No.	Name/Organisation	Question	Answer of the Bulgarian representation
1.	Olga Georgescu, Dabuleni Municipality	What happens to the water in which RAW is stored?	Clarification: the spent nuclear fuel (SNF) is stored under water. It is not considered radioactive waste (RAW) as per the Bulgarian legislation. Such possibility is envisaged under Safe Use of Nuclear Energy Act; under certain conditions SNF can be considered RAW. The water in which the SNF is stored is considered RAW. The reactor models under considerations envisage different systems for treating these RAW. For the Russian models AES-92 and AES-2006 the liquid RAW are processed via evaporation and ion-exchange filters. As a result pure condensate is obtained which meets the regulatory requirements and is then introduced back in the cycle; if not pure, it is again processed; in the AP-1000 design the liquid RAW is processed through ion-exchange filters only. Answer considered satisfactory.
2.	Violeta Ciuciuc, NGO Asociatia Dabuleni Impreuna pentru Viitor, Dabuleni	What is the cumulative impact on the component related to the human health and environmental hygiene and the risk for the Romanian population within the 30-km area?	In the presentation I indicated the cumulative effect from the operation of all operating facilities on the site. I want to underline that for the calculation of the discharge dose we use conservative models which in no way underestimate the radiation risk. In these models all incoming radioactivity routes are indicated and they are based on the European Commission accepted CREAM methodology for all countries with operating nuclear reactors; As it can be seen by the assessment maximum individual dose rate is under 4 μSv. There is such term accepted by the EU legislation, IAEA which is negligible radiation dose (under 10 micro Sivert/y), where the activities which induce this dose are not subject to regulatory monitoring; it is applicable both for the Bulgarian and Romanian parts of the 30 km area. It is so because the microclimate characteristics of the region and the population density are very common. With such doses it can be definitely said that risk of deterministic effects is absent; the risk of stochastic effects is negligibly low – under 1 of 10,000,000.

3.	Violeta Ciuciuc, NGO Asociatia Dabuleni Impreuna pentru Viitor, Dabuleni	How is the cooling water decontamination performed of the Reactor Primary Circuit?	In order to maintain the appropriate water chemistry of the Primary Circuit Coolant special filtering system is used; this system is similar both with the Russian and US system: ion-exchange resin filters are used; two filtering facilities are existent: one in operation; the other is back-up. This way part of the Primary Circuit Coolant is flowed through this facility and this way the necessary norms in line with the technologic requirements are achieved; if it is necessary that the coolant is treated (e.g. if reactor is in outage) then it is purified through this filtering facilities I mentioned in my first response. Answered satisfactory.
4.	Badi Mariana, Local counsellor, Dabuleni City Hall	What is the primary circuit protective casing?	There is a difference between the Russian and US type reactors; in the US AP-1000 there is an internal leak-tight casing made of steel and outer casing made of reinforced concrete. The first leak tight casing made of steel is aimed to provide density for this volume. So, in case of any accident, discharge of radioactive substances in the environment is prevented. The outer casing made of reinforced concrete is aimed to protect the reactor building from external impacts: human-induced or natural. As regards the Russian model: it is a little bit different. The internal leak-tight casing is made of preliminary constructed reinforced concrete. The aim is in case of accident to avoid discharge of radioactive substances in the environment. The outer casing is also made of reinforced concrete and is aimed at protecting the reactor building from external effects.
5.	Marinela Miscu, Dabuleni Municipality	I would like you to tell me how many Storage Facilities (SF) for RAW exist and what is their impact on the Romanian population?	RAW Storage Facilities are not envisaged to be constructed since up to now we have a RAW management system in place and the capacity of the existing RAW storage facilities is sufficient to take in all the RAW. What is more, the proposed technologies generate significantly lower amount of waste and apart of that with the experience gained by KNPP the generated RAW is significantly reduced.
6.	Crisitan Mihailescu, Insurance Company	What does the processing of RAW consist of which are a product of the Units 1-4 decommissioning activities?	The RAW generated in the process of decommissioning, according to their physical characteristics do not differ from the waste generated in operation; the amount of RAW generated in the process of decommissioning are envisaged in the construction of

