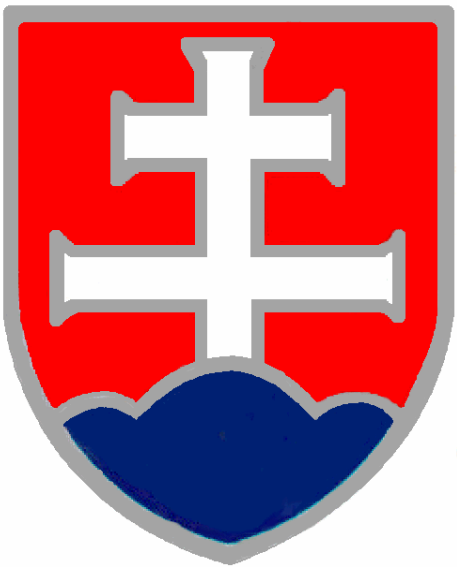
ANSWERS TO QUESTIONS

ON

NATIONAL REPORT OF

THE SLOVAK REPUBLIC



COMPILED ACCORDING TO THE TERMS OF THE JOINT CONVENTION ON THE SAFETY OF SPENT FUEL MANAGEMENT AND ON THE SAFETY OF RADIOACTIVE WASTE MANAGEMENT

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Q.No	Country	Article	Ref. in National Report
1	**Poland**	Planned Activities	General

Question/ Comment: How and when Slovakia wants to solve the problem of national deep geological repository? It is only stated in report that such repository should be constructed in future.

Answer: Slovakia started its own program of development of deep geological disposal in 1996. The program slowed down in 2001. The program was coordinated by DECOM Slovakia Ltd. (DECOM, a.s. today) and consisted from the initiating studies in regard to following areas (the responsible institutions are listed in brackets):

- repository design and implementation (EGP Invest, Ltd., Uhersky Brod, Czech Republic and Energoprojekty, Plc., Bratislava)
- source term (Nuclear Research Institute, Plc., Prague, Czech Republic)
- near field (Nuclear Research Institute, Plc., Prague, Czech Republic)
- far field (Geological Survey of Slovak Republic, Bratislava)
- site selection (Geological Survey of Slovak Republic, Bratislava)
- safety analyses (Nuclear Power Plants Research Institute, Plc., Trnava, Slovak Republic)
- public involvement (AEA Technology, Harwell, U.K. and Decom Slovakia, Ltd., Trnava, Slovak Republic)
- legislation (Decom Slovakia, Ltd., Trnava, Slovak Republic)
- quality assurance (Decom Slovakia, Ltd., Trnava, Slovak Republic).

The main results were obtained within the site selection area. At first, the site selection criteria were established consistently with international approaches (see, for instance, IAEA Safety Series No. 111-G-4.1). Consequently, 15 potentially suitable areas for further investigation were identified, later narrowed to three distinct areas (with five localities: three in granitoid rocks, two in sedimentary rocks environment) determined as prospective sites for construction of a deep repository. Their total extent is 320 km^2. Some limited individual investigations on some of these localities were performed also after 2001: field investigations (geophysical measurements - electric, gravimetric, magnetic, seismic) and shallow drilling down to 250 m (including hydrogeological and geophysical logging). More detailed maps were compiled for each site (scale 1:25,000) at this time. According the original plans, decision on selection of the host environment was expect to obtain after 2005, selection of candidate sites around 2010, and commissioning of a deep geological repository by 2037. For more detailed information on the Slovak development of deep geological disposal, see for instance: Witherspoon P.A., Bodvarsson G.S. (eds.): Geological Challenges in Radioactive Waste Isolation. 4th Worldwide Review. Report LBNL-59808. Prepared for the US DOE under Contract No. DE-AC02-05CH11231. Berkeley Laboratory, April 2006. Pgs: 173-190.

The new strategy of the back-end of peaceful use of nuclear energy (approved by the Government in May 2008) considers three ways of the long-term spent nuclear fuel management:

- disposal in the deep geological repository,
- international solutions, which means a) transport to Russian Federation (so-called “transport without return” is impossible according to the current Russian legislation) or b) participation on development, later potentially on siting, construction and operation of shared (regional) international repositories,
- safe storage of spent fuel for odd period waiting for other solutions than above-mentioned (the „wait and see“ approach, in fact), but this option was considered as inconsistent with principle of sustainable development.

