103)
Question:	**Objective: to review operating procedures in areas, such as the management of organization and administration, operation, maintenance, technical support, radiation protection, operating experience, chemistry and emergency planning and readiness, including the long-term operation programs.** **Outcome of the 2012 Follow-up OSART mission: 9 issues identified were solved, in 10 issues satisfactory progress has been achieved to date, and there was no such issue, where there would be lack of progress.** **Given that, within the report, the characters are not italicized, could you please indicate what is the current status of these 10 issues? Are they closed/resolved?**	
Answer:	All issues identified during OSART 2009 have been closed.	

112.	**Article** 14	**Ref. In National Report** § 5.5 Safety Assessment and Verification 5.5.2 International Nuclear Safety Reviews Pre-OSART Mission at NPP EMO 1,2 (p.104)
Question:	**Objective: to review the readiness for the commissioning of Unit 3 and to review the level of readiness of the NPP for future operation (including the procedures in place at EMO NPPs 1,2, which are or will be applied to EMO Unit 3 as well).** **Outcome of the Follow-up Pre-OSART mission in 2021: Lot of measures of 2019 mission implemented; further efforts are required to fully implement some actions drawn up after the 2019 mission.** **Could you please indicate what is the status of the implementation of these actions?**	
Answer:	The conclusion of the pre-OSART Follow-up Mochovce Unit 3 was that 5 of 14 recommendations and 5 of 8 suggestions were fully resolved, while 9 of 14	

	recommendations and 3 of 8 suggestions were partially resolved (satisfactory progress to date). A document with the corrective measures taken was prepared based on the conclusions of the pre-OSART Follow-up Mochovce Unit 3.

113.	**Article** 14	**Ref. In National Report** § 5.5 Safety Assessment and Verification 5.5.2 International Nuclear Safety Reviews International Review Missions since 2022 (p.104)
Question:	**In November 2023, OSART Mission was conducted at Units 3 and 4 of NPP EBO V2.** **Could you please provide details available concerning the findings of the mission? Is there a plan for the implementation of these recommendations / suggestions?**	
Answer:	OSART Bohunice V2 2023 identified 5 suggestions and 12 recommendations in the areas of: Leadership & Management for Safety (LMS), Training and Qualification (TQ), Operations (OPS), Maintenance (MA), Technical Support (TS), Operating Experience Feedback (OEF), Radiation Protection (RP), Chemistry (CH), Accident Management (AM). Each identified problem was analyzed and a total of 146 corrective measures were adopted. The effectiveness of the measures will be reviewed as part of the OSART Follow-up in June 2026.	

114.	**Article** 14	**Ref. In National Report** § 5.5 Safety Assessment and Verification 5.5.2 International Nuclear Safety Reviews International Review Missions since 2022 (p.104)
Question:	**In November 2023, OSART Mission was conducted at Units 3 and 4 of NPP EBO V2.** **Can you please give details concerning the findings? Is there a plan for the implementation of these recommendations / suggestions?**	
Answer:	OSART Bohunice V2 2023 identified 5 suggestions and 12 recommendations in the areas of: Leadership & Management for Safety (LMS), Training and Qualification (TQ), Operations (OPS), Maintenance (MA), Technical Support (TS), Operating Experience Feedback (OEF), Radiation Protection (RP), Chemistry (CH), Accident Management (AM). Each identified problem was analyzed and a total of 146 corrective measures were adopted. The effectiveness of the measures will be reviewed as part of the OSART Follow-up in June 2026.	

115.	Article 14	Ref. In National Report § 5.5 Safety Assessment and Verification 5.5.4 Verification of Safe Operation by the License Holder (p.105)
Question:	**The assessment results are processed by the license holders on a quarterly and annual basis and presented in a form of report on the status of operational safety of NIs of SE, a. s. and sent to the regulator, ÚJD SR.** **In case any degradation of status in any of the areas under safety assessment is indicated, corrective actions are adopted aimed at preventing further degradation of operational safety.** **Can you please briefly describe the results of these analyses? Have any systemic weaknesses been identified that are worth sharing with other Contracting Parties? Are there any upgrade programs planned?**	
Answer:	When a deterioration or adverse trend is identified, the measures already taken in response to events or process indicators are assessed. If it is identified that the measures taken so far have not been sufficient, additional measures may be taken based on internally implemented self-assessments or internally implemented analysis methodologies.	

