Convention on Nuclear Safety

Questions Posted To Lithuania in 2017

No.	Country	Article	Ref. in National Report	Question	Answer	Support Documents
1	Finland	General	pages 15-16	According the Report (p. 15-16), a periodical safety review at the stage of fuel removal from INPP Unit 1 shall be performed by the beginning of 2017. Following, VATESI is going to perform an assessment. How does VATESI document, report and inform public of the reasoning of its assessment?	After completing regulatory review and assessment of the report of periodical safety review of the INPP Unit 1, regulatory report on review and assessment will be prepared. Summary of the regulatory report will be published on VATESI website www.vatesi.lt in accordance with the current legislation and with the internal VATESI`s management system procedure. The summary will include explanations concerning the safety review and regulatory assessment process as well.	
2	Germany	General	p. 9	Could Lithuania elaborate on the main findings of the IRRS-mission? How will those be addressed?	Main findings of the IRRS mission, which was conducted in Lithuania from 18 to 29 April 2016, are related to the following areas: • improvement of legal and regulatory framework for nuclear, radiation, and waste safety to ensure full consistency with the latest IAEA safety standards; • assessment of existing and future human resource needs in relation to safety; • further development of the existing provisions of the legal framework and national policy and strategy for the decommissioning of waste management facilities and for the management of radioactive waste; • strengthening the regulatory framework related to Emergency Preparedness and Response with regards to the assessment of hazards; • amendment of the legal framework to ensure that there are distinct steps for authorizing the closure of repositories.	

					Action plan for implementation of recommendations and suggestions provided by IRRS mission experts is prepared and is in the process of adoption by all concerned institutions. The full report of the IRRS mission to Republic of Lithuania is provided on the IAEA website: http://www-ns.iaea.org/actionplan/missions.asp?mt=IRRS&my=2016&cn=Lithuania&ms=Completed&func=search&submit.x=17&submit.y=10	
3	Japan	General	P18	A.2 Table-1(P18-), Lithoanian Report shows the measures for the beyond Design Base Accident (BDBA) of INPP. Please elaborate the regulatory requirements of measures of BDBA such as PAR or Filter vent for the newly plant to be constructed.	The draft of regulatory requirements “Design of NPPs” (for new NPP) establishes requirements for permanent engineering safety features, instrumentation, mobile equipment and arrangements for accident management in case of core melt accident. The draft principal statements are: „The design of power unit of a NPP shall be such as at the occurrence of NPP severe accidents considered in the design within the sufficient short period of time: • debris of a damaged reactor core is localized in a containment and cooled down, stable and decreasing its temperature is ensured and criticality is avoided; • release of radioactive materials into environment is stopped or is reduced so as identified in the design documentation of a NPP; • maintenance of the power unit of a NPP status, which is prescribed in clauses presented above, shall be ensured for the time period, which is supposedly required to liquidate the accident consequences completely. Accidents considered in the design includes both DBA and BDBA. The draft provision concerning control of hydrogen is: “Provision shall be made in the design of a NPP to control and monitor the fission products, hydrogen, oxygen and other gaseous, liquid or solid substances that might be released in the internal space of containment and affect the operation, monitoring and control of SSC IS. These provisions shall be set in accordance with the rules and requirements of nuclear safety and justified in a NPP design. These measures shall: <…> reduce the concentration of hydrogen, oxygen and other	

					substances in the containment atmosphere in a NPP accidents considered in the design conditions so as to prevent deflagration and detonation loads that could challenge the integrity of SSC of containment.”.	
4	Norway	General	9	At VATESI how many staff are working with the nuclear facilities?	As of 31 December 2016 number of VATESI staff positions was 75, and 69 of these 75 positions were occupied. Around 46 of them working with the nuclear facilities.	
5	Norway	General	13	Is there a timeline for the planning, licensing and construction of a new NPP?	In the process of ongoing procedure of renewal of the National Energy Strategy of Lithuania, on 24 November 2016, the Ministry of Energy of the Republic of Lithuania (the Ministry) approved the “Recommended Key Guidelines of the National Energy Strategy of Lithuania” (the Guidelines). In addition to other energy policy matters, the Guidelines also address the issue of the VNPP project. Item 7.13 of the Guidelines provides as follows: “7.13. Freeze the Visaginas Nuclear Power Plant (VNPP) project until the time when it becomes cost effective, regarding market conditions, or becomes necessary, having regard to the circumstances of security of energy supply.” Therefore, development of Visaginas NPP project is currently suspended.	
6	Norway	General	13	In the report it is said that you have a training program on maintaining staffs competence. What are your ideas about the amount of staff needed for a new NPP? Will you need to hire more staff? Will you be able to hire enough educated staff? Is there a nuclear education program in Lithuania?	There are two study programs in Lithuania for preparation of highly qualified nuclear energy specialists: the Studies of Energy Physics at Vilnius University and Graduate and Postgraduate Studies of Nuclear Energy at Kaunas University of Technology. If the new build project will be further developed (currently the project is suspended) a decision on the new National professional training plan and for coordination of its implementation shall be taken by organizations concerned, including relevant ministries and scientific and educational organizations and institutions. The number of staff needed for a new NPP highly depends on the envisaged structure and the needs of operating organization (license holder) taking into account the organizational structures at the nuclear	

					power plants in operation of the same reactor type. It shall be highlighted that since 2008 significant efforts were taken in Lithuania regarding establishment and implementation of nuclear education program in Lithuania. For more detailed answer to your question please refer to clause 11.2.10 of the Lithuania's sixth national report under the Convention (Year 2013).	
7	Russian Federation	General	page 7	As follows from the NR, Lithuanian electricity network is not connected to the European electricity system. Therefore, Lithuania can import electricity from a very limited number of countries. Could you please list the countries from which Lithuania can import electricity.	In the end of 2015 new interconnections – NordBalt (between Lithuania and Sweden) and LitPol Link (between Lithuania and Poland) were commissioned. These interconnections increased the security of electricity supply and allowed to reduce energy costs in the market. Lithuania also has interconnections with Latvia, Belarus and Kaliningrad region.	
8	Russian Federation	General	page 7	According to the National Report, Site Evaluation Report was reviewed by Independent IAEA Site Safety Review Mission (SSRM) which took place on 8–12th of November, 2010. According to the NR, the experts of the mission have submitted several recommendations that may be implemented only after selecting nuclear technologies and layout of nuclear facilities providing	One of examples of the recommendations is: "The estimation of bearing capacity of the soil is made for the global nuclear island. The clarification of this assumptions is needed in the sense of this is not a rigid foundation but a group of individuals foundations." In terms of IAEA Site Safety Review Mission recommendations implementation it shall be stated that the following steps were taken: • A mission follow-up meeting with IAEA was held in 2011 where actions to implement possible recommendations were presented and agreed; • International independent peer review on the Site Evaluation Report was carried out after implementing IAEA recommendations in 2011. State authorities such as the State Nuclear Power Safety Inspectorate, the Lithuanian Hydro-meteorological Service under the Ministry of Environment, the Ministry of Health, the Administration of Civil	

				opportunities for additional investigations related with design works. Could you please tell what exactly were the recommendations of the IAEA review mission.	Aviation, the Lithuanian Geological Survey under the Ministry of Environment and the Fire and Rescue Department under the Ministry of the Interior, reviewed the Site Evaluation Report after independent peer review and agreed on the Report. Since the IAEA Site Safety Review Mission report includes references and information from the Site Evaluation Report and it contains security sensitive information, the full scope of the mission report, unfortunately, cannot be disclosed. Nevertheless, the major conclusions were already disclosed on several occasions and are published on Visaginas nuclear power plant website. However, excerpt of the report can be provided upon request, under a dedicated agreement and after obtaining permission of report owners.	
9	Russian Federation	General	page 8	As follows from the NR, the economic viability assessment of the VNPP project, carried out by all of the project's potential investors (LT, LV, EE utility companies and Hitachi), identified "certain outstanding issues requiring attention of project hosting Government as well as the Governments of other Baltic States". Could you please name the above mentioned outstanding issues.	The identified outstanding issues of the potential investors into Visaginas NPP project were mainly related with the legal, financial and economical aspects of project development environment. In general, there were three sets of the questions that can be named as: 1. Questions to be resolved between the governments of countries of investing companies; 2. Questions to be resolved between the investing companies and the government of hosting country; 3. Questions to be resolved between the investing companies; All the questions are related to investment protection and are confidential. Therefore any disclosures in relation to the protected information cannot be made without an agreement of all involved parties. However currently development of Visaginas NPP project is suspended. In the process of ongoing procedure of renewal of the National Energy Strategy of Lithuania, on 24 November 2016, the Ministry of Energy of the Republic of Lithuania (the Ministry) approved the "Recommended Key Guidelines of the National Energy Strategy of Lithuania" (the Guidelines). In addition to other energy policy matters, the Guidelines also address the issue of the VNPP project. Item 7.13 of the Guidelines provides as follows:	

					“7.13. Freeze the Visaginas Nuclear Power Plant (VNPP) project until the time when it becomes cost effective, regarding market conditions, or becomes necessary, having regard to the circumstances of security of energy supply.”	
10	Russian Federation	General	Summary, page 8	According to the NR, the safety improvement measures resulting from European Union (EU) "stress tests" that were foreseen to be implemented in INPP units and in existing spent fuel storage facility (SNFSF) were completed by the end of 2015. According to the Report, the remaining non-implemented measures are related with the future facilities only. Could you please name the implemented and non-implemented safety improvement measures resulting from European Union "stress tests".	Status and progress of all measures included in the Plan of Strengthening Nuclear Safety in Lithuania (National Action Plan) related to European Union “stress tests” is summarized in the Table 1 of Section A2 of the National report. Safety improvement measures related to nuclear safety of INPP Units (measures No. 6 – 8 and No. 10 – 14) and spent nuclear fuel storage facilities (measure No. 9) are implemented. Safety improvement measures related to evaluation of the spent fuel cask tip over in case of earthquake during transportation (measure No. 4 – 5) are completed as well. In accordance to measure No. 3 safety justification to set the emergency preparedness category II (according to IAEA standard GSR Part 7) for INPP is in progress, state emergency preparedness plan is still valid as for emergency preparedness category I with bigger safety margin. In accordance to measures No. 1 and No. 2 review of compliance of existing national legislation with updated WENRA Safety Reference Levels for Existing Reactors was completed in 2016 and those, relevant to INPP, are planned to be transposed into the national legislation in 2017.	
11	Russian Federation	General	Summary, page 8	According to the NR, during the VNPP site evaluation process, expert teams collected all available geological, geophysical, seismological, meteorological, hydrological and other data	1. Following requirements of IAE Safety Guide SSG-9, item 3.8 for regional investigations the data related to Belarus territory have been obtained from number of geological and geophysical data sources. Published literature sources are listed in Answer Support Document. 2. There was a significant amount of data available from the existing Ignalina NPP operation and completed Visaginas NPP environmental impact assessment. New data was gathered in all the areas mentioned below:	