			facilitates for RAW management so they are managed in the same way as the operational RAW and the processing consists of collection, Sorting, Radiological characterization, immobilising it in a cement matrix and packing it in reinforced concrete casks. A guarantee for the environment and population, their safety in particular, are the high requirements to the cement matrix and the reinforced concrete casing performed. He provided technical information regarding the tests performed in terms of pressure and temperature in order to demonstrate that no mechanical damage is identified; this is a guarantee for the lack of any danger to the population. All those tests are performed under the strict supervision of Bulgarian Nuclear Regulatory Agency (BNRA) inspectors.
6.1.	Crisitan Mihailescu, Insurance Company	What is the reason to construct this NPP unit in Kozloduy and not in any other part of Bulgaria?	Bulgarian Academy of Sciences: The site selection was performed after analysis of the whole Bulgarian territory; 12 sites were reviewed. Bulgaria consists of 2 very different parts in tectonic terms; south Bulgaria – not very calm; the other one is part of the Moesic platform – this is the reason why 6-7 other sites were left out; then several others at the Black Sea were dropped due to the high seismicity, only the Danube sites remained since for the operation of a NPP a whole lot of water is needed. Then these 4 sites left were cross-compared and it turned out that the Kozloduy region offers the best hydrogeological and all other types of conditions. So the selection is a result of the efforts of a team of scientists and researchers and this was the best possibility.
7	Cioraia Virgil, Dabuleni Municipality	1. What happens to the RAW generated from the main NPP operational activities? 2. Where is the RAW located which is a result of the decommissioning activities of Units 1-4?	As mentioned before, the RAW is collected, sorted, characterised radiologically and all these data are marked on the passports of the packaging. Every single package has a unique number and the RAW is stored in the Interim Storage Facility which is currently a facility with a multi-barrier protection and a capacity of 1920 packages and in the following 3-4 years the construction of National Disposal Facility (NDF) is envisaged. This concerns both the decommissioning and operational RAW. Currently the SFs we have sufficient capacity to provide for all the operating facilities on site.

8	Violeta Ciuciuc, NGO Asociatia Dabuleni Impreuna pentru Viitor, Dabuleni	What is the impact from the current operation of the NPP on the agricultural bioproducts in terms of radioactivity?	The monitoring of the biological flora and fauna is part of the radioecological monitoring. We have a regulated sample amount from agricultural products. The long-year study of the agricultural products shows that they are not contaminated with radionuclides from NPP. They are below the detectable level. In our laboratories we use very sensitive equipment. The radioactivity of this flora is formed completely by the natural radioactivity. It is over 90% due to K-40 isotope which is located everywhere, including in our bodies. So in terms of radiological impact on the fauna, it can be said that it is not in any way caused by the NPP in operation.
9	Violeta Ciuciuc, NGO Asociatia Dabuleni Impreuna pentru Viitor, Dabuleni	Only positive impact was presented; what is the negative impact? Is there any such thing from the construction of the new nuclear unit?	There is nothing in this world which is ideal and perfect, even us. Our goal as people responsible to the environment and our children which are the future, is to design, construct and operate such a facility which would have minimal impact, such that won't cause such impact on us and our offspring which would be negative. The low increase in the temperature of the water plume in the Danube River may cause indirect negative impact, but it won't be such that would endanger the biological diversity in the eco-system. The cumulative impact on the conventional discharge water, i.e. these are the waste waters from the life cycle of the people working in the NPP mainly which, accumulated for all the facilities for which the cumulative effect is calculated, introduce a negligibly low negative load. All these waters currently go through and will continue to go through purifying stations – this is a negative impact, but not dangerous in any way now or in the future. In our legislation we use this terms: negative negligible impact or reversible effects after decommissioning, regardless of the nature of the plant. So in this line of thought, even during the construction of the site there is soil impact, but after decommissioning it is all remediated.
10	Lucian Stirb, NGO Terra Millenium III	Are there any simulation models for potential risks to the environment in case of accident?	Every nuclear vendor declared that the relevant safety analyses have been performed, the so called Probabilistic Safety Analysis Level 1 and 2 which have determined the probability for core accident. As per the Bulgarian legislation and the IAEA Regulations, the probability for core accident should be lower than 1 of 100,000. The models under consideration meet this condition with at least one order. As regards the radioactive discharges in