According to the Strategy, ongoing years should be oriented to collecting data and information (including the in situ data of prospective localities mentioned above) leading to the principal technical and political decision. It is expected in the next decade. In spite of fact, that the Strategy was approved by the responsible ministry and by the Government, the strategy executive documentation (three-year "frame program") covering the given area has not yet approved by the National nuclear fund and it has not yet been implemented into practice by its current implementer (JAVYS, a.s. company).
See also overall summary of questions – word document answers to questions 9, 12, 13, 14, 15.

Q.No	Country	Article	Ref. in National Report
2	**China**	General	B.2 (2), p.10

Question/ Comment: (1) What waste are solidified with bituminization?
(2) How do you solidify the spent ion exchange resins?
(3) How do you control the quality of the solidified waste form either by cementation or by bituminization?

Answer:
1. RAW solidified by bituminization are evaporated radioactive concentrates.
2. It is intended that spent ion exchange resins will be solidified by bituminization.
3. Quality control of solidified waste consist in declaration of:
   - specific activity (gammaspectrometry, alpha spectrometry in laboratory)
   - fixation of solidified waste in appropriate matrix (cement, bitumen) (%)
   - water content in final product (bitumen)
   - leachibility
   - thermal stability (bitumen)
   - compression strenght (cement)
   - gammascanning (200 l drum)
   - declaration of radionuclide contents using scaling factors method.

Q.No	Country	Article	Ref. in National Report
3	**China**	General	B.2 (2), p.11

Question/ Comment: Please describe what is the acceptance criteria for centralised long-term storage or disposal of conditioned disused sealed sources.

Answer: Safety assessment has been made within the PHARE project (EUAID/200401676407) in 2007. The results could be summarised as follows:

- practically all beta and gamma sources could be disposed (except two higher activity sources of 137Cs and one 14C – they will be stored till other safe disposal option will be realized)
- long-lived alpha and/or neutron sources (i.e. with radionuclides: 226Ra, 238U, 232Th, 238,239Pu, 241Am) cannot be disposed in the Mochovce repository – they will be stored till other safe disposal option will be realized,
- disposal of centrally collected sources from the fire detectors (some portion of them was originally exempted) or glowlamps remained questionable and their disposability will depend from the methodological approaches to the assessment of safety.

Nevertheless, the Mochovce repository has not yet been commissioned for disposal of institutional radioactive waste, including disused sealed source.

Q.No	Country	Article	Ref. in National Report
4	**Germany**	General	p.7; Sec. A

Question/ Comment: The nuclear power plant EBO2 at Jaslovské Bohunice is going to be shut down on 31.12.2008 on request of the EU Commission, completing the overall shut down of the site NPP V1.
What is the official plan concerning the shut down and decommissioning of EBO2 and the site V1?

Answer In 2006 the document „Conception of Termination of NPP V-1 operation“, defining the basic strategy of operation of both NPP V-1 units, during the termination of operation of NPP V-1 and preparation for their decommissioning.
Period of termination of NPP V-1 operation is the period beginning with the shut-down of 1st unit, and subsequent shut-down of 2nd unit and ending with transport of all spent nuclear fuel to interim spent fuel storage (MSVP) and transport and processing of all operational radioactive waste (i. e. years 2007 - 2011). The main activities within this period include the following activities:

)peration of both NPP V-1 units, emphasizing the securing of original safety level of 2nd unit,

- securing of appropriate mode of storage and cooling of spent nuclear fuel. With the main objective to transport all of spent nuclear fuel from NPP V-1 to interim spent fuel storage (MSVP),
- securing of safe and continuous operation of systems (devices), which remain in operation,
- safe gradual reduction of number of NPP V-1 operational systems (devices). The objective is to put the power plant into condition enabling the beginning of decommissioning works,
- identification of all license requirements with objective to obtain the permission for 1st stage of NPP V-1 decommissioning in 2011.

Implementation of above-mentioned activities should enable the beginning of process of NPP V-1 decommissioning after fulfilment of necessary legal requirements. Based on the strategy of nuclear energy beck-end (approved by the government in May 2008 the preferred option is the immediate decommissioning.

Q.No	Country	Article	Ref. in National Report
5	**Hungary**	General	Annex V. P.109

Question/ Comment No information is given about the inventory in terms of radionuclide content.

Answer Data presented in Annex V. are related only to quantity of RAW.

Q.No	Country	Article	Ref. in National Report
6	**Poland**	General	introduction page 11

Question/ Comment What is meaning of an acronym “NRR”. It is not listed in table “used abbreviations”

Answer NRR means the National Radioactive Waste Repository Mochovce.

Q.No	Country	Article	Ref. in National Report
7	**Czech Republic**	Article 3	

Question/ Comment Can you describe your experience with the conditioning of radioactive waste by means of geopolymers (SIAL technology)?