				for the region extending more than 300 km from the sites. The gathered available data and newly acquired results were collected and analysed by Lithuanian and foreign experts in Site Evaluation Report. 1. Could you please clarify what sources were used to collect data related to Belarus territory. 2. Could you please clarify what are the newly acquired results collected and analysed in Site Evaluation Report. 3. What the newly acquired results point to? 4. Do the newly acquired results concern also Belarus territory (in particular, the Ostrovetsk NPP site) that surely falls into the 300 km region around the Visaginas sites, and do they point to the acceptability of the Visaginas sites (including residual risk of a severe accident) but to the unacceptability of the Ostrovetsk plant located in the same region? 5. Why the geological,	- Geological conditions; - Seismic conditions; - Human induced events sources and characteristics; - Meteorological conditions; - Ultimate heat sink characteristics; - Other. For more details, please refer to Clause 17 of the Report. 3. Based on the previously available information and a newly acquired information in the scope of Visaginas NPP site evaluation it was concluded that there are no exclusion criteria and no deficiencies that cannot be compensated by means of design features, measures for site protection or administrative procedures therefore both investigated sites are suitable for construction of new Visaginas NPP. 4. Although some of the information used in Visaginas NPP site evaluation also cover the area where Ostrovets NPP is located, the evaluation performed was focused on evaluation of Visaginas sites for NPP construction and has no conclusions on ONPP sites. 5. The question formulated not correctly. The evaluation performed was focused on evaluation of Visaginas sites for NPP construction and has no conclusions on Osrovets site. Also it has to be mentioned, that suitability of Visaginas NPP site has been confirmed based on results not only of regional, but as well as near-regional, sites vicinity and sites‘ investigations. 6. In NR it is explained that the selected Ostrovets NPP site is not considered as „properly investigated“, as Belarusian side didn’t evaluate the Lithuania’s and its capital’s Vilnius population density and population distribution (the distance from Ostravets site to Lithuanian capital Vilnius is only 40 km, 1/3 of Lithuanian population (in 100 km – extended planning distance – from NPP site) might be affected in the case of severe accident and it would be very difficult for Governmental organisations to manage such emergency situation in the capital region), also has not provided not-contradicting data and clear evidences, that during investigations of site the geological and seismo-tectonic properties were properly evaluated. For more details, please refer to	

				geophysical, seismological, meteorological, hydrological and other data collected for the region extending more than 300 km from the VNPP sites point to the acceptability of the Visaginas sites (including residual risk of a severe accident) but to the unacceptability of the ONPP located in the same region? 6. Could you please clarify the term "properly" (according to the Lithuanian NR, the site of the Ostrovetsk NPP "is not properly investigated"). 7. Could you please tell what facts served to assert in the NR that "infrastructure and strategy for management of radioactive waste and spent nuclear fuel are not established" at the Ostovetsk NPP.	Clause 16.6 of the National Report. 7. These assertions are based on conclusions of the IAEA INIR mission hosted by Belarus in 2012 and on information provided by Belarus side during the fifth meeting on Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management.	
12	Russian Federation	General	page 9	According to the NR, in the course of the Integrated Regulatory Review Service (IRRS) mission that took place at the VATESI and Radiation Protection Centre	The discussion goal was to identify regulatory policy aspects and criteria for authorization of license holder activities during transition from operation to decommissioning period. The main points that VATESI was interested to get inputs on were: • The main technical and safety justification documentation submitted for authorization of activities of transition period;	

				(RSC) Headquarters in Vilnius from 18 to 29 April 2016 there was "one policy issue discussion on regulatory policy for authorization of dismantling activities during transitional period from operation to decommissioning". Could you please clarify what was that "one policy issue" discussed during the mission.	• Regulatory Policy for decision making during transition period; • Criteria for authorization of dismantling of no more needed systems and components during transition period. Following the introductory presentation questions were raised and answered in order to clarify the current status of INPP decommissioning, including on the scope of operation licence of INPP, the major phases of the transition period between operation and decommissioning. Based on the discussions and experience shared by the IRRS team, it was concluded in general that the design basis should be identified for each major stage of the full decommissioning process, and accordingly major safety functions and corresponding safety systems have to be defined. Safety assessment, technical specifications and safety analyses report should be prepared and submitted to the regulatory body for review and assessment and licensing. VATESI experts said the Lithuanian approach follows a similar process. For different decommissioning stages different permits may be granted under the licence. Decommissioning process requires new approaches, new competences, knowledge and skills from both the regulatory body and the operator. These new competences may significantly differ from those that were required during the operational phase of the facility. An overarching planning is also needed to optimize the entire process of decommissioning. Therefore beyond the safety issues related to the current stage and/or activities, adequate attention shall be paid to safety issues in long term. In this the regulatory body may benefit from the cooperation with other authorities at national and international level. Specific experiences and practices of countries represented by the IRRS experts were presented during the discussion. It was concluded that priorities for ensuring nuclear safety, radiation protection and security are changing from stage to stage during the entire decommissioning process; therefore, cooperation amongst regulatory bodies is essential. It was also discussed that before granting a decommissioning license, it	

					is important that the regulatory body verifies the readiness of the operator for the decommission stage. In addition to technical issues attention needs to be paid to e.g. functionality of the management system, level of safety culture, training of personnel, personnel resources, and management of chains of subcontractors. It was mentioned during the discussions that the timing and the deadlines defined in the license for the implementation of decommissioning activities have high importance. Due to different phenomena (like aging and wear out) beyond the specified deadlines the components' capabilities may significantly be reduced to with-stand those circumstances that they were planned to withstand in the decommissioning plans. Thus delay in conducting necessary activities and steps of the decommissioning stage may cause an increase of risk for the public and the environment. During the decommissioning phase the regulatory body's power may weaken to enforce its regulation and requirements. This phenomenon requires special attention from the government. The government seems to play also a significant role in following up the decommissioning process: implementation of stages, successes, delays and problems have to be regularly reported to and if necessary, actions to be taken by the government. In the practice of several countries the funding of decommissioning is collected from the operator during the operational phase. Therefore, that is also the role of the government to establish in due time the funding policy for decommissioning.	
13	Russian Federation	General	page 14	As follows from the NR, the Republic of Lithuania negotiates with the Republic of Belarus a bilateral agreement on cross-border coordination of protective actions during the early phase of a nuclear accident (HERCA-WENRA).	The last version of draft Agreement on Cooperation and Information Exchange in the Field of Safety Draft Agreement on Cooperation in Regulation of Safety Using the Nuclear Energy for Peaceful Purposes between the MES of Belarus and VATESI based on the Convention on Nuclear Safety and Convention on Early Notification of a Nuclear Accident was prepared by VATESI, agreed on with Lithuanian institutions and European Commission and sent to MES on 8th of March 2016. The draft Agreement included part about cooperation of both institutions on early notification of a nuclear accident as the exchange of information is very important for development of	

				Could you please tell what has been agreed already?	appropriate harmonized emergency preparedness and response measures. The answer of MES is being awaited.	
14	Russian Federation	General	A2, page 19	The NR points out that the measure in para 5 in Table 1 "to consider the necessity of improvement of emergency preparedness procedures or updating those after confirmation of the calculation results of the spent fuel cask tip over during transportation" was implemented. Could you please give information about experimental data and the outcome of the consideration of the necessity to improve emergency preparedness procedures.	The relevant analysis is based on calculations, results of which are provided in the Report on Cask CONSTOR®RBMK 1500M2 Tip-over Analysis. The analysis justified the capability of the cask and bolts of the primary lid of the cask to withstand the cask tip-over and falling down on the solid concrete base during its transportation from the INPP Units to the Interim Spent Fuel Storage Facility (ISFSF) site. The performed calculations, by applying highly conservative model, confirm that the bolts of the primary lid keep their tightness, thus the primary lid remains in the dedicated place and prevent scattering of fuel bundles from the cask. For emergency preparedness purposes, the evaluation of cask tip-over and postulated loss of the leak-tight sealings of primary lid was carried out and calculations of possible release of gaseous fission products to the environment were performed despite the fact that, probability of the event of the cask tip-over during transportation is very low. The calculation results of possible release of gaseous fission products are provided in the Report on Evaluation of Activity Release after a Cask Tip-over Accident. Based on the results provided in the above mentioned reports, relevant changes in the Updated Safety Analysis Report for the INPP RBMK Units 1 and 2 ISFSF and emergency preparedness instructions of INPP Emergency Preparedness Organization have been made, including updating of Instruction on Assurance of Safety during Transportation of Spent Fuel Casks on the INPP Site.	
15	Russian Federation	General	Introduction	Last paragraph in the NR Introduction mentions the 6th, rather than 7th, review meeting.	In the NR Introduction states that “summary of highlights and issues raised about Lithuania during the sixth review meeting are presented in Summary section“ intentionally as current report also demonstrates follow up from 6th RM to the 7th. For more details refer to INFCIRC/572/Rev.5 page 6 clause 29-30.	
16	Russian Federation	General	pages 9, 14, 88, 94-	The 7th National Report of the Republic of Lithuania does not fully meet	The 7th National Report of the Republic of Lithuania fully complies with provisions of the guiding documents of the Convention on Nuclear Safety: it has been prepared following the “Guidelines regarding	

			96, 110-113	provisions of the guiding documents of the Convention on Nuclear Safety. Thus, pages 9, 14, 88, 94-96, 110-113 (which together account for 7% of the National Report of the Republic of Lithuania) contain discussion of concerns related to construction of nuclear power plants in neighbouring countries, primarily, Ostrovetsk NPP in the Republic of Belarus. The Report discusses in detail potential problems associated with such construction and expresses doubts about the safety of the Belarus NPP (acceptability and proper investigation of the site, compliance of design with modern safety standards, “stress tests” not performed, operator and regulator capabilities not evident, strategy for management of radioactive waste and spent nuclear fuel not established). Apparently, country’s	National Reports under the Convention on Nuclear Safety”, INFCIRC/572/Rev.5 taking into account „Additional recommendations for the preparation of national reports for the 7th review meeting“ (as of 8 October 2015), and “Summary Report of the 6th Review Meeting of the Contracting Parties to the Convention on Nuclear Safety (CNS)“. The information referred in the question, addresses the challenges, identified by the Special Rapporteur for consideration by Contracting Parties and includes the challenges Lithuania faces to protect its citizens, and the environment from potential harmful effects of ionizing radiation due to new nuclear power plant project being developed in vicinity of Lithuania’s capital city Vilnius as well as Lithuania`s efforts in this regard.	