			the environment, the Bulgarian legislation and the IAEA regulations determine that the frequency should be lower than 1 of 1,000,000. The reactors under review meet these criteria with at least one order. So the analyses of US and RU reactors have been performed under the same conditions. In the Safety Analysis Report the requirements are as per the Bulgarian and IAEA Regulations. The conditions have been determined for normal operation and for deviation from normal operation and the occurrence of events which might occur in the range of 10^{-2} and 10^{-6}. Core melt down scenarios have been reviewed as well. There is a technical devise constructed for catching the core meltdown. In the Russian model this is done through specially designed core-catcher. The US reactor is different with the respective design solutions, which provide reactor cooling from the outside in order to avoid its meltdown.
11	Epure Gheorghe, Dabuleni Municipality	With the permission of the Bulgarian participant, a short question: what was the reason to decommission Reactors 1-4? I am thinking about this: old technology, expired life-time, or existing nuclear accident possibility?	Interesting and painful to KNPP. Before specifically answering this, reminder: Unit 1 and 2 are VVER-440/230 model, Units 3 and 4 are the second stage of KNPP and despite being the same model, they are a modernised version with a three-channel protection system. Now, specifically to the question: Units 1 and 2 were shut down at the end of 2002 after which Bulgaria was invited to negotiate EU accession and Units 3 and 4 were shut down at the end of 2006 in the eve of Bulgaria and Romania's accession to the EU. The decision is purely political and there are no technological reasons for the shutdown of Units 3 and 4. I will try to persuade you in this. A great modernisation was performed on Units 1 to 4 which was performed on 2 stages and it concerned mainly Unit 3 and 4; on the one hand it was aimed at increasing safety and on the other to demonstrate high safety level compared to same generation reactors; Just part of the modernisation which are now implemented in all power plants: a system for severe accidents management on Units 3 and 4 was implemented which is now being introduced in some power plants. We at KNPP consider undoubtedly that Units 3 and 4 were shut down due to political reasons. This was confirmed by the many reviews, such as the IAEA review which reviewed the functionality of the NPP; the other review was by WANO and a review by the European

			Commission. All three reviews found no problems which can't be solved in the power plant. The conclusions were that Units 3 and 4 of KNPP meets the safety requirements and it is comparable to units from the same generation.
12	Violeta Ciuciuc, NGO Asociatia Dabuleni Impreuna pentru Viitor, Dabuleni	Up to now you discussed the advantages to the Bulgarian side, what could the Romanian party advantages be from the Construction of a New Nuclear Unit (CNNU)?	As I mentioned in the presentation, apart of the EIA, another study was performed - a Feasibility Study related to the CNNU at the Kozloduy Site. It was found that the implementation of such a project is related to the efforts not by one, but by many countries. The analyses indicated that during construction which continues for about 5 years, about 3,500 people would be needed, workers without qualification, up to experts in the respective areas. For the operation it would be necessary to have (depending on the reactor model) for the AP-1000 350 operators; for the Russian models – 600-650; it is clear that the proximity of Romania to the construction site of NNU is a huge plus. Many of the activities would be assigned to subcontractors. So, workers from Romania can also participate in the construction. It is expected that in the services sector a greater amount of people would be engaged (nutrition for instance). Apart of that a great number of companies and local and regional level to be engaged for the supply of equipment (not the nuclear vendor equipment), such as some side activities. Therefore we consider that it would be both socially and economically beneficial for both countries. Satisfactorily well answered, but too idealistic.
12.1	Violeta Ciuciuc, NGO Asociatia Dabuleni Impreuna pentru Viitor, Dabuleni	How do you envisage hiring Romanian workers when they don't speak your language?	People speak a dialect of the Romanian language in Kozloduy. When the nuclear units were in construction and Bulgaria did not have well prepared qualified builders there were hundreds of workers from Vietnam, Poland, Cuba, and other countries. So we expect that if we reach the construction stage we would need welders and other qualified workers.
13	Albena Simeonova, Anti Nuclear Coalition	There is a huge interest to this project, but among the questions, there is a statement. Mrs Albena Simeonova from Coalition "Anti-	-

		nuclear" requested to make a statement (see table above). With regards to bio-produce, she considered the ecologist from the NPP did not understand the question very well. There are two types of agricultural produce – conventional and one certified bio-produce. Thanks to the landscape of Dolj region the certified bio-producers in Dolj are more than all the producers in Bulgaria. Mrs Simeonova is a Bulgarian bio-producer from Nikopol municipality. First question of the certifying organisation was whether she was located in a proximity to 10 and 30 km area of nuclear power plant. She said that the agricultural producers in the 30-km area around the NPP would have problems and she quoted parts of the conclusions made in the EIA Report. In the data for all the impact of the cumulative effect of generated radioactive discharges of all operating units in the atmosphere and in the Danube River, along with the SNF buried somewhere in the territory of Bulgaria we should not accept the conclusion on p.53 and	

		the Impact Assessment, where it is stated that the expected radioactive impact would only be limited to the site of the unit and based on the conclusion of the disturbing parameters mentioned by the authors of the report for the RAW generated in the operation of the site. She quoted the authors' conclusions: "probability of existing of the event – expected"; "type of impact – negative, direct, primary"; "characteristics of the impact – radiation"; "duration – long-term"; "cumulative – yes". Based on the conclusions of the EIA authors, it should be underlined to the Bulgarian and Romanian public that there are no limits for radioactive discharges from the ventilation stacks of the nuclear units, what is more the Danube River cannot be leak-tightly isolated, whereas at the same time the burial of SNF as RAW would destroy the territory of Bulgaria for billions of years. According to Mrs Simeonova, Kozloduy held a referendum whether the population wanted an NPP and the population, with certain deviation, stated yes; when asked if they want a nuclear depository, more than 95% of the population sayd "no". She stated that in March 2013 the mayor of Kozloduy Rumen Manoev	