116.	Article 14	Ref. In National Report § 5.5 Safety Assessment and Verification 5.5.5 Ageing Management Programs (p.106)
Question:	**Ageing management is one of the areas verified within the PSR of NIs.** **Basic legislative requirements are reflected in the license holder´s process documentation of the IMS and in the relevant ageing management programs (AMP) developed for SSCs that are important in terms of nuclear safety.** **The linkage between the AMPs and the PSR outcomes is not clearly understandable: could you please explain how the results of the latest PSR (2016 for EBO V2, 2017 for EMO 1,2) fed into the revision or creation of the AMPs?**	
Answer:	Within the PSR, ageing management aspects are considered / reviewed in many Safety factors. The most relevant are SF5 Ageing management, SF2 Actual SSCs condition, SF3 Equipment qualification and SF15 Long term operation. PSR is performed every 10 years according to Decree 33/2012 Coll. on Periodic Safety Review, which follows IAEA approach outlined in IAEA Safety Guide SSG-25. During the safety assessments of SF15 Long term operation performed for NPP Bohunice V2, several findings were identified related to the AMPs and corrective actions were taken either to develop new AMPs or to modify existing AMPs. Based on this 6 new AMPs for civil structures were developed, 1 AMP for cables was significantly modified and several other AMPs for mechanical SSCs were modified / improved.	

117.	Article 16	Ref. In National Report § 5.7 Emergency Preparedness 5.7.5 Emergency Preparedness Maintenance Systems (p.127)
Question:	**The exercises were attended also by representatives of Ministry of Interior and Ministry of Health.** **During the exercises, mutual procedures of the ERO, information systems of the operator of the NI and the services of the Integrated Rescue System were checked.** **During both exercises it was possible to provide positive feedback on the work, knowledge and skills of members of the ERO NI, members of ÚJD SR Emergency Staff, members of crisis staffs of district offices and crisis staffs of municipalities and their evacuation commissions.** **The exercises also pointed at shortcomings in the field of staffing and technical equipment of the intervening units of the off-site ERO.** **Please provide more detailed information on these shortcomings? In particular on those, generic, which can be of interest for others Contracting Parties?**	
Answer:	Most of the shortcomings were of minor significance (e.g. audibility of the plant radio speakers) Among the issues identified during these exercises, is a question of equipment and procedures for dealing with contaminated patients by external ambulance crews.	

118.	Article 19	Ref. In National Report § 6.3 Operation 6.3.2 Limits and Conditions for Operation (p.145)
Question:	**The existing L&Cs take advantage of the experience gained during the commissioning and operation of Units 3 and 4 EBO, Units 1 and 2 EMO, from hot hydro test during commissioning of Unit 3 of NPP MO 3,4, from physical start-up and power testing of Unit 3 of NPP MO 3,4 and other NPPs. The L&Cs are based on the current state of the plant after the upgrade of Units 3 and 4 EBO (Modernization of V2) and after the implementation of the Units Power Uprate Project at NPP EBO and EMO. The basis for the fundamental change in the L&Cs was the update of the safety analysis reports at the above mentioned NPPs, triggered by Modernization of V2 and the project of Units power uprate. Can you please provide additional information on type and content of this fundamental change that occurred following the Modernization of EBO V2 with some practical examples?**	
Answer:	The changes primarily consisted of aligning L&Cs with upgraded systems and equipment (notably I&C, electrical, and safety systems), updated safety analysis methodologies, and revised acceptance criteria applied in the Safety Assessment Reports. This included the reassessment of design basis accidents and operational transients under conditions of increased reactor power, leading to updated operational limits, setpoints, and surveillance requirements. Overall, the fundamental change represents a transition to L&Cs that are fully consistent with the modernized plant configuration, updated safety analyses, and uprated power operation, ensuring continued compliance with applicable safety requirements.	

119.	Article 19	Ref. In National Report § 6.3 Operation 6.3.3 Control and Operational Documentation for Operation, Maintenance, Reviews of Nuclear Installations Severe Accident Management Guidelines (p.149)
Question:	**Part of the task was to prepare a report "Management of severe accidents on all units on site", which identifies potential areas for improvement, both in organizational support of managing the accident, and in adequacy of hardware resources. SE, a. s., developed a self-assessment in management of severe accidents according to the latest criteria of the WANO and under this self-assessment a corrective action plan was developed.** **Can you please provide practical examples of these "corrective actions"? Which examples might be relevant or useful to other Contracting Parties?**	
Answer:	List of corrective actions, which was developed after carrying out a self-assessment in management of severe accidents according to the latest criteria of the WANO includes for example: In the area of organizational support of management of the accident Severe Accident Management Guidelines (SAMGs) were adopted. The personnel involved in SAM are clearly defined. The SAM specific lectures and training is provided to them. Also in the Emergency Response Center, Technical Support Center was created which takes over the management of accidents when response to accident intiates SAMGs. From hardware modification point of view in-vessel retention strategy has been put in place (new pumps, tanks, ...). Also SAM diesel generator and mobile diesel generators have been installed.	