				national report is not the right place to express concerns of this kind, because according to Article 5 of the Convention on Nuclear Safety (INFCIRC/449) "Each Contracting Party shall submit for review, prior to each meeting referred to in Article 20, a report on the measures it has taken to implement each of the obligations of this Convention".		
17	Russian Federation	General	General	According to the Report, UAB VAE SPB as a company responsible for the implementation of the preparatory works for the construction of the new NPP has performed evaluation of potential sites located near the existing GNPP against national and IAEA requirements. Both sites were found to be suitable to house a nuclear power plant. 1. Could you please clarify what settlements are located near these two sites, and what is the distance between the two sites and	The information about the settlements and population density of new nuclear power plant in Lithuania was prepared and approved in 2009 and it is available in Lithuanian, English and Russian in the Environmental Impact Assessment of Visaginas NPP that can be downloaded from this site: http://www.vae.lt/lt/projektas/projekto-parengiamieji-darbai/poveikio-aplinkai-vertinimas-pav The new NPP site is selected in the Ignalina NPP Sanitary Protective Zone (radius of 3 km around the Ignalina NPP) and at the 0,5 km from administrative building of Ignalina NPP. Proposed radius of the new NPP Sanitary Protective Zone is 1 km and does not exceed the radius of Ignalina NPP Sanitary Protective Zone. Thus the settlements and environmental conditions near new NPP site is considered the same as Ignalina NPP site. Ignalina NPP is built on the southern shores of lake Druksiai close to the state borders of Latvia and Belarus (in the distance of 8 and 5 km respectively). Based on the data as of 2015, the Ignalina NPP region consisting of Visaginas Municipality (58 km2), Ignalina district (1447 km2) and	

				from them to the border areas of both the Russian Federation and the Republic of Belarus? 2. Could you please give information about the population density and distribution in the area near the selected sites, as well as other characteristics that may influence implementation of urgent measures and risk for individuals and public. 3. For comparison, could you please give the distance to the border from the existing Ignalina NPP, and the population density and distribution near the Ignalina site.	Zarasai district (1334 km2) had a population of 54090 (Visaginas - 20249, Ignalina and Zarasai districts - 16 806 and 17 035 respectively). Within the 3 km Sanitary Protection Zone set around Ignalina NPP no permanent residents are allowed and undertaking of economic activities is restricted. The closest residential area (village) is about 3.5 km to the south-west from Ignalina NPP including other distant small villages or single farmsteads with very few inhabitants and the tendency towards depopulation. The same could be said about the Daugavpils region in Latvia and Braslav region in Belarus. The population density of rural areas is rather low with the prevailing elderly residents and observed depopulation. Distances to the capital and big cities with population of more than 200 000 both of Lithuania and neighbor countries are with good margin above 100 km (IAEA and HERCA-WENRA recommended extended planning distance).	
18	Russian Federation	Article 6	para 6.1, p. 23	Currently, the reactor of Ignalina Unit 2 contains approximately 1100 fuel assemblies that have remained there for at least 7 years. Do you manage now to maintain operability of cladding leak detection tools? Are there any symptoms of accelerated corrosion of fuel claddings and fuel channel,	The design fuel cladding leak tightness monitoring system can perform its functions only at the reactor power operation and to a limited extent, within approximately a month after the shutdown. The system that performs monitoring of fuel cladding leak tightness during the reactor defueling has been developed and implemented at the INPP. Monitoring of 137Cs activity in the reactor coolant shows that there are no significant changes in its activity with the tendency towards reduction, thus indicating that the reactor fuel leakage does not take place. INPP in accordance with technological regulation on inspection of fuel channels of INPP Unit 2 once per two year performs visual inspection of inside layer, ultrasonic inspection and measurement of thickness of oxide layer of agreed amount of fuel channels. Inspection results, comparison of the results with previously performed inspections and	

				as well as appearance of wall-through defects in fuel elements? Have there been significant changes in coolant activity?	justification of safe operation of inspected fuel channels are provided and agreed with VATESI. Results (history of inspection data) of fuel channels inspections demonstrates that the accelerated corrosion of fuel channels is not observed/detected.	
19	Russian Federation	Article 6	Summary, page 12	When (according to the latest version of the Final Decommissioning Plan (FDP)) the dismantling of Unit 1 reactor is expected to start?	With respect to the assembly, technology, mounting of the reactor installation, existing maintenance experience, anticipated radiological contamination, three separate reactor areas are distinguished: R1 (fuel channels and CPS channels, associated communications above the reactor), R2 (communications below the reactor) and R3 (reactor metal structures, fillings, graphite stack, RCS channels, other internals). Based on the FDP and the INPP decommissioning MegaProject Schedule, establishing the sequence of projects implementation and works performance, including distribution of required resources, dismantling of structures and components from Unit 1 reactor R1 and R2 areas is expected to start in 2019 and dismantling of Reactor R3 area is expected to start in 2023.	
20	Belarus	Article 7.2.1	32	Section 7.4 describes procedure of review and adoption requirements and norms by the regulatory body with consideration of the interested parties' comments. Is this procedure (including drafts agreement and controversies discussion) obligatory for all regulatory legal documents?	The procedure described in Section 7.4 is applicable to all legal acts of public administration – all draft laws, draft Government Resolutions and draft nuclear safety requirements and rules of State Nuclear Power Safety Inspectorate.	
21	Belarus	Article 7.2.1	29	In Article 7 four major laws regulating the relationships in the field of nuclear energy and ionizing	n terms of hierarchy, laws are superior to Government Resolutions and nuclear safety requirements and the nuclear safety rules, adopted by State Nuclear Power Safety Inspectorate (VATESI), which means, that these documents shall be compliant with the laws. In terms of	

				radiation sources use are mentioned. Then, in section 7.4 the procedure of review and adoption regulatory requirements and norms described. What legal power in relation to each other do these documents have? What kind of normative documents constitute the regulatory basis in the field of nuclear radiation safety as a comprehensive system?	application, laws, Government Resolutions and nuclear safety requirements and the nuclear safety rules, adopted by VATESI are mandatory. Comprehensive list of laws, Government Resolutions, legal acts adopted by VATESI and other institutions, can be obtained at VATESI‘s website: http://www.vatesi.lt/index.php?id=545&L=1 (www.vatesi.lt, choose English, Legal information, List of legal acts).	
22	Belarus	Article 7.2.3	34	Please, describe the items in the national policy and strategy which reflect a graded approach commensurable with the radiation risks related to facilities and activities (existing and planned), and the activity on radiation sources use.	Implementation of the national policy and strategy for safety is subject to the graded approach in accordance with national circumstances and with the radiation risks associated with facilities and activities, are established in the Law on Nuclear Energy, the Law on Nuclear Safety, the Law on Radioactive Waste Management and the Law on Radiation Protection. The national policy and strategy as well as fundamental safety objectives are complied with the IAEA fundamental safety principles. State regulation and supervision of nuclear safety and radiation safety, activities involving nuclear materials and other activities in the area of nuclear power involving sources of ionising radiation is based on the magnitude of the risk from the facilities and activities. A graded approach is taken towards the development and design of the radiation protection policy, the relevant legislation and the regulation supervision. This means that, among others, the degree of risk of exposure to ionizing radiation, the potential effects on the public health and environment in the event of a serious accident are taken into account. In other words: the greater the risk, the stricter the regime. Graded approach is implemented in the facilities and activities specific	

					requirements and rules set in the VATESI regulatory documents. Also see answer to the question No. 33.	
23	Pakistan	Article 8	Page 41	Lithuania may like to elaborate the qualification and experience criteria for VATESI inspectors.	All VATESI inspectors are required to have knowledge of particular technical area and relevant regulatory procedures. Management positions usually require at least 3 years of experience in the field of nuclear energy, some other non-management positions with significant functions – at least 1 year. Qualification and experience criteria for VATESI inspectors are defined considering functions assigned to particular position and listed in job descriptions. The need for particular human resources is evaluated pursuant to Rules of Procedure for Planning of Human Resources (establishes different methodologies for evaluating how many and what kind of employees are needed, describes procedure for management of personnel turnover and working time tracking, describes evaluation of distribution of functions). The hiring procedure ensures, that candidates meet the criteria described in the job description – a contest consisting of evaluation of general knowledge (centralized evaluation), evaluation of language skills (usually English and Russian) and evaluation of technical and special knowledge by a commission comprised of VATESI employees is organized.	
24	Belarus	Article 8.1	41	Are there the procedures to confirm the existence of the necessary regulator skills?	Yes, the need for particular human resources is evaluated pursuant to Rules of Procedure for Planning of Human Resources (establishes different methodologies for evaluating how many and what kind of employees are needed, describes procedure for management of personnel turnover and working time tracking, describes evaluation of distribution of functions). Statute of Training of VATESI personnel regulates methods of training, methods of evaluation of competence, conclusion of 5-year individual plans for improvement of competence, procedures for training new employees and evaluation of their suitability to start working individually, periodical evaluation of knowledge of inspectors, procedures of organizing training, etc.	

					Additionally, work of all VATESI employees is evaluated annually pursuant to Law on Civil Service and VATESI‘s Procedure of Personnel and Knowledge Management.	
25	Russian Federation	Article 8.1	p. 40	According to the National Report, in June 2016 the number of VATESI full-time staff positions was 75, and 68 of these 75 positions were filled (57 public servants, 8 employees under employment contracts and 3 state officials). Do new people filling 68 (out of 75) staff positions in 2016 have appropriate competences? What are requirements for the VATESI staff?	Yes, all staff of VATESI has appropriate competence (meet requirements, set in their job description). To clarify – VATESI did not fill 68 positions in 2016. VATESI hired only one new employee in 2016 (as of 31 December 2016 VATESI had 69 positions filled). Qualification and experience criteria for VATESI inspectors are listed in job descriptions and they are defined keeping in mind the functions assigned to particular position. All VATESI inspectors are required to have knowledge of particular technical area and relevant regulatory procedures. Management positions usually require at least 3 years of experience in the field of nuclear energy, some other non management positions with significant functions – at least 1 year. Qualification and experience criteria for VATESI inspectors are defined considering functions assigned to particular position and listed in job descriptions. The need for particular human resources is evaluated pursuant to Rules of Procedure for Planning of Human Resources (establishes different methodologies for evaluating how many and what kind of employees are needed, describes procedure for management of personnel turnover and working time tracking, describes evaluation of distribution of functions). The hiring procedure ensures, that candidates meet the criteria described in the job description – a contest consisting of evaluation of general knowledge (centralized evaluation), evaluation of language skills (usually English and Russian) and evaluation of technical and special knowledge by a commission comprised of VATESI employees is organized.	
26	Pakistan	Article 10	10.2, Page 52	It is mentioned that “One of the topics of seminar is the review of reports on events	Because of translation inaccuracy instead of “disadvantages of safety culture” mentioned in the report should be “possible weaknesses of safety culture”.	

				at INPP related to the disadvantages of safety culture". Lithuania may like to share foreseen disadvantages of safety culture.	In order to maintain personnel qualification and strengthen Safety Culture at INPP in constantly changing environment, resulted from implementation of decommissioning activities, recommendations and examples on assessment and improvement of work conditions, on assessment of possible negative consequences of work, on importance of proper use of work procedures and on application of the STARK methodology (Stop, Think, Act, Review, Communicate) are provided during mentioned annual seminars organised for the plant staff.	
27	Russian Federation	Article 10	para 10.2, p. 51	According to para 10.2 , Ignalina NPP uses safety culture indicators to measure its safety culture. How safety culture indicators are determined? Are they quantitative or qualitative?	Safety culture indicators at Ignalina NPP were determined by using attributes of strong safety culture (see IAEA Safety guide, GS-G-3.5. Appendix I) and by analysis of indicators and data of processes of integrated management system. Those indicators have quantitative nature and reflect the conditions under which safety at the plant is ensured.	
28	South Africa	Article 10	Section 10.1	Please list any of the regulatory requirements and guidance documents, or refer to another section.	Main requirements for operating organization to implement, maintain and develop management system giving due priority to nuclear safety are set in Nuclear Safety Requirements BSR-1.4.1-2016 “Management System” (approved by VATESI).	
29	South Africa	Article 10	Section 10	What is the methodology used by the regulator in performing independent safety assessments?	All safety justifying documents that are presented by licensees or applicants are being reviewed by VATESI employees in accordance with the internal procedures. The main purpose of the review is to assess the conformance of the activities with legislations and other requirements. The decision that is taken concerning approval of the particular document is being presented to applicant by letter. The structure of VATESI is created attempting to cover all necessary areas in nuclear safety, security and safeguard. However, if competences of employees or internal human resources are not sufficient, the external experts are being contracted, but the final decision on safety justifying documents is being taken by VATESI.	