Answer In NPP A-1 geopolymers are used for fixation of ra-sludges, which contains ingredients of organic and anorganic source. Recipes for fixation of these types of RAW are adapted to physically and chemically composition of actual types of sludges so that final product fulfils Mochovce repository acceptance criteria. Fixation process is realised by the specific technologic equipment, set to this purpose. Fixation of RAW is realised in package (60 dm^3 drum), which after product hardening do simultaneously function of transportation package. Product fixed in the drum is thereafter fitted into fiber concrete container and embedded with concrete mixture and transported to the Mochovce repository.

Q.No	Country	Article	Ref. in National Report
8	**Germany**	Article 4	p. 73; Sec. G.1.1

Question/ Comment: Based on the requirements of the Act No. 541/2004 Coll. on Peaceful Use of Nuclear Energy (Atomic Act), a periodic safety assessment of spent fuel and radioactive waste management facilities has to be performed every ten years. Which are the main features of these safety assessments?

Answer: The requirements are described in § 23 Nuclear safety of Atomic Act. The requirements cover operation as well as decommissioning of a nuclear installation.

ÚJD SR Regulation No. 49/2006 Coll. on periodic safety review describes general requirements for periodical safety assessment of nuclear installation (including spent fuel and radioactive waste management facilities).

Generally, periodic safety review (PSR) is performed every 10 years, in case of decommissioning at the end of each decommissioning phase.

Under Art. 2 of ÚJD Regulation No. 49/2006 Coll. periodic safety review is focused on:

a) comparison of the achieved state of nuclear safety on the nuclear installation with the current nuclear safety requirements and with the best technical practice,
b) verification of cumulative effects of nuclear installation ageing, the impact of both undertaken and envisaged changes to the nuclear installation, operating experience and technical development on nuclear safety,
c) establishment of justified and practical changes to the nuclear installation with a view to maintaining the required high nuclear safety standards or improve them close to those of modern nuclear installations in the world,
d) demonstration that the required nuclear safety standards are secured until the next periodic evaluation or the end of the licence validity.

The permit holder shall reflect the results of the periodic safety assessment in preparation of safety documentation submitted to ÚJD SR in order to obtain further license.

Q.No	Country	Article	Ref. in National Report
9	**United States of America**	Article 6	Section G.6, Page 84

Question/ Comment: The U.S. asked for more specific information on domestic development of deep geologic disposal, in a question on Slovakia's Second National Report. The answer described a process involving 15 study areas, and narrowing down to six research areas in granite sedimentary formations. No specific mention of progress is in the Third National Report except five sites are candidates. Please provide information on progress made since 2005. What specific sites and what geologic formations are being actively investigated? What is the extent of public participation and what are the key public issues?

Answer: There is no significant progress since 2005 regarding the site selection process. There have been small individual projects granted by Geological section of the Ministry of environment, more oriented to maintain the competence of the Slovak Geological Survey within the given area. See also overall summary of questions – word document answers to questions 1, 12, 13, 14, 15**.** Regarding the participation of public, since 2001 when the deep geological disposal development was slowed down, there is no public participation. The new strategy for the back-end of peaceful use of nuclear energy was elaborated and approved in May 2008. The strategy was subject to EIA including the involvement of the public (e. g. NGOs and neighbouring states). Today, the process to update the strategy started. One of the reasons is to try more involve the public in given area also to decision making processes, over the "obligatory" formal participation within

the Strategic Environmental Assessment and Environmental Impact Assessment processes.

Q.No	Country	Article	Ref. in National Report
10	**Germany**	Article 7	p. 75; Sec. G.3

Question/ Comment: According to the report, a preliminary conceptual plan for future decommissioning already during design stage of a nuclear installation is legally required. The plan has to be updated during the entire operational period every ten years within periodic safety assessments. Does it mean that a separate decommissioning licence is not foreseen in the regulatory system? In case there are separate licences for operation and decommissioning: Which of them covers the post-operational phase of a nuclear installation?

Answer: According to Atomic Act, decommissioning process could be devided into several phases, if necessary, depending on graded approach on types of nuclear facilities (with or without reactor). Authorisation for decommissioning stage shall be issued separately by the ÚJD SR based on written application attached with the documentation pursuant to Annex 1 Section D of the Atomic Act. One of these documents is the Decommissioning Stage Plan, which is updated since siting, thorough construction, commissioning up to the operation of facility.
Post-operational phase (transition period) of nuclear installation (except repository) is still covered by the operational license.
In case of repository, the post-operational phase is covered by the separate license for repository closure and for institutional control, which shall be issued by ÚJD SR upon submission of a written application and documentation pursuant to Annex 1 Section E.