120.	Article 6	Ref. In National Report 3.6 Interim Spent Fuel Storage Facility
Question:	**Regarding the capacity of the ISFS dry storage, is this capacity sufficient to cover the operating period of the new power plants and the lifetime extension, or will it be necessary to expand the facility?**	
Answer:	Currently, two modules of Spent Nuclear Fuel storage capacities are in operation (dry and wet part), while in the future, in accordance with the finalized international EIA process, the completion of the second module of the Interim Spent Fuel Storage (ISFS) dry storage is planned. After its completion, in combination with the currently operating wet part of the ISFS, the total capacity of the ISFS will cover the needs of currently operating NPPs, including EMO 4 (Unit 4 of Mochovce NPP).	

121.	Article 11.2	Ref. In National Report 5.2.3 Human Resources and Professional Training
Question:	**Regarding the training of the personnel required for the operation of the power plants, how is knowledge management carried out in order to address the new power plants and the lifetime extension of the plants currently in operation?**	
Answer:	Knowledge management of the Slovenske elektrarne (SE) for both new units (Mochovce 3 and 4 NPP) and the long term operation of existing NPPs is ensured	

	through an integrated, systematic approach that combines formal training programs, operating experience, documentation control, and structured knowledge transfer mechanisms. Training system of SE is built on the Systematic Approach to Training (SAT) and includes comprehensive initial and continuing training for all categories of plant personnel. This covers theoretical preparation, on the job training, simulator training, and regular requalification cycles, ensuring that staff competencies remain aligned with technological upgrades and evolving regulatory requirements. Training programmes are updated based on regulatory inputs, internal operational events, human performance trends, and lessons learned from industry operating experience. For new units, knowledge transfer started during building phase and later commissioning through enhanced practical training, including full scope simulator sessions allowing personnel to gain experience with new NPP's systems and technologies. For lifetime extension of existing plants, knowledge management relies on documentation modernization, structured involvement of technical staff in operational activities, and the application of updated engineering insights to training programmes. Technical personnel contribute to identifying, analysing, and resolving conditions that may influence design bases and long-term safe operation, ensuring continuous knowledge capture and feedback into training and procedures. Overall, this integrated approach—combining SAT based training, knowledge capture processes, practical training platforms, and feedback driven continuous improvement framework—ensures that personnel maintain the competencies necessary to operate both new and existing units safely and effectively throughout their full lifecycle.

122.	**Article** 14.2	**Ref. In National Report** 5.5.5 Ageing Management Programs
Question:	**It is mentioned that 19 AMPs are being implemented. Have other AMPs been identified for implementation? If so, when is their implementation expected to be completed?**	
Answer:	No other additional ageing management programmes were identified and implemented.	

123.	**Article** 7	**Ref. In National Report** Page 53
Question:	**"As of the end of 2024, Slovakia had implemented 357 reference levels. This means that only 5 remained to be fully implemented (Report Status of the Implementation of the 2020 Safety Reference Levels in National Regulatory Frameworks as of 1 January 2025). Almost all of the missing reference levels were already included in the amendments to the Atomic Act No. 541/2004 Coll."** **Which of the 5 missing WENRA reference levels were not included (or will not be implemented) in the amendments to the Atomic Act No. 541/2004 Coll., and why?**	
Answer:	The 5 reference levels which have not been fully implemented, yet, are as follows: E10.6, F4.7, F4.17, F4.18 and R2.3. However, the main part of their text is	

	implemented (i.e., they are implemented partly) and the "missing part" represents in fact only a single and very specific sentence or expression, quite difficult to be added to the existing structure of the Atomic Act and/or decrees (as e.g., the last sentence of R2.3 "The plan shall be capable of extension, should more severe events occur.")

124.	**Article** 14	**Ref. In National Report** Pages 99-100
Question:	**"The update of the meteorological hazard characteristics will be carried out for the Jaslovské Bohunice and Mochovce sites in 2022. The reinforcement of the NPP EMO 1,2 to a new higher level of seismic hazard resistance is currently underway and will be completed by December 2022."** **Regarding the timeline mentioned in this text: was the update of the meteorological hazard characteristics successfully completed in 2022, and was the reinforcement of NPP EMO 1,2 finalized by the December 2022 deadline?**	
Answer:	The seismic reinforcement of the NPP EMO 1 and 2 to a new, higher level of seismic resistance was successfully completed by December 2022. The meteorological hazard characteristics for the Jaslovské Bohunice and Mochovce sites were updated in 2022.	