30	South Africa	Article 10	Section 10.4	Safety as the highest priority is emphasised within VATESI Mission, MS documents, strategic and annual plans of the VATESI activities and nuclear safety requirements. Does VATESI monitor safety culture in its own organisation? If so, how do you monitor the status safety culture? If not, how do you ensure a sound safety culture in your organisation?	VATESI MS Procedure for Development of organizational culture defines safety culture monitoring, assessment and improvement measures. Annual survey of VATESI staff is carried out based on the SC attributes as defined within IAEA Safety Standard GS-G-3.1. Results of safety culture survey are analysed, report is prepared and necessary improvement measures are foreseen. Discussions are held about the results of safety culture survey in the internal VATESI top and middle management meeting. Report of safety culture survey is distributed to all VATESI staff. VATESI safety culture self-assessment was evaluated as good practice during 2016 year IAEA IRRS mission to Lithuania.	
31	Germany	Article 11	11 (1)	Financial resources: Does the Decommissioning Fund include final disposal?	New radioactive waste management facilities, which are or will be built as part of the INPP decommissioning process, such as landfill and near surface disposal facilities are being financed by the Ignalina International Decommissioning Support Fund, Ignalina Programme and co-financed by the INPP Decommissioning Fund or State budget. The INPP Decommissioning Fund is accumulated in the special Treasury Account and contains funds that have been transferred by INPP as part of their revenue earned from electricity sales. Since Unit 2 of INPP was shut-down on 31 December 2009, payments to the Fund ceased. Starting from 2014, all the INPP revenue earned from sales of redundant assets are allocated to the Fund. INPP Decommissioning Fund is very limited due two reasons: in soviet era there were no provisions for decommissioning and early closure of the INPP. Currently, Lithuania is developing a financing mechanism designed to the final disposal of the spent nuclear fuel and high level radioactive waste.	

32	Germany	Article 11	p. 62/11.1 4	Human resources: In table 11.4 the number of graduates is listed. In comparison to the preceding years a decline is visible. What is Lithuania intending to do in this matter?	The decline in the number of graduates could be explained by the fact that no major steps in the process of further development of new build project were taken during reporting period. Currently no issues related to the shortage of personnel at the level of operating organization and regulatory authority are identified. If the new build project will be further developed (currently the project is suspended) a decision on the new National professional training plan and for coordination of its implementation shall be taken by organizations concerned, including relevant ministries and scientific and educational organizations and institutions.	
33	Belarus	Article 11.1	54	How is the graded approach reflected in distribution of regulator resources in various areas of the regulatory activity?	The basic safety principles, including principle of use of graded approach, are established in the Law on Nuclear Energy, the Law on Nuclear Safety, the Law on Radioactive Waste Management and the Law on Radiation Protection. Pursuant to Laws and secondary legislation, the usage of graded approach is foreseen in various areas of regulatory activity. The graded approach is used in the following key areas: • for setting of overall legislation and supervision system for nuclear safety, radiation safety, security and safeguards. Requirements on use of graded approach in regulatory documents (Nuclear Safety Requirements and Nuclear Safety Rules) are established in VATESI legal acts and internal procedure documents; • for authorization process. Depending of a type of activities the license or permission shall be issued. The extent of documents necessary to be submitted for safety demonstration and the time limits for review of applications and decision making before an authorization depends on potential magnitude and nature of hazards associated with the nuclear installation; • for safety review and assessment. The depth and scope as well as procedure of the review and assessment of the facility or activity is established in the internal regulatory procedure document. In accordance with the procedure document, the persons performing review and assessment of safety documentation shall take in consideration the prescribed aspects, which are based on graded	

					approach, i.e. to give greater attention to the higher risk associated aspects; • for planning and performing inspections. An effective use of financial and human resources of the VATESI and to focus inspections on the areas of activities which are likely to pose higher risk to people, environment and employees of the licensee; • for applying enforcement measures. The Law on Nuclear Safety defines, that when imposing a fine the following factors shall be taken into consideration: gravity of the infringement; duration of the infringement; consequences of the infringement; circumstances that may mitigate or aggravate liability. Graded approach is also used in planning the needs of human resources. Rules of Procedure for Planning of Human Resources indicates aspects to consider while making proposals for improvement of current administrative structure and state of human resources. One of the aforementioned aspects is to propose improvements that have the biggest value to VATESI's activities and are most important to stakeholders. Graded approach is practically implemented in all methodologies, described in the Rules of Procedure for Planning of Human Resources, e.g., while monitoring the results of time tracking, management is obligated to make sure time used for particular activity is proportional to the scope and complexity of the activity, in the management of turnover all positions are evaluated and rated with regard to their impact to VATESI's main activities, etc.	
34	Belarus	Article 11.1	54	What measures have been provided for securing resources necessary to ensure the appropriate regulatory oversight of the ongoing decommissioning activities at Ignalina NPP?	VATESI's activities, including the oversight of the ongoing decommissioning activities at Ignalina NPP, are financed from the State budget. The need for particular human resources is evaluated pursuant to Rules of Procedure for Planning of Human Resources (establishes different methodologies for evaluating how many and what kind of employees are needed, describes procedure for management of personnel turnover and working time tracking, describes evaluation of distribution of functions).	

35	Russian Federation	Article 11.1	page 55	What is the overall cost of Ignalina NPP decommissioning programme, including the time period beyond 2038?	Based on the Ignalina NPP Final Decommissioning Plan approved in 2014 the current total anticipated Ignalina NPP decommissioning cost is 3377 MEuros, which is in line with the 2038 completion and includes the 718.3 MEuros spent to the end of 2013. After demolition of major part of INPP on-site buildings and facilities and the site restoration by 2038, the subsequent incurred cost will be related to operation of radioactive waste and spent nuclear fuel storage/disposal facilities. After decommissioning of INPP on it's site will remain several radioactive waste and spent nuclear fuel storage/disposal facilities. Taking in to account that some parts of this infrastructure will be needed for the management of the radioactive waste from the institutional waste producers Lithuania still under evaluation of the future streams of the waste and needed infrastructure.	
36	Belarus	Article 11.2	57	Please, explain the strategy to compensate for the departure of the qualified staff; Indicate any Regulatory Body processes designed.	In the regulatory body (VATESI) the need for particular human resources is evaluated pursuant to Rules of Procedure for Planning of Human Resources. It includes procedures of management of turnover. The procedure is as follows: - all positions are divided into groups indicating their likelihood of turnover, availability of human resources for replacement, the importance of the position, etc.; - a plan of measures for compensation of departure of staff is composed for positions, that are deemed to make highest impact upon leaving and most difficult to replace. As regarding Ignalina NPP the following strategy is applied to manage the departure of the qualified staff and compensate for it by applying the following measures in the frame of human resource management: 1. Determine staff positions that are important to nuclear and radiation safety as well as physical protection and ensure the reserve for these positions. 2. Monitoring of redundant personnel under social safeguard. Development of an annual list of redundant personnel. 3. Assessment of dismissed employees' critical knowledge. Development and implementation of knowledge accumulation and preservation plans.	

					4. Assessment of human resources demands taking into consideration personnel ageing factor. 5. Monitoring of young specialists' demand in INPP. Cooperation with educational institutions in order to engage young specialists with required qualifications to work in INPP. 6. Conduction of INPP personnel survey in order to determine the level of employees' loyalty and motivation. Development and implementation of means to improve personnel motivation. 7. Assessment of INPP personnel training and retraining needs. Development and implementation of annual INPP personnel training plan considering retraining needs of personnel. Requirements of a regulatory body in this field are determined in VATESI document Nuclear safety requirements BSR-1.4.1-2016 "Management System", IV section.	
37	Finland	Article 11.2	11	"One of the most important goals of VATESI in order to complete regulatory functions in a timely and appropriate manner is to maintain highly qualified and equipped with special knowledge personnel." Please elaborate how VATESI has organized its competence management taken into account the future needs of its staff?	Rules of Procedure for Planning of Human Resources regulate different methodologies for evaluating how many and what kind of employees are needed, describes procedure for management of personnel turnover and working time tracking, describes evaluation of distribution of functions. Statute of Training of VATESI personnel regulates methods of training, methods of evaluation of competence, conclusion of 5-year individual plans for improvement of competence, procedures for training new employees and evaluation of their suitability to start working individually, periodical evaluation of knowledge of inspectors, procedures of organizing training, etc.	
38	Finland	Article 11.2	pages 5 and 23	p. 5 says that "Decommissioning of various Unit 1 and Unit 2 facilities is underway." and p. 23 states that "They are under decommissioning	According to the provisions of the Law on Nuclear Safety an operation licence has to be kept and maintained during final shutdown period until nuclear fuel (including spent nuclear fuel) remains in the nuclear reactor. According to The Nuclear Safety Requirements BSR-1.8.2-2015 "Categories of Modifications of Nuclear Facility and Procedure of	

				process, but still operated and maintained under separate operational licences…" Please elaborate VATESI's plans to verify INPP's readiness for decommissioning before granting the decommissioning licence?	Performing the Modifications" the changes of organizational structure oriented to project management were agreed with VATESI. According to Nuclear Safety Requirements BSR-1.5.1-2015 „Decommissioning of nuclear facility" new facilities appear, such as "free release measurement facility", decommissioning management system and database, others are under developing still, such as interim spent fuel storage facility, solid waste treatment and storage facility, landfill facility for short-lived very low level waste, near surface repository for low and intermediate level short-lived radioactive waste. The Law on Nuclear Safety defines that a licence or permit can be amended at the request of licence holder when a nuclear facility is moving to the other stage of lifecycle of the nuclear facility (e.g., from operation to decommissioning) or the licence holder seeks to carry out the dismantling works of the facility. According to the Law on Nuclear Safety the decommissioning of nuclear facility is an activity that is a subject to be licensed (licence for carrying out decommissioning of a nuclear facility (or facilities). The procedures for issue and amendment of licences as well as the documents to be submitted in every case of authorisation are listed in the Law on Nuclear Safety and in the Regulations on the Issue of Licences and Permits Necessary to Engage in Nuclear Energy Activities. VATESI uses management system document "Procedure Document for Licensing" for the implementation of the aforementioned legal provisions. Specific requirements in the area of decommissioning are presented in the Nuclear Safety Requirements BSR-1.5.1-2015 „Decommissioning of nuclear facility" approved by Order No. 22.3-216 of the Head of VATESI on 30 November 2015. The Law on Nuclear Energy defines economic and financial conditions for the decommissioning.	
39	Russian Federation	Article 13	Section 13.1, pages 65-66	Would you please clarify what steps have been taken to move to GSR Part 2 "Leadership and Management for Safety"	The existing legislation, in particular, newly revised (in 2016) regulatory requirements BSR-1.4.1-2016 "Management System" covers the significant part of recently (June 2016) issued IAEA safety standard GSR Part 2 "Leadership and Management for Safety" requirements. The next revision of above regulatory requirements is foreseen in 2018.	