Q.No	Country	Article	Ref. in National Report
11	**Austria**	Article 8	

Question/ Comment: What are the requirements and the procedure for a periodic safety review of the spent fuel and radioactive waste facilities?

Answer: The areas and appropriate scope of periodic safety review of NI are defined in ÚJD SR Regulation No. 49/2006 Coll. on PSR of nuclear installations (See overall summary of questions – word document answers to question No. 8).
Requirements for assessment of afore-mentioned areas (including criteria) are laid down in the ÚJD SR Regulation No. 50/2006 Coll. on nuclear safety of nuclear installations.
Under Art. 2 of ÚJD Regulation No. 49/2006 Coll. the licence holder will carry out the first periodic evaluation by the state of the nuclear installation as of the day on which eight years will have expired since the issue of the operation licencee; in case of decommissioning at the end of each of decommissioning phase.
The permit holder shall submit a report on PSR to ÚJD SR within six months of the day on which the periodic review was performed.
The permit holder shall reflect the results of the periodic safety review in preparation of safety documentation submitted to ÚJD SR in order to obtain further license.

Q.No	Country	Article	Ref. in National Report
12	**France**	Article 10	G.6 - p 83/84

Question/ Comment: Systematic development of a deep geological repository started in 1996. In 2008, a frame program for the repository development project was elaborated for the next 3 years.
Could Slovak Republic indicate whether a long term program is defined for this issue? If yes, what are the main steps of this program and the associated schedules?

Answer: (See overall summary of questions – word document answers to questions 1, 9, 13, 14, 15) The development of the Slovak deep geological repository was slowed down in 2001 and it has not been revivified yet. For details see overall summary of questions –

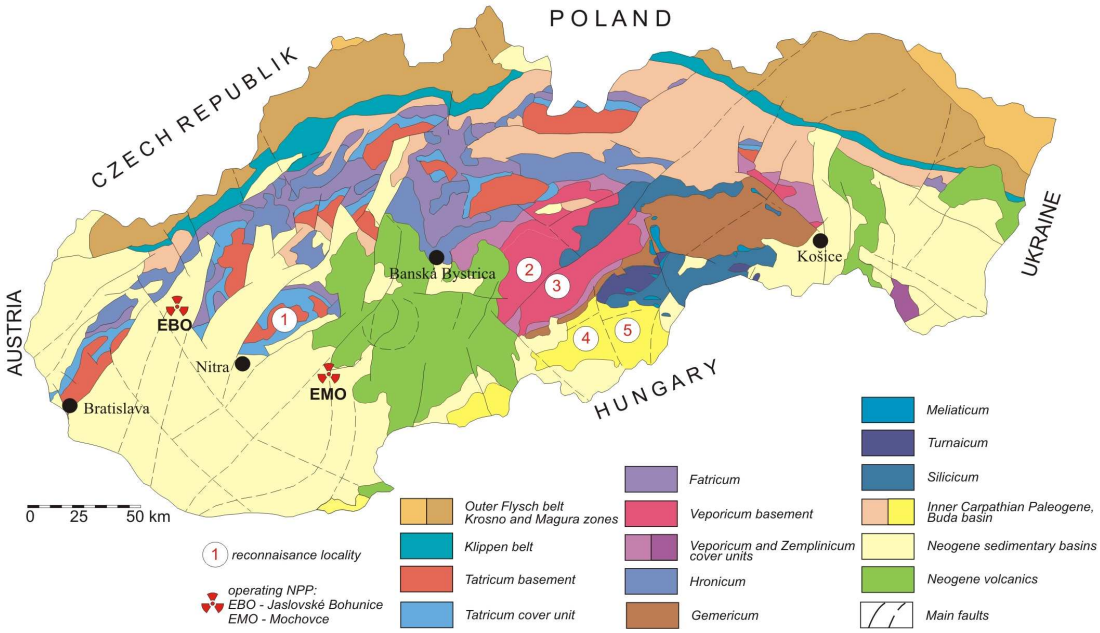
word answers to questions No. 1, 9, 13.

Q.No	Country	Article	Ref. in National Report
13	**Germany**	Article 10	p. 83-84; Sec. G.6

Question/ Comment: It is described that 5 candidate Sites have been chosen for further investigation regarding the suitability for a deep geological repository for spent nuclear fuel, starting in the year 1996. It is not described how the process of investigation progressed since 1996 and whether there have been results in decision making for the siting process. Therefore, the following questions arise:
Where are the five candidate sites located?
Which kind of host rock and depending repository concept is considered?
What kinds of criteria are applied to characterise the possible sites?
To what extent is the public involved in the process?
What is the actual status and time schedule of the described siting process and the repository development project?