125.	**Article** General	**Ref. In National Report** Page 13
Question:	**Please indicate in the report or clarify Slovakia's approach to "Securing reliable supply chains" in relation to nuclear facilities.**	
Answer:	NPP operator Slovenské elektrárne (SE) ensures safe and reliable operations of NPPs by strengthening procurement processes including suppliers diversification and following the best practices in international nuclear industry standards. SE manage procurement of goods, works and services in line with the Slovak Public Procurement Act. Supplier Selection & Qualification Procedure consists of: A. Supplier Selection Process includes: 1. Publication of Tenders 2. Supplier Registration (company details, contact information, activity list based on SE Merchandise Groups) Registered suppliers gain access to relevant tenders and notifications. 3. Tendering: Tenders are carried out electronically. The Procurement systems and process guarantee transparency, equal treatment, competitiveness, healthy and controlled supplier environment. B. Supplier Qualification and Evaluation Procedure 1: Suppliers Qualification SE verifies whether the supplier meets basic legal and organizational requirements, including: registration, compliance with data protection rules, personal and financial status, fulfilment of basic procurement criteria. SE check Technical & Professional qualification. Suppliers may be required to demonstrate technical competence, history of performing similar work (references), nuclear grade or industry quality standards (e.g., ability to support WWER 440 technology). 2: Evaluation & selection. Evaluation considers: technical parameters, commercial conditions, compliance with safety and reliability requirements.	

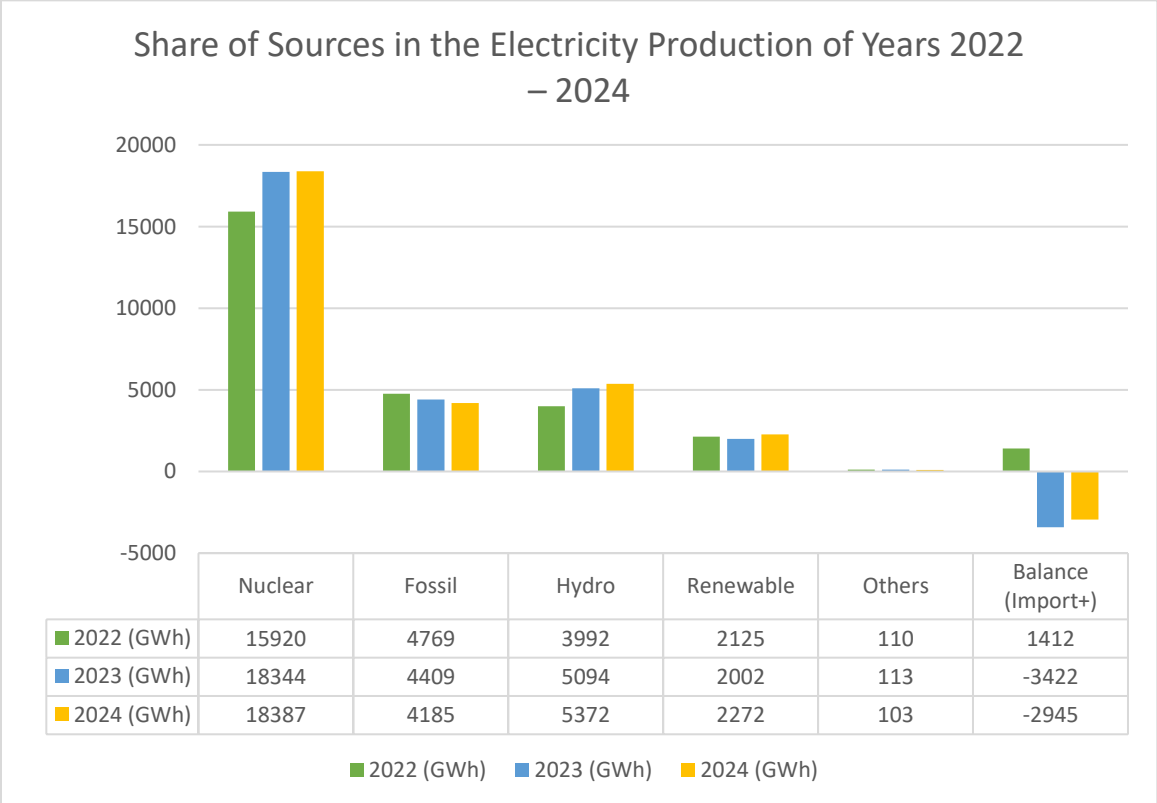
	3. Post tender Suppliers' evaluation. Once selected, suppliers remain subject to ongoing oversight including performance checks (for works, services and supplies), compliance monitoring. Audits of Supplier Quality Management Systems SE also performs audits of the quality management systems of selected suppliers that may affect the nuclear safety of nuclear facilities. Through audits the company verify the effectiveness of implementing the requirements of management systems according to ISO 9001, ISO 14001, or ISO 45001, as well as specific nuclear requirements arising from the legal standards of Slovakia, the EU, and IAEA recommendations. SE has implemented internal guideline defining basic rules and procedures for „Procurement of goods, works and services, focusing on qualification of suppliers for contracts that are important from the of nuclear safety perspective. The main aspects are: definition of commodities for supplier qualification, definition and assessment of technical and professional capability requirements for suppliers, definition and assessment of supplier requirements regarding quality assurance, environmental protection, and occupational health and safety/fire protection, conducting audits at suppliers, ensuring the evaluation of qualification conditions and communication with bidders regarding qualification, and management of the List of Suppliers. SE's approach mirrors best practices promoted by the international agencies like IAEA, WANO…, emphasizing strong supply chain oversight, avoidance of counterfeit or obsolete components, and proactive risk identification.