				(issued to replace GS-R-3 "The management system for facilities and activities").		
40	United States of America	Article 14	14.2 Page 71	What, if any, technical or regulatory issues posed challenges during the review of the VNPP Site Evaluation Report?	There were following challenges in VNPP site evaluation: 1. It was the first time such procedure was implemented in Lithuania for new NPP. 2. Coordination of review and assessment of site evaluation report process among different state institutions. 3. Site evaluation activities have started before having approved the national requirements with regard to it. The activities were mainly performed directly applying IAEAs safety standards. National legislation, which appoints competent state institutions which are participating in the review and assessment of site evaluation report, general safety requirements for site evaluation and endorse IAEA safety standards concerning site evaluation, were issued in the course of evaluation.	
41	Belarus	Article 14.1	69	Are the requirements to the content of the report on the NPP periodic safety analysis (once in ten years) elaborated? How does the regulatory authority use the results of periodic safety analysis in the regulatory activity?	The requirements concerning performance of periodic safety analysis and approval of the periodic safety analysis report are set in the Law on Nuclear Safety and VATESI's regulations. The written consultation is also published, which includes VATESI`s explanation of concerning purpose and performance of periodic safety analysis in the light of international standards. The relevant internal procedure of INPP is also approved. The accomplishment of improvements that are proposed in periodic safety analysis report is under control of VATESI. Currently the draft amendment to the Law of Nuclear Safety concerning periodic safety analysis is prepared. This amendment is prepared on purpose to implement Directive of EU 2014/87/Euratom (some provisions should be revised). The draft amendment also foresees procedural aspects on regulatory decision making, enforcement in case of violation of terms for periodic safety analysis, control of implementation of improvement measures.	
42	Belarus	Article 14.1	69	Was there an expertise of the decommissioning	The regulatory requirements Nuclear Safety Requirements BSR-1.5.1-2015 "Decommissioning of Nuclear Facilities" establish the number of	

				program of Ignalina NPP held, including ensuring major safety functions in conditions of the disassembly of the equipment important for safety?	binding conditions during the nuclear facility final shutdown stage, the stage at which Ignalina NPP is being currently operated: • It is prohibited to dismantle structures, systems components important to safety; • Structures, systems components that are not used to ensure safety during the nuclear facility final shutdown stage may be dismantled if they are easily separable from other structures, systems and components and they are not needed any more for operation or decommissioning purposes; • D&D activities are authorised to be performed only after development and agreement with the regulatory body of the technological design, safety analysis and justification report. Therefore, at present INPP implements only projects related to dismantling and decontamination of equipment and systems* that totally lost their functions and are isolated and have no impact on the safe SNF handling and safe operation of other remaining in operation safety systems and equipment. Each INPP D&D project is implemented only after agreeing of the technological design and corresponding safety analysis report with the regulatory body and after amending of the corresponding operational licences conditions, including development of the Environmental Impact Assessment Report for each D&D project and issue of the affirmative decision by the competent authority on the admissibility to perform D&D activities under consideration. Besides, the regulatory body also performs supervision of the performed D&D activities by organising regulatory on-site inspections. *In order to be designated as a finally shutdown unit and to start corresponding dismantling activities the analysis of the INPP systems that may be modified and isolated as a consequence of losing their functions was performed in the Decommissioning Projects (DP) for Unit 1 and Unit 2 Final Shutdown and Defueling Phase and was justified in the Decommissioning Safety Analysis Reports (DPs and DSARs) for Unit 1 and Unit 2 providing engineering assessment of each system including safety important systems during each defueling	

					stage and demonstrating that decommissioning activities covered in the corresponding Unit 1 and Unit 2 DPs can be safely executed. DPs underwent special expertise performed by the state competent authorities (VATESI, Ministry of Environment, Radiation Protection Centre, whereas special expertise of DSARs was performed by VATESI and Radiation Protection Centre) and the expertise conclusions were obtained in 2006 and 2010, respectively. Furthermore, after the fuel unloading from Unit 1 reactor core, assessment of the safe operation of Unit 1 during the 2nd stage of fuel removal from the spent fuel pools was carried out in 2010 taking into consideration the shutdown condition of Unit 2, experience gained during work performance during the 1st fuel removal stage and the experience of safe maintenance of Unit 1 during this stage, as well as actual condition of Unit 1 systems and equipment important to safety. The performed analysis enabled to reassess Unit 1 safety systems and their configuration that need to remain in operation during the fuel removal from the spent fuel pools and possibility to reclassify Unit 1 systems important to safety into normal operation systems that need to remain in operation or as backup systems based on the safety analysis performed earlier within Unit 1 DP. The list of Unit 1 systems important to safety and remaining in operation was included into Unit 1 Technical Specification establishing the safe operation limits and conditions of these systems during Unit complete defueling stage. The results of performed analysis as well as Technical Specification were also agreed with the regulatory body. Therefore, considering the binding conditions set in the regulatory requirements, safety systems remain in operation and are maintained at the same level as during Unit power operation unless they lose all design safety functions for subsequent decommissioning stages and the safety justification is performed and approved by the regulatory body.	
43	Belarus	Article 14.1	69	Have the activities on nuclear and radiation safety ensuring within the unloading of nuclear fuel	In order to be able to proceed with isolation and modification of some of the redundant systems during each defueling stage, the INPP safety systems analysis was performed to determine their status (safety class) during separate fuel removal stages by comparing performed	

				from the core during final decommissioning of Ignalina NPP been elaborated and passed safety expertise?	corresponding functions prior to shutdown and the need of these functions to be performed after the reactor final shutdown. Besides the analysis of INPP systems that may be modified and isolated as a consequence of losing their functions that is performed in decommissioning projects (DPs), estimates of INPP buildings primary masses and reference data for radiological characterization, methodology, results of radiological characterisation of systems and equipment, as well as decontamination activities during defueling stages, waste management issues, radiation protection matters, including personnel exposure doses, releases to the environment and respective assessment of public exposure, including measures related to public protection during identified incidents, as well as other organisation and technical issues related to compliance of the regulatory requirements during defueling stages, are also covered in decommissioning projects. Decommissioning Safety Analysis Reports (DSARs) provide justification of the system analysis performed in decommissioning projects and the sequence of work performance, as well as focus on identification of primary initiating events and analysis of likely accidents during each defueling stage, also analysis of radiation protection measures and their sufficiency is provided, including assessment of the personnel exposure doses, following the ALARA principle, radiological impact to the environment. DSARs also define the list of safe operation limits and conditions for defueling stages, etc. and demonstrate that safety is ensured by implementation of a number of indicated organisational and technical measures. DPs and DSARs underwent special expertise (see answer to the question 42). Besides, Decommissioning Environmental Impact Assessment Programme and the Decommissioning Environmental Impact Assessment Reports (EIAR) were developed and were subject to required public notification and state authorities' (VATESI, Ministry of Health, State Fire Rescue Service under the Ministry of Interior, Department of Cultural Heritage Protection, Visaginas Municipality)	

					review and assessment procedures leading to issue of the affirmative decision by the competent authority on the permissibility of the proposed economic activity. Since DPs and DSARs did not include any dismantling and decontamination (D&D) activities pursuant to the regulatory requirements for activities to be undertaken during the nuclear facility final shutdown stage, in order to be able to proceed with the implementation of each D&D project, separate design, EIAR and safety justifying documents are developed and undergo review and assessment in compliance with the provisions of legal acts of the Republic of Lithuania.	
44	Russian Federation	Article 14.1	p. 69	Was PSA performed for Ignalina spent fuel pool?	Probabilistic Safety Analysis for the Ignalina NPP spent fuel pools was not performed. Currently there are no plans to develop a specific PSA for the spent fuel pools, because the defueling of Ignalina NPP Units 1-2 is planned to be completed in 2022.	
45	Belarus	Article 14.2	73	How the supervision over the implementation of the Ignalina NPP decommissioning program is performed by the regulatory authority?	VATESI as Regulatory Authority establishes requirements; carries out safety assessment (Nuclear Safety Requirements BSR-1.5.1-2015 „Decommissioning of Nuclear Facilities”); issues licenses and supervises the licensed activities (the Regulations on the Issue of Licences and Permits Necessary to Engage in Nuclear Energy Activities); carries out inspections and has the right to impose sanctions (Nuclear safety requirements BSR-1.1.3-2016 “Inspections conducted by the State Nuclear Power Safety Inspectorate”, the Law on Nuclear Safety).	
46	Belarus	Article 14.2	73	Are the deviations of the decommissioning program the Ignalina NPP took place? If yes, was they agreed by the regulatory body and undergo safety expertise?	Pursuant to the provisions of the Law on Nuclear Energy, the NF Final Decommissioning Plan (FDP) shall be updated at least every 5 years. The updated version of the Ignalina NPP FDP was approved in 2014 and includes all of the decommissioning process changes that have occurred. The most substantial changes in the decommissioning process are related to: • The overall process duration; • The total anticipated cost; • Scope Definition;	

					• Planning system, etc. A number of reasons lead to the above mentioned changes: • delay in construction and commissioning of radioactive waste, spent nuclear fuel management and storage facilities; • increased duration of the reactor dismantling than anticipated originally; • updated data on the waste inventory based on the results of a recently completed characterisation; • increased labour rates, etc. The updated FDP was agreed and approved in compliance with the Law on Nuclear Energy with the following state authorities: VATESI, Ministry of Environment, Ministry of Health, Ministry of Social Security and Labour, Ministry of Energy (approving institution).	
47	Belarus	Article 15	76	What measures are being taken by the Lithuanian side to prevent significant excess of the radiation dose for the population of Belarus (10 mSv / year) as a result of activity on the site of the Ignalina NPP?	The risk of nuclear or radiological emergencies and possible anticipated effects after the final shutdown in 31 December 2009 of both units of Ignalina NPP is only minimal. In the course of decommissioning activities no likely significant adverse transboundary impacts were identified during transboundary EIA procedures in which Belarus fully participated. In order to ensure that EIA is based on reliable and detailed information every EIA report of a subsequent decommissioning project takes into account results of the previous assessments. Thus the overall environmental impact due to Ignalina NPP decommissioning is assessed on the basis of the latest information. In order to prevent the excess doses to the critical group of the population the following measures are carried out: 1. Continuous activity monitoring of all on-site organized sources of airborne and waterborne releases. 2. Monitoring of the operational efficiency of the purification systems of the air discharged into the atmosphere. 3. Application of the conservative approach in planning of the assumed airborne and waterborne release activities on the Ignalina NPP site. The limit values of discharge and release activities during the decommissioning of the Ignalina NPP are calculated according to regulatory requirements BSR-1.9.1-2011 “Norms on Radionuclide	

					Releases into the Environment from Nuclear Facilities and Requirements to the Plan on Radionuclide Releases into the Environment". These requirements set 0,2 mSv dose constraint for the members of the population reference group and which has to be applied during the nuclear facility design, operation and decommissioning. The annual effective dose of the critical group of the population due to airborne and waterborne releases amounted to: • In 2013 – 4.82E-08 Sv/year • In 2014 – 1.34E-08 Sv/year • In 2015 – 7.49Е-08 Sv/year The value of the planned annual discharge and release activities make up 10 % of the limit values and the exposure incurred by members of the population reference group was found insignificant and constituted only a very small portion of the dose constraint. The current radiological monitoring data at the site shows that actual releases to environment and exposure of population of Lithuania and Belarus fully comply with international standards on radiation protection. If during the implementation of Ignalina NPP decommissioning projects the monitoring data will reveal factors that may result in a significant adverse transboundary impact, such information will be immediately provided to the Republic of Belarus and consultations on necessary measures to reduce or eliminate the impact will be held in accordance with the Espoo convention.	
48	Russian Federation	Article 15	Article 15, para 15.3, page 83	Could you please give activity limits set in Lithuanian regulations for radionuclides in foodstuffs, drinking water and soil?	Lithuania Republic is using reference level for food set in the EU documents. Only 134,137Cs is regulated in foodstuffs and feeding stuffs that is imported to EU from third countries. Maximum permissible levels of radionuclides in foodstuffs are regulated in Council Regulation (EC) No 733/2008 of 15 July 2008 on the conditions governing imports of agricultural products originating in third countries following the accident at the Chernobyl nuclear power station and Council Regulation (EC) No 1048/2009 of 23 October 2009 amending Regulation (EC) No 733/2008: The accumulated maximum radioactive level in terms of caesium-134	