Answer: See overall summary of questions – word document answers to questions 1, 9, 12, 14, 15. As it is mentioned above, we had originally 15 candidate sites chosen (based on critical review of existing data) according to the site selection approaches as they were published, for instance, in IAEA Safety Series No. 111-G-4.1. Consequently the number of sites was narrowed down to five prospective ones in 2001-4. The Slovak deep geological repository program was lowed down in 2001 and later (2002-2006) it continued by limited study activities on prospective sites performed by Geological Survey of the Slovak Republic.

a)



Simplified tectonic sketch of Slovak part of Western Carpathian. Status of deep geological repository siting in 2004: 1 - Tribec Mts.; 2 - Veporske vrchy Mts.; 3 – Stolicke vrchy Mts.; 4 – Rimavska kotlina Basin; 5 – Cerova vrchovina Upland.

b) Both granitoid and sedimentary host rocks. In 1996-2001, the introductory studies considering the repository concepts in both host rocks were elaborated.

c) A preliminary set of site-selection criteria for a deep geological repository was proposed, based on worldwide experience and consistent in principal with IAEA recommendations (Safety Series No. 111-G-4.1). Three groups of criteria were proposed for site selection:

1. Geological and tectonic stability of prospective sites (seismic activity, faulting, folding, uplift of the territory, etc.).
2. Characteristics of host rock (lithological homogeneity, hydrogeology, low hydraulic conductivity, absence of groundwater resources, favourable geotechnical conditions, rock stress, thermophysical and geological characteristics, absence of mineral resources).
3. Conflict of interests (natural resources, natural and cultural heritage, protected resources of well or thermal waters).

Owing to progress in program activities and knowledge from exploration of different localities, siting criteria were supplemented and adapted in 2001. Innovated set of criteria was based on the first one, programme experience, as well as IAEA recommendation and Scandinavian experience. Qualitative evaluation of suitability of host rock included specified rules and requirements in order of: preferences – requirements – criteria:

- Preferences – world-wide accepted principles and conditions of host-rock or site suitability - advisable but not prescriptive
- Requirements – specified principles and conditions of host-rock or site suitability – obligatory for host-rock or site selection, and
- Criteria – defined qualitative and quantitative suitability measures of limiting value for host rock or site selection.

Evaluation of geological environment was focussed on all its components: rock, water, morphology and geodynamic phenomena in evolution prediction of more than 100,000 years. Conditions under evaluation were divided into the following groups:

- geological
- hydrogeological and hydrogeochemical
- engineering geology, and
- geomorphologic (area surface stability).

Basic social and economic requirements were as follows:

- Areas with higher degree of legal environmental protection, mineral and underground water resources should be avoided
- Areas with lower population density and more favourable demography should be preferred, and
- Beneficial effects of the repository in site should be enhanced whereas negative should be minimized.

d) In the period of 1996-2002, a few studies were prepared to establish the public involvement way. The project implementation was slowed down in 2001 and it is still not revivified.

Q.No	Country	Article	Ref. in National Report
14	**United States of America**	Article 10	Section B.1, Page 9

Question/ Comment	Slovakia states that “Possibilities of SNF transportation abroad for permanent disposal or reprocessing without importing the reprocessing products back to Slovakia are being verified." and "Possibilities of international or regional solution of the final SNF management are being verified..." Please clarify the meaning of “verified.”
Answer	The last relevant intergovernmental agreement between the Governments of Russian Federation and Slovak Republic (exactly: “Agreement between the Government of Russian Federation and the Government of Slovak Republic on collaboration an completion of construction of the first unit of NPP Mochovce”, signed on 31.October 1995) states: “the Government of Russian Federation guarantees the acceptance of SNF

from the Slovak NPPs for reprocessing with consecutive technological holding time, in compliance with laws and legislation in force in both parts, according to conditions determined in the particular contracts“. The current legislation of Russian federation in force does not enable the import of Slovak SNF “without return” after its reprocessing (see also overall summary of questions – word document answers to questions 1, 9, 12, 13, 15). Company DECOM actively participated on both SAPIERR projects (EC-Euratom FP’6, for more information see: http://www.sapierr.net).

Q.No	Country	Article	Ref. in National Report
15	**United States of America**	Article 10	Section G.6, Page 84

Question/ Comment: With regard to spent fuel disposal, the report states that in 2008, “a frame program for