126.	**Article** 12	**Ref. In National Report** 3.4
Question:	**What measures are in place to ensure that human factor considerations are integrated into operations, especially during commissioning of Mochovce Units 3 and 4?**	
Answer:	The Integrated Management System Human Factor Reliability Program document is a binding document for: Bohunice V2 and Mochovce NPPs, including Mochovce 3 and 4 and SE headquarters departments, in the scope of employees who perform activities that have an impact on nuclear safety. The document is binding for Mochovce Unit 3 from the loading of the first fuel cassette into the reactor of Unit 3 and will be binding for Mochovce Unit 4 from the loading of the first fuel cassette into the reactor of Unit 4. Shift Supervisors and managers at various levels of management up to the level of foreman are common to Units 3 and 4. This means that they are already involved in the Human Reliability Program and carry out observations in the field focused on the correct and safe performance of activities in accordance with the Human Reliability Program; They provide feedback (in a coaching manner) to employees to improve their work performance and the correct use of Human Reliability Program ("Tools for the Prevention of Human Error").	

127.	**Article** 6	**Ref. In National Report** 1.3.3 3.4.3

Question:	**The Mochovce Unit 4 construction and commissioning project has been very complex, including technical and quality issues, significant delays, and cost overruns. Has the regulator taken additional or increased regulatory / inspection measures to ensure high-level of safety? Please describe those measures.**
Answer:	The same principle adopted for Unit 3 has also been adopted by UJD SR for Unit 4 during all phases of construction (including specific maintenance and protection measures for installed technology) and the non-active testing phase to date. UJD SR inspectors play an important role in conformity inspections and monitoring of non-active tests. The regulatory body has implemented a set of tools for supervisory activities, including special team inspections, unplanned inspections and simple contracts with scientific organisations or scientific research units, as well as inspection support from an external support organisation (TSO). The TSO provided very intensive assistance during the integral tests (cold and hot hydrostatic tests).

128.	**Article** General	**Ref. In National Report** Page 18-19 / 182
Comment:	**Fig 2, 3 and 4 are poorly readable, partly written in Slovakian, and not includes data from 2024. It should be remake and improved by data from 2024.**	
Answer:	Figures were updated based on data from Annual reports of SEPS company (operator of the electricity transmission system in Slovakia). You can find them below.	



	Nuclear	Fossil	Hydro	Renewable	Others	Balance (Import+)
2022 (GWh)	15920	4769	3992	2125	110	1412
2023 (GWh)	18344	4409	5094	2002	113	-3422
2024 (GWh)	18387	4185	5372	2272	103	-2945

Fig. 2 Share of sources in power generation in 2022 - 2024 (Source: SEPS, a. s.)

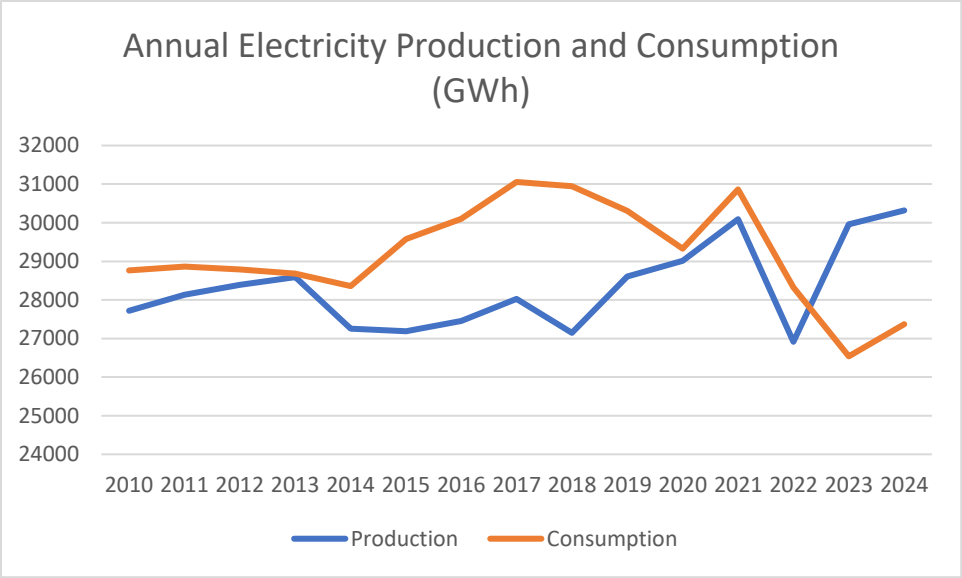


Fig. 3 Annual Electricity Production and Consumption in Slovakia (Source: SEPS, a. s.)