					and -137 shall be: (a) 370 Bq/kg for milk and milk products listed in Annex II of EC No733/2008 and for foodstuffs intended for the special feeding of infants during the first four to six months of life, which meet, in themselves, the nutritional requirements of this category of persons and are put up for retail sale in packages which are clearly identified and labelled ‘food preparation for infants’; (b) 600 Bq/kg for all other products concerned. Other regulation that includes more radionuclides is dedicated for the food that is imported from Japan after accident in Fukushima. Requirements of foodstuffs imported from Japan are fixed in Commission Implementing Regulation (EU) No 322/2014 of 28 March 2014 imposing special conditions governing the import of feed and food originating in or consigned from Japan following the accident at the Fukushima nuclear power station. Requirements for radioactivity in water are set in the Lithuanian Hygiene Standard HN 24:2003 “Requirements for Safety and Quality of Drinking Water”. The 3 parameters are set: tritium (max permitted level 100 Bq/l), radon (max permitted level 100 Bq/l) and annual effective dose, less than 0.1 mSv. Those requirements correspond to the requirements set in the Council Directive 2013/51/EURATOM of 22 October 2013 laying down requirements for the protection of the health of the general public with regard to radioactive substances in water intended for human consumption. Exemption levels are used for radionuclides in soil.	
49	United States of America	Article 16	16.4 Page 93	What were the results of the 2016 table top exercise to test information exchange and provision to public and coordination of actions in case of nuclear accident at INPP?	The main objectives of table-top exercise which took place on 14 April 2016 in Visaginas Municipality were to test and improve arrangements of information exchange between Ignalina NPP Emergency Preparedness Organization and Emergency Situation Operation Centre of Visaginas municipality in case of nuclear accident in Ignalina NPP. The main tasks of the exercise were accomplished, some recommendations for improvement by exercise evaluators and observers were provided. It was noted that information provided from Ignalina NPP to Visaginas municipality has to be more brief and clear, concentrating on protective measures for population and not on	

					technical details of accident. Recommendations for improvement of some aspects of exercise organisational questions were also provided. Ignalina NPP accepted the proposed recommendations to be implemented and updated the appendices of the “Instruction on Notification Procedure of the Heads of INPP EPO Headquarters in Case of an Accident, DVSta-0812-20”. The appendices were updated by providing a more clear way how the information and recommendations on urgent protective measures for the population is communicated to the municipalities in case of the accident at Ignalina NPP.	
50	Belarus	Article 16.1	85	The Emergency Preparedness Plan is prepared based at the IAEA requirements GSR Part 2. What activities are planned related to its updating in accordance with the IAEA requirements GSR Part 7?	Implementing the IAEA requirements GSR Part 7 into the national legislation, in 2016 Lithuanian hygiene norm HN 99:2011 ,,Protective actions of general public in case of radiological or nuclear accident“, approved by the Order of the Minister of Health No. V-1040, 7 December, 2011, has been revised (hereinafter – Hygiene Norm). In the amendment of the Hygiene Norm, approved by the order of the Minister of Health No. V-1044, 29 August, 2016, emergency planning distances (the extended planning distance (EPD) and the ingestion and commodities planning distance (ICPD) have been approved. This amendment also describes the basis of the protection strategy of the public: reference level of residual effective dose (100 mSv), generic criteria and operational criteria. This amendment gives examples of application of optimized protective actions in case of nuclear or radiological emergency which may occur in the territory of Lithuania or in another State. On 23th of August 2016, the Minister of Interior issued an Order No. 1V-581 for establishment of the institutional working group of experts for the revision of the National Residents Protection Plan in Case of Nuclear Accident (hereinafter referred to as – Plan). The Plan is being updated to correspond current nuclear safety and radiation protection requirements and to take into account the challenges of the situation in the country caused by implementation of nuclear energy projects in neighbouring countries. The revision of the Plan is ongoing accordingly to the IAEA	

					requirements GSR Part 7, Hygiene Norm and recommendations of HERCA-WENRA approach. The revised Plan will contain updated protective strategies of public in case of nuclear accident, in the territory of Lithuania or in another State.	
51	Belarus	Article 16.1	85	How the requirements of the IAEA GSR Part 7 are taken into account for identification of categories of preparedness for emergency response in case of a nuclear or radiological emergency?	Emergency preparedness categories based on the requirements of the IAEA GSR Part 7 are described and included in Hygiene Norm, approved by the order of the Minister of Health No. V-1044, 29 August, 2016. Emergency preparedness categories serve as the basis for a graded approach of application of justified and optimized protective actions. Emergency preparedness categories are taken as a basis for planning of response actions and are applied in the National Residents Protection Plan in Case of Nuclear Accident. Nuclear facilities in Lithuania as well as nuclear facilities under construction in neighbouring countries are categorised in this plan according to the categories established in the above mentioned Hygiene Norm.	
52	Russian Federation	Article 16.1	Article 16, para 16.3, page 91	Could you please provide more details on the improvement of accident management preparedness in case of emergency at Ignalina NPP after completion of the stress-tests in the light of the lessons learned from the Fukushima NPP accident. What exactly was improved in respect of the accident management in case of emergency?	The Plan of Strengthening Nuclear Safety in Lithuania (National Action Plan), that is related to European Union “stress tests”, includes safety improvement measures, as well as measures related to emergency preparedness and accident management (measures No. 3, No. 5 – 14). Status and progress of the all measures included in the National Action Plan are summarized in the Table 1 of Section A2 of the National Report. Also see answer to the question No. 10.	
53	Belarus	Article 16.2	86	How and who assesses the risks for the population of the Republic of Belarus	Please refer to question No 47. The risk for the population of the Republic of Belarus resulted from Ignalina NPP in case of occurrence of a radiological emergency	

				resulted from Ignalina NPP in case of occurrence of a radiological emergency situation, related to transboundary transfer of radiation substances?	situation, related to transboundary transfer of radiation substances was assessed during transboundary EIA procedures. The decisions on EIA were taken by the Ministry of Environment in consultations with authorities responsible for nuclear safety, radiation protection, fire prevention, public health and etc. as well as transboundary consultations with possibly affected Parties. Responsibilities of different institutions in the case of emergency, including nuclear or radiological emergency, are set in the State Emergency Management Plan. All institutions responsible for nuclear and radiological emergency preparedness with their functions are listed in the State Plan of Public Protection in Case of Nuclear Accident (hereinafter referred to as – Plan) approved on 18th January 2012 by the Resolution No 99 of the Government of the Republic of Lithuania. Plan identifies measures what should be taken at state level for: - organizing and implementing protective actions, - minimizing the risk of deterministic and stochastic effects of ionizing radiation for residents after release of radionuclides to environment, - measures for protection of the property of residents as well as the environment from radioactive contamination due to nuclear accident in nuclear facility (in the Republic of Lithuania or outside), - when it is forecasted that release of radioactive materials beyond the sanitary protection zone will certainly take place under the threat of state-level emergency or in case of state-level emergency. Wide radiological monitoring programme is implemented in the vicinity of Ignalina NPP. Automatic gamma dose rate and spectrometry stations are installed around NPP that gives possibility to see on-line data and increase of radioactivity in the environment if it happens. Results of National environmental radiological monitoring are available on Environment protection Agency website; moreover data of gamma dose rate from national network are available on EURDEP website in on-line mode. Ignalina NPP provides gamma dose rate data on its website as well (http://www.iae.lt/en/radiation-monitoring/).	

54	Belarus	Article 17.1	97	Please, provide a scenario of transfer of radionuclides by water in the area of the Ignalina NPP location.	Radiological impact of new NPP on downstream water system in terms of effective dose is estimated in Chapter 8 of the Environmental Impact Assessment Report of the New Nuclear Power Plant in Lithuania (http://www.vae.lt/sites/vae.dd/files.en_part1.pdf, http://www.vae.lt/sites/vae.dd/files.en_part2.pdf). Scenario of radionuclide transfer through river continuum: Druksiai –> Prorva –> Druksa –> Dysna –> Daugava –> Gulf of Riga is presented and possible transboundary impacts are assessed. The methodology used and obtained results are provided in Chapter 8.11.1.1 of the same EIA Report “Impacts due to waterborne releases”. Scenarios of radionuclides transfer by water were described and assessed during EIA procedures for the Ignalina NPP decommissioning projects. The EIA documents submitted to Belarus contain detailed information on possible radionuclide paths and their impacts. The results received during implementation of both monitoring programmes (Ignalina NPP and national) did not show any increase of radioactivity levels in the surroundings of Ignalina NPP during last 10 years (taking to account start of decommissioning). On the contrary, discharge to the environment has decreased after shutting down of reactors; activity concentrations of some radionuclides (for example Mn-54 in Druksiai Lake) are below detection limits for last 2-3 years. According to the radiological monitoring data discharge of radionuclides to the environment is even smaller than it was estimated on EIA phase, so activity concentrations of radionuclides in the water of Druksiai lake are similar like in other watercourses. Pollution of water from the bottom sediments as secondary source is not observed.	
55	Russian Federation	Article 17.4	p. 109	It is pointed out in section 17.7 that as of May 2016, all the cosignatory countries have performed the stress-test exercise, except for Russia and Belarus. Stress tests at Russian NPPs were performed in 2011,	According to the declaration of 23 June 2011, the signatories agreed to commit nuclear operators to self-assessments of their nuclear power plants, as well as to invite national regulatory bodies to present national reports, and to make use of a transparent peer-review system enhancing credibility and accountability of the comprehensive risk and safety assessments. In this regard, Lithuania considers the stress-test exercise as performed only after (1) the stress test performing party presents the national peer review report to the EU Commission and (2) the stress test	

				and in 2012, their results were presented at 2nd extraordinary meeting.	performing party receives the EU Commission's evaluation of the national report.	
56	Russian Federation	Article 17.4	page 109	According to the United Nations Convention on Environmental Impact Assessment in a Transboundary Context, it is necessary to conduct public hearings on the environmental impact of potentially hazardous facilities at the territories of neighbouring countries as well. Do you plan to conduct public hearings on the territory of the Russian Federation?	United Nations Convention on Environmental Impact Assessment in a Transboundary Context sets framework when and how Environmental Impact Assessment (EIA) procedures in transboundary context should be carried out including organisation of public participation procedure. For Ignalina NPP decommissioning projects transboundary EIA procedures with affected Parties are finished. Decisions were taken in 2007-2009. At that time Russian Federation hadn't used its right to participate in transboundary EIA procedures. Regarding the EIA of the planned economic activity „New Nuclear Power Plant in Lithuania" (Visaginas NPP), Russian Federation, as other neighbouring countries, was invited to participate in the EIA process. Official notification was submitted to Russian Federation in 2007. However, no official response nor comments were received from Russian Federation regarding the EIA documents.	
57	Belarus	Article 19.3	120	For what reason, in violation of established international practice for decommissioning of nuclear facilities and nuclear safety requirements at the present time, work is underway on a partial dismantling of the equipment units of the Ignalina NPP, including system equipment, ensuring nuclear and radiation safety, while as most of the spent nuclear fuel is not unloaded	For the smooth transition from the operation to decommissioning the Transition Period - in accordance with the IAEA terminology, or Nuclear Facility Final Shutdown Process – based on the national regulatory terminology is defined. Nuclear facility final shutdown is a process during which the Nuclear Facility power unit is permanently shutdown with no intention to renew the operation and the licensee implements measures related to finalisation of the Nuclear Facility operation, enabling to prepare for nuclear facility decommissioning, such as defuels units and transfers all nuclear fuel to storage facility, isolates, decontaminates and dismantles systems that are not needed any more, including performance of other activities (definition provided in the regulatory requirements Nuclear Safety Requirements BSR-1.5.1-2015 "Decommissioning of Nuclear Facilities").	