		issued a statement asking to define monthly and yearly acceptable thresholds for aerosol emissions from the ventilation stacks for radioactive noble gases, aerosols, iodine 131 and gases, but according to her there may not be acceptable thresholds for radioactive substances, as each such particle is lethal for the human organism. As for negative impacts, she stated that in Chapter 1 of the EIA-R, it says – the existence of such quantity of processed nuclear fuel at the site of KNPP represents a serious problem in the long-term, as this is a deferred solution that transfers responsibility to the future generations. Depending on the orientation of the government it is decided whether the power plant to be constructed should be Russian or American. Nevertheless, it is equally harmful for the health of the human and for the generations for millions of years.	
14.	Cristian Mihailescu	He stated that his question has been previously answered.	
15.	Sandu Florin Tudor, NGO Terra Millennium III	What is happening in case of flood? Is there a safety plan?	National Emergency Plan of the Republic of Bulgaria is divided into several parts. Part 2 is related to floods. Part 3 is related to the Internal Action Plan in case of radiation emergency at KNPP. Part 2 sets out the responsibilities of ministries and institutions in case of such an event. This year was very rainy and several times this plan was activated. After the stress tests conducted in 2011 after the Fukushima accident and the analyses performed at KNPP it

			was proved the KNPP site is non-floodable and such a tide wave cannot occur.
16	Sandu Florin Tudor, NGO Terra Millennium III	Question related to the Plasma Melting Facility (PMF) – is it foreseen to be constructed with some filters and what is the safety of the filters?	It is currently under construction and owned by the State Enterprise "RAW" (SERAW). The PMF currently has approval of the Technical Design by the BNRA. The filtering system is a combination of mechanic filters (Scrubber system, deNOx system, etc.) and HEPA filters for catching aerosol particles. The control over the filtering system includes monitoring temperature, mechanic dust and purification tests; what is more the incineration in the PMF is performed in the conditions of a very high temperature and at the end a secondary incineration is envisaged (in case of dust particles occurring in emergency mode).
17	Sandu Florin Tudor, NGO Terra Millennium III	Efficiency of filters is of interest to me. What is it?	The efficiency is 99.999%. This filtering system has already been manufactured and is currently stored at the KNPP site. These figures were achieved at the Factory Acceptance Tests at which I was present. The system was manufactured by a Dutch company. It was explained that this percentage has been achieved by the combination of mechanic, wet and highly efficient aerosol purification filters and along with the low-emissions due to the nearly complete incineration, then it is possible to have even 100% efficiency.
18	Sandu Florin Tudor, NGO Terra Millennium III	Question regarding the Hot Channel (HC): how many monitoring points exist on this channel? I am speaking of monitoring of all types.	As regards the hot channel: the discharges in the HC are monitored at the point of discharge. The liquid discharges are collected at the so called control tanks. When such a tank with a volume of 50 cubic meters is filled, special pumps are actuated to homogenise the water inside, then a sample is taken. This sample is analysed for the content of radioactive substances. If the radioactivity is above certain control level, this water is not discharged and is redirected for additional purification. If the content is under certain Control level (CL), then permission for discharge is obtained and the tank is drained, whereas during the drain there is constant sampling and the drained water is monitored for radioactivity. If radioactivity higher than certain CL and certain value, the draining is automatically ceased. These drains are performed by so called Auxiliary Buildings (AB)– 3-off on the territory of KNPP; 1 for Units 1 and 2, 1 for Units 3 and 4 and

			1 for Units 5 and 6. At each of these AB there is such a facility for on-line monitoring. This is the so called mandatory monitoring. What is more after the draining points of the 3 ABs, there is one more monitoring point which samples directly from the HC and monitors the radioactivity of the water in the HC. This is the monitoring at the KNPP site; from radioecological point of view, we have automated sampling downstream in 2 additional points (including Oryahovo port, a routine monitoring) and 1 at the point of discharge. This comes to show the attention we pay to the radiation monitoring of the Danube River, and as the presentation showed it has not been impacted by the KNPP operation.
19	Mario Milov	Reply to Simeonova in order to clarify the position of the Kozloduy Municipality Mayor. Mr. Manoev and the Municipality completely support the CNNU at the Kozloduy NPP site, of course while pursuing all standards environmental and international.	