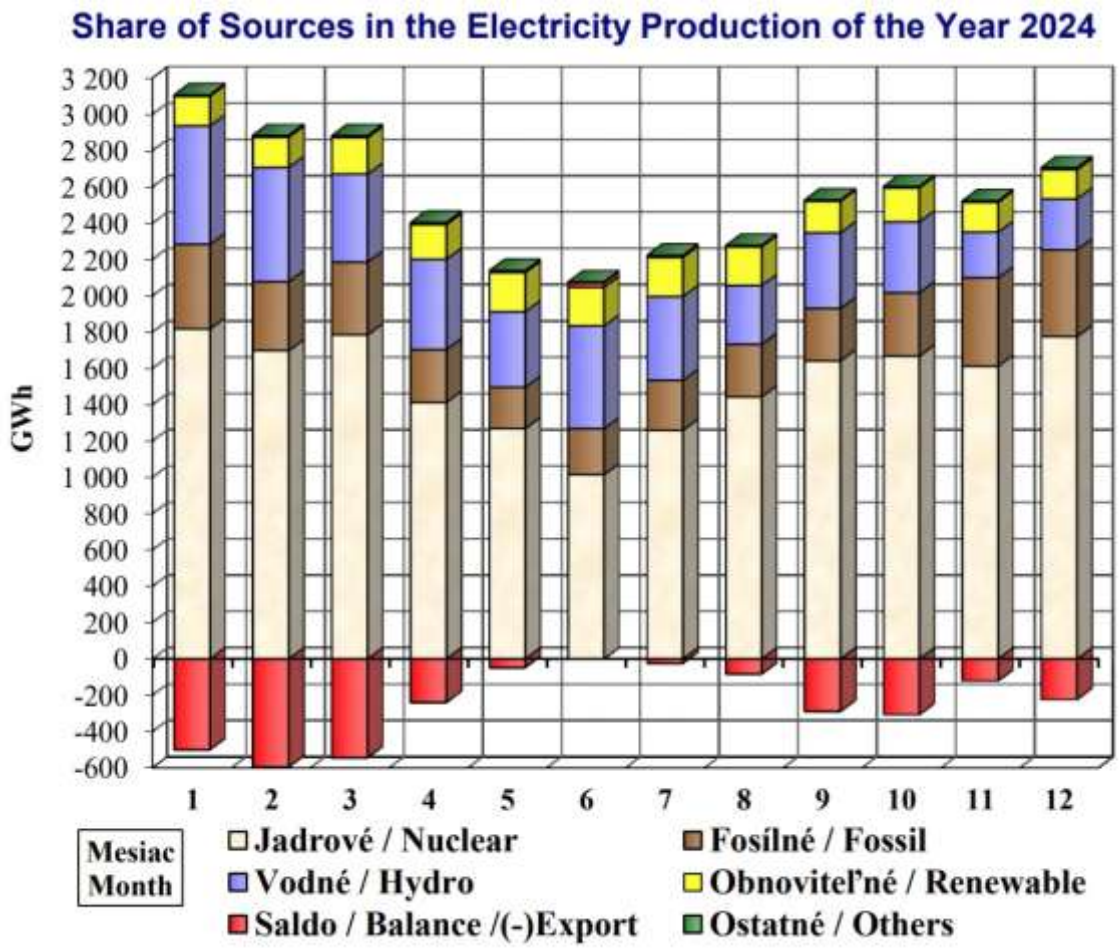


Fig. 4 Share of sources in monthly power generation for 2023 (Source: SEPS, a. s.)