				from the core reactors and storage pools?	Based on the IAEA Safety Considerations in the Transition from Operation to Decommissioning of Nuclear Facilities, Safety Reports Series No. 36, “the goal during the transition period is to achieve a significant reduction in radiological hazards through the safe termination of operational activities and removal of radioactive material, and to place the facility in a stable and safe condition until the decommissioning strategy is implemented. During this period, control of any remaining spent fuel, other radioactive material or nonradioactive hazardous material should be maintained, and the safety of the workers and the public, and protection of the environment, should be ensured”. Based on the binding conditions established in the regulatory requirements (see answers to questions 42, 43) none of the D&D activities that are currently performed at INPP are in violation of the national regulatory requirements or contradicts the international practice. INPP Units are designated as finally shutdown and are operated in accordance with the safe operation conditions and limits set in the Technical Specifications for operation of systems and equipment important to safety and remaining in operation. Reactor of Unit 1 is completely defueled, reactor of Unit 2 is partially defueled, therefore all systems important to safe management of the spent fuel stored in SPH and Unit 2 reactor and other remaining in operation safety systems and equipment remain in operation under the same safety requirements as during the INPP power operation. INPP implements only projects related to dismantling and decontamination of equipment that totally lost its functions and is taken out of operation, isolated, has no impact on the safe SNF handling and safe operation of other remaining in operation safety systems and equipment and are not needed any more for subsequent decommissioning purposes. In accordance with the Technical Specifications developed on the basis of the regulatory requirements equipment and systems important to safety may be dismantled only after complete removal of SNF from the	

					Unit. Structures, equipment and systems important to safety may be re-classified as normal operation structures, equipment and systems only after loosing of all design safety functions, carrying out of safety assessment and its agreement with VATESI. Equipment and systems that are not used to ensure safety may be dismantled before SNF removal from the Unit. D&D projects are implemented following the principle “from non-contaminated equipment to contaminated equipment” having prior obtained related permits from the regulatory authority for the implementation of the activity under consideration. The above-mentioned permits are granted by VATESI only after development and agreement with VATESI of separate Technological Projects and Safety Analysis Reports for each D&D project.	
58	Germany	Article 19.6	p. 127	Could Lithuania give further insights on the reported events significant to safety for the past three years?	Nine events were reported to VATESI in 2013-2015. The short information, including main causes and corrective actions is provided below: 1. Actuation of the AZ-1 protection on the shutdown reactor during maintenance works at Unit 2 On 2013-06-03 on the shutdown reactor of Unit 2 during the replacement of the power supply unit of the fast acting scram system (FASS) the maintenance staff instead of disconnecting the failed power supply unit disconnected the analogous working power supply unit located in the same cabinet. It led to actuation of the 12 control rods of the FASS. Causes: human error and lack of surveillance over the work performed by the maintenance staff. Main Corrective Actions (MCA): MCA addressed to the personnel performing maintenance works on the reactor control and protection systems (Pre-job briefing, extra briefing, usage of checklist). Other personnel was familiarized with event report. 2. Unsuccessful testing of emergency diesel generator (DG-12) at Unit 2 On 2013-06-04 during the testing of the emergency DG-12 after the planned maintenance decrease of the water pressure in the inner cooling	

					circuit of the diesel was detected due to the crack of the tenth cylinder liner of the DG-12. Causes: failure of the equipment and insufficient methods of inspection of the equipment. Main Corrective Actions: МСА were addressed to improve the inspection and control procedures and the use of modern equipment (endoscope) to check the integrity of the cylinder liners. 3. Loss of power of some INPP consumers due to short-circuit in the 110 kV network during the storm On 2013-06-08 during the storm after the lightning stroke the single-phase short circuit of the 110 kV network occurred that led to disconnection of some of the INPP consumers due to voltage reduction. Causes: failure of electrical equipment and insufficient surveillance over the electrical equipment. Main Corrective Actions: MCA were addressed to improve the equipment maintenance, the purchase of the modern uninterrupted power supplies and appropriate changes were made in the procedures. 4. Disconnection of air circuit breakers of two power lines of 330 kV due to activation of the jet relay during maintenance works on the 7TR (working transformer) at Unit 2 On 2013-08-23 during performance of maintenance works on the 7TR performed by the contractor’s staff, without the employer’s permission and briefing, activation of the jet relay occurred and as a consequence two power lines of 330 kV were disconnected. Causes: contractor’s staff did not follow the procedures while performing the works and insufficient surveillance over the contactors’ works. Main Corrective Actions: MCA were addressed for improvement of surveillance of contactors works, some changes were made in procedures describing interactions between INPP and contractors. Event report was also submitted to contractor. Plant’s personnel were familiarized with the event report. 5. Automatic powering of the section 2BX (6kV reliable power supply) from DG-10 after its erroneous tripping by operational staff .	

					On 2013-09-27 the section 2BX was erroneously de-powered by the operational staff as a consequence of automatic powering from DG-10 according to the design. Causes: human error and insufficient surveillance over work performance by the operational staff. Main Corrective Actions: MCA addressed to the shift personnel performing putting into operation equipment and taking it out for repair (Pre-job briefing, extra briefing, usage of checklist). Other personnel were familiarized with the event report. 6. Damage of trunnions of SFA (spent fuel assembly) and overpack-sleeve during SFA handling (2013-11-12, Unit 1) Causes: the operator did non follow the procedure requirements and insufficient surveillance over the works performance. Main Corrective Actions: MCA addressed to the personnel performing SFA handling (Pre-job briefing, extra briefing). Other personnel was familiarized with the event report. 7. De-energizing of the servo drives of 12 FASS control rods On 2014-03-24 the alarm in the Main Control Room was trigged due to insertion of 12 rods of FASS into the core of Unit 2 reactor due to loss of power in servo drives as a consequence of disconnection of feeder powering servo drives. 8. Insertion into the core of 12 rods of FASS This event occurred at Ignalina NPP Unit 2 on 2014-04-23. This event is similar to previous one (No.7). Causes: human error and insufficient surveillance over the personnel work. Main Corrective Actions: Events No. 7 and No. 8 are similar and the event No. 8 took place before the analysis of the event No.7 was completed and corrective actions had been defined. Both events had the same causes, the same nature and, accordingly, the same МСА were directed at improving the procedures for work with control and protection system of the reactor. 9. Ingress of water on electrical equipment due to deficiencies in the organization of dismantling activities	

					On 2015-06-09 drops of water were detected on the ceiling, floor and electrical and I&C equipment of Unit 1 main control room. It happened due to dismantling works of the pipe in the premises located above. Causes: human error and insufficient surveillance and weakness of work's orders procedure. Main Corrective Actions: МСА were addressed to improving the procedures of dismantling works and change of work's order form and improving interactions between the shift's staff of different departments.	
59	Russian Federation	Article 19.6	p. 126	In 2013-2015, Ignalina NPP reported to VATESI nine various events. Could you please list these events and ensuing measures, because this information may prove useful for other CPs as they go on with NPP decommissioning.	For the event description, including corrective actions, see answer to Q58.	
60	Russian Federation	Article 19.6	para 19.26, p. 127	Could you please clarify how many of all "reported' events in 2013-2015 underwent in-depth analysis of human factor impact on safety (human errors and/or organisational factors) using special procedure mentioned in para 12.5 (page 64)? Could you give 1-2 examples of such events, with pointing out their	Four out of nine events reported to VATESI in 2013-2015 undergone MTO (man - technology - organization) analysis. As an example of the MTO method application some details of the analysis carried out for the event –“Automatic powering from DG-10 on the reliable power supply section 2BX (6kV) after its erroneous tripping by operational staff “ is provided below. During the МТО analysis of this event shift tasks and actions as well as operational procedures were analysed, interviews were performed with staff, including the shift supervisor of the Electrical Shop (SSES hereinafter) under control of whom the staff of ES performed the switching in electrical circuits. According to the shift task it was necessary to put into operation the start-up transformer №8 (8PRT hereinafter) and after that it was necessary to take out from operation the №7 (7PRT hereinafter).	

				circumstances, causes and contributing factors?	In the procedures it is indicated that both works must to be done according to the appropriate special checklists (Form of switching). During the interview SSES explained that according to the shift task the 8PRT putting into operation was carried out according to a separate form of switching. SSES considering that the 7PRT is idling and does not require development of the form of switching and gave the command to disable the 7PRT. But the section 2BX was powered from the 7PRT. De-energizing of the section 2BX triggered automatic launch of DG-10 and section 2ВХ again was powered from DG-10 according to the design. Based on the procedure analysis and interview results the SSES actions have been classified as erroneous assessment of equipment configuration under the influence of the following factors: - The event took place on Friday. Usually on Fridays a lot of switching and putting into operation of equipment are performed due to completion of repair works performed by staff of other shops during the week. - For the SSES it was the first working shift since 16.00 p.m. after long rest (3 days) and he needed more time and attention to familiarize with the changes in the documentation and to analyse the equipment configuration which occurred during his rest in order to properly assess and plan the upcoming work. - During the SSES's rest significant changes were made in electrical circuits, but the checklists (Form of switching) for the taking out of operation-input into operation of PRT have not been filled. This required additional working time for their filling in. In the MTO report of this event it was also stressed that according to the international experience, employees with extensive work experience quite often do no demonstrate appropriate critical approach and overestimate their own capabilities.	
61	Russian Federation	Article 19.7	Section 19.30, 19.31	What does Lithuania think about arranging periodic meetings with Russian experts (in particular, from	Based on the different cooperation programs under the IAEA's umbrella, a number of workshops and technical visits related to exchange of experience in the field of decommissioning and radioactive waste management are organised at INPP with participation of foreign	

				NIKIET and Russian NPPs)? We believe that such meetings would be useful and even beneficial for both parties, considering decommissioning activities to be launched in the near future on Russian RBMK plants.	specialists. In 2014 representatives of the Leningrad Nuclear Power Plant participated in one of such meeting, in 2015 exchange of experience in the field of decommissioning with the Ukrainian specialists was held at INPP, in 2016 a workshop with participation of the specialist from Sweden, Finland, Russia and Lithuania was held at INPP and INPP is further willing and looking forward to participation in such activities.	
62	Belarus	Article 19.8	132	How many containers CONSTOR RBMK 1500/M2 from the Ignalina NPP units were loaded by the beginning 2016 interim spent fuel storage?	After receiving the operational licence for the Interim Spent Fuel Storage Facility in 2016-09-20 within the frame of „hot“ trials 3 CONSTOR RBMK 1500/M2 casks loaded with spent nuclear fuel were transferred from Units (2 from Unit 1 and 1 from Unit 2) to the Interim Spent Fuel Storage Facility by the end of 2016. By the completion of „hot“ trials in the mid of 2017, 10 CONSTOR RBMK 1500/M2 casks should be transferred for storage.	
63	Belarus	Article 19.8	132	Please, specify the dimensions of the main technological body of the interim spent fuel storage for the beginning of 2016.	The Interim Spent Fuel Storage Facility (ISFSF) is dedicated for storage of CONSTOR RBMK 1500/M2 casks. The ISFSF consists of the gate house, main storage building and auxiliary buildings. The gate house is dedicated for checking of personnel and transportation. Three basic areas are distinguished at the main casks storage building: Reception Hall, Storage Hall, and Fuel Inspection Hot Cell. The total area of the storage building is 5563.38 m2. The size of storage building is 158.35X40.75 m, the maximum height of the ridge 24.075 m above 0.00. Due to radiation safety reasons the walls of the Reception Hall and Storage Hall are made of reinforced concrete, 600 mm thick; the walls surrounding the Fuel Inspection Hot Cell and cask preparation area are also made of reinforced concrete, 1250 mm thick.	
64	Belarus	Article 19.8	132	Please, specify the volume of containers for the collection of liquid radioactive waste, the volume of the hot cell and	Special tanks for collection of liquid radioactive waste of the following volumes are used: • TW13B01,02-2x5000m3, • TW11B02,04-2x1500m3. The Fuel Inspection Hot Cell at the Interim Spent Fuel Storage Facility	