129.	Article 7	Ref. In National Report Section 4.2.1, page 59 / 182
Comment:	**Fig 11. Organizational structure of ÚJD SR (source: ÚJD SR) is difficult to read. Recommended to improve it.**	
Answer:	Organizational structure is also available on the web page of UJD SR: Authority - About ÚJD SR - Organization of the Authority	

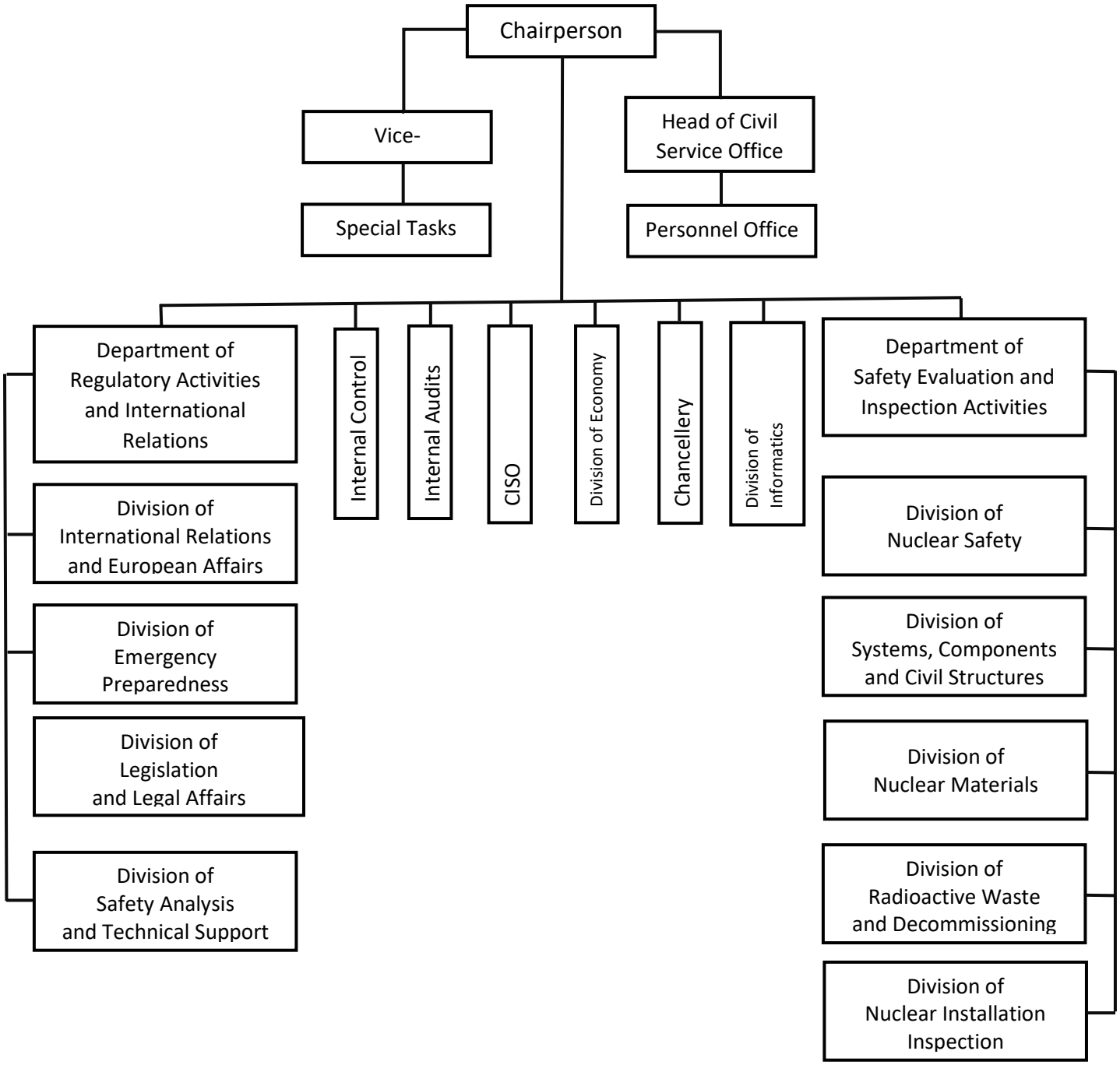


Fig. 11 Organizational structure of ÚJD SR (source: ÚJD SR)

130.	Article 7	Ref. In National Report Section 4.2.2, page 64 / 182
Comment:	**Fig. 12 Structure of state supervision in the field of radiation protection (source: PHA SR) content should be revised due to repetition.**	
Answer:	There is a typo in the figure - Regional Health Authorities are in Bratislava, Nitra, Banská Bystrica and Košice. Updated Structure of State supervision in the field of radiation protection is in supporting document, published separately.	