				the volume of container storage room.	(ISFSF) serves for inspection and repackaging of the SNF if a cask has to be unloaded which is classified as unscheduled exceptional operation. The volume of the Fuel Inspection Hot Cell is 87.7 m2. The total volume of the ISFSF Storage Hall is 2985 m2.	
65	Belarus	Article 19.8	132	Please, specify the amount of discharged spent nuclear fuel and the volume of "wet" and "dry" storage, storage occupancy as of January 1, 2016.	“Wet” storage of spent nuclear fuel at INPP as of January 1, 2016: • Unit 1 spent nuclear fuel storage pools – 7175 fuel assemblies; • Unit 2 reactor - 1134 fuel assemblies; • Unit 2 spent nuclear fuel storage pools – 7246 fuel assemblies. “Dry” storage of spent nuclear fuel at INPP: Dry Type Interim Spent Nuclear Fuel Storage Facility – 6016 fuel assemblies.	
66	Belarus	Article 19.8	131	Sec. 19.38 of the Report states that the long-term safety of spent nuclear fuel and long-lived radioactive waste will be ensured by constructing a deep geological repository in Lithuania. What are the normative legal acts, including technical normative legal acts in this regard have already been developed? And which ones are planned to be elaborated in future?	Deep geological repository is a nuclear facility. Legislation, for implementation (sitting, design, construction, operation, closure and post closure) of such a nuclear facility, is in place. Main legal acts directly applicable to deep geological repository are following: •Law on Nuclear Energy; •Law on Nuclear Safety; •Law on the Management of Radioactive Waste; •The Resolution No. 1427, December 23rd, 2015, of the Government of the Republic of Lithuania on the approval of Program on Radioactive Waste Management; The newest legal act – nuclear safety requirements BSR-3.2.2-2016 “Radioactive waste disposal facilities”, covering safety requirements for disposal of all type of radioactive waste including deep geological repository was approved by the head of VATESI in the end of 2016.	
67	Belarus	Article 19.8	131	The implementation of which activities is envisaged with a view to the construction of the point of deep geological disposal in Lithuania? Is there any preliminary research held	Activities and timeline envisaged with the view to the construction of deep geological repository in Lithuania are described in “Program on Radioactive Waste Management” approved by the Government of the Republic of Lithuania (Resolution No. 1427, December 23rd, 2015). The Program, among others, envisages site selection and confirmation until year 2033, technical design completion / construction start in year 2040 (starting from auxiliary buildings e.g. facilities for reloading of	

				for the site selection of such a repository?	spent nuclear fuel to containers for disposal), construction finish by year 2066. For the time being site selection activities for deep geological repository are at area survey stage – based on available geotechnical information the whole area of Lithuania have been screened looking for potential sites, preferred geological formations have been identified, however no particular site have been selected yet for more detailed investigations.	
68	Belarus	Article 19.8	132	Sec. 19.40 of the Report states that according to the Program of development of radioactive waste, long-lived radioactive waste must be separated from the short-lived radioactive waste, placed in the containers without air conditioning and deposited for 50 years in the storage for long-lived radioactive waste. Has there been performed safety assessment of long-lived radioactive waste in unconditioned form for such a long period?	Yes, such safety assessment was performed in the Safety Analysis Report which was carried out in the frame of B3,4 Project (New Solid Waste Management and Storage Facility).	
69	Belarus	Article 19.8	132	Sec. 19.40 of the Report contains information on the solid radioactive waste of Ignalina NPP. Currently, solid radioactive waste stored in buildings number 155, 155/1, 157, 157/1, are	Within the frame of B2,3,4 Project (Retrieval facilities from buildings 155,155/1, retrieval facilities from buildings 157, 157/1 and New Solid Waste Management and Storage Facilities) 3 SARs (one for retrieval from 155, 155/1, other for retrieval from 157, 157/1 buildings and one for waste management and storage) were developed. In these SARs the safety of retrieval, sorting and conditioning of the solid radwaste from the existing INPP storage facilities were justified.	

				posted without pre-treatment and conditioning. Are there established any time limits to perform the work on the extraction, separation and conditioning of these radioactive waste?	The time frame for perform of this work was envisaged within the B2,3,4 Project. The retrieval will be performed within the period of 10 years after commissioning of the all facilities (starting from 2018).	
70	Belarus	Article 19.8	132	Sec. 19.40 of the Report stated that INPP performs a preliminary study to determine the feasibility of converting of the storage of bitumized radioactive waste into disposal facility. Is it planned to hold the assessment of its transboundary impact?	Based on the B20 Project (converting bituminized radioactive waste storage facility into disposal facility) Implementation Action Plan, performance of the environmental impact assessment in the transboundary context is included.	
71	Belarus	Article 19.8	132	Sec. 19.40 of the Report indicates that the graphite radioactive waste accumulated as a result of the dismantling of the fuel channels will be temporarily stored in unit 158/2 for its subsequent transportation to the storage of solid radioactive waste in expectation of the construction of the repository in deep geological formations. What methods of conditioning are provided to	Methods of radioactive graphite conditioning for its long-term storage and subsequent disposal will be defined during the safety analysis report preparation. SAR for disposal of long-lived radioactive waste, including graphite, will be prepared in 2035-2038. Considering the storage of graphite, Lithuania preliminary does not plan to perform any conditioning other than removal of the free water from graphite, if necessary, before its packaging. Any graphite operations prior to disposal shall be chosen so that they do not restrict further stages of waste management, do not impose excessive safety issues, do not prejudge the choice of any methods of treatment, conditioning of radioactive graphite and final disposal in advance.	

				ensure their safety during long-term storage and subsequent disposal?		
72	Belarus	Article 19.8	134	Is there a periodic safety assessment of the temporary storage facilities for radioactive waste, including in terms of the justification of volume?	According to Lithuanian legislation periodic safety assessment of storage facilities of radioactive waste shall be performed every 10 years. Yes, such works (justification of volume) are performed within the frame of periodic safety assessment of the temporary storage facilities for radioactive waste.	
73	Belarus	Article 19.8	134	What legal regulations set requirements for the containers, which are used for storage and transport of all types of radioactive waste and spent nuclear fuel?	Nuclear Safety Requirements BSR-3.1.1-2016 “Management of Spent Nuclear Fuel in a Dry Type Storage Facility“ establish requirements for containers for spent nuclear fuel. Nuclear Safety Requirements BSR-3.1.2-2010 “Regulation on the Pre-disposal Management of Radioactive Waste at the Nuclear Facilities“ establish requirements for containers for other radioactive waste. Regulation of safety relating to safe transport of nuclear cycle material and nuclear material, including spend nuclear fuel are established in the European Agreement concerning the International Carriage of Dangerous Goods by Road (ADR), Annex A and Annex B; the Convention Concerning International Carriage by Rail (COTIF), Appendix C Regulations concerning the International Carriage of Dangerous Goods by Rail (RID); the Agreement on International Goods Transport by Rail (SMGS), Annex 2.	
74	Belarus	Article 19.8	132	Has the Lithuanian side performed the safety reassessment of the modified containers CONSTOR RBMK 1500/M2, used for storage and transportation of spent nuclear fuel?	The safety justification of modified containers CONSTOR RBMK 1500/M2 was performed following the INPP modification implementation procedure, i.e. all required documents had to be reviewed and agreed by the regulatory body. VATESI approved the documents related to this modification in 2015-07-10.	

75	Belarus	Article 19.8	132	On the basis of what international regulatory legal documents in the field of nuclear energy use the Lithuanian side performs the activities on the treatment and final disposal of irradiated graphite in connection with the decommissioning of the Ignalina NPP?	Lithuania will perform the activities on treatment and disposal of irradiated graphite in connection with the decommissioning of the Ignalina NPP on the basis of: 1) Directive 2011/70/EURATOM establishing a Community framework for the responsible and safe management of spent fuel and radioactive waste and 2) Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management. At the moment Lithuania does not plan to perform final disposal of irradiated graphite until 2038.	
76	Belarus	Article 19.8	132	What measures of organizational, technical and legal nature are taken by the Lithuanian side to ensure the safe management of uranium-erbium fuel enriched to 2.8% uranium-235?	Safe management of uranium-erbium fuel enriched to 2.8% U-235 is ensured in accordance with the “Amendment to the Ignalina NPP Design Regarding Safe Storage and Management of Uranium-Erbium Fuel Enriched to 2.8%”, carried out by the INPP general designer (VNIPIET).	
77	Belarus	Article 19.8	132	How is a substantial violation of terms of commissioning of the interim storage of spent nuclear fuel has an impact on the radiation situation in the region and what measures are provided in order to avoid negative consequences in the future?	Delay in commissioning of the Interim Spent Nuclear Fuel Storage Facility (ISNFSF) does not have a negative impact on the radiation situation in the region, since all the systems ensuring safe storage of nuclear fuel at the INPP Units remain in operation. Surveillances, inspections, tests of all the systems ensuring safe storage of nuclear fuel are conducted in prescribed manner and under regulatory control. VATESI has issued operational license for ISNFSF operation on 20 September 2 of 2016. Operational license authorises INPP for the commissioning of the facility and start “hot trial” with 10 new CONSTOR®RBMK 1500M2 casks. During the “hot trial” each step from loading spent fuel into the casks to transportation of the casks to the new ISNFSF will be tested in order to demonstrate that all design and safety requirements are fully	

					met. The start of the industrial operation of the ISNFSF is scheduled in October 2017 after VATESI's approval of the "hot trial" report and the Final Safety Analysis Report of the ISNFSF.	
78	Russian Federation	Article 19.8	p. 6	Unit 2 spent fuel pool was designed to accommodate the entire unloaded core. Why onlt 1/3 of the core was unloaded in the SNF pool? What is the condition of the spent fuel assemblies unloaded into the spent fuel pool? What is the condition of the spent fuel pools?	The design documentation of INPP, which is equipped with channel type RBMK-1500 reactors, required for at least 166 free positions in spent fuel storage pools of the each power unit for emergency reloading of failed fuel assemblies in case of design basis accidents (the possible number of such assemblies was assumed 10 percent of total reactor core). This requirement was strictly followed during the operation of the power units. The spent fuel is going to be removed from the power units. The capacity of the storage pools per power unit is ~ 7500 spent fuel assemblies (SFA). ~ 6000 of SFA were transferred from the power units to the Dry Spent Nuclear Fuel Storage Facility (DSFSF). At present DSFSF is completely loaded, and there are no free space in Unit 2 spent fuel storage pools for unloading of remaining SFA from the reactor core. The unloading of the remaining SFA from the Unit 2 reactor will become possible after commissioning of the new Interim Spent Nuclear Fuel Storage Facility (ISFSF). The permit for industrial operation for ISFSF is planned to be obtained in 2017. SFA which stored in the storage pools remains in ordinary conditions. The additional traces of cladding corrosion are not observed. The storage pools are operated in the design mode by maintaining the design quality and temperature of water.	