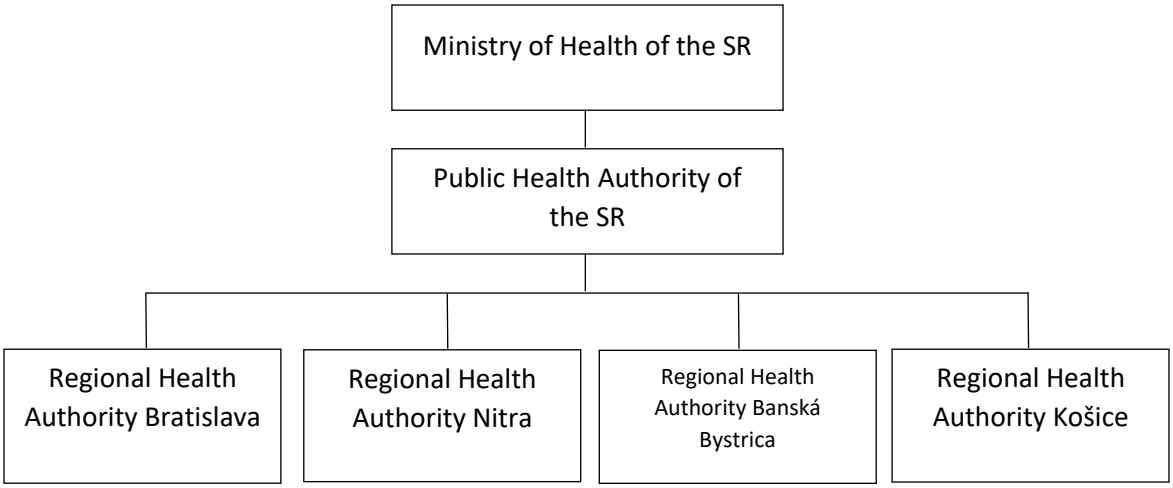
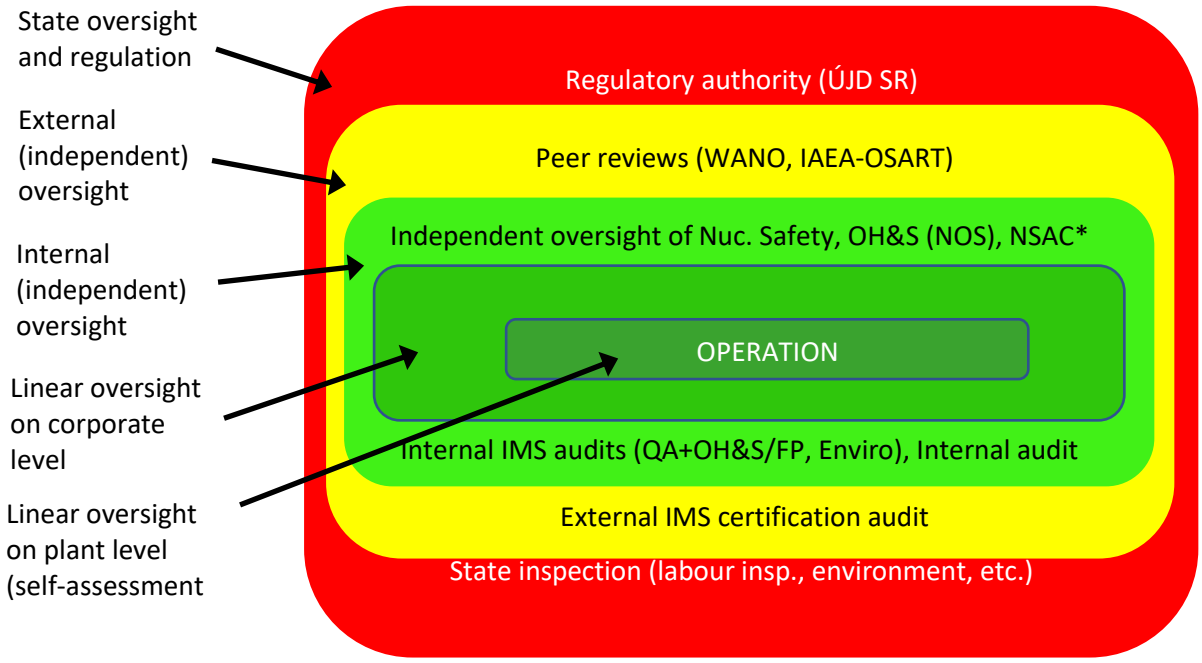


Fig. 12 Structure of state supervision in the field of radiation protection (source: PHA SR)

131.	Article 10	Ref. In National Report Section 5.4.4, page 96 / 182
Comment:	**Fig. 14 Monitoring and assessment of nuclear safety at SE, a. s. (source: SE, a.s.) the text in the picture is blurry and should be improved for better readability. It is advisable to use the same font style (size and color) for the whole figure.**	
Answer:	You can find updated version of Figure 14 below.	



* NSAC: Nuclear Safety Advisory Committee

Fig. 14 Monitoring and assessment of nuclear safety at SE, a. s. (source: SE, a.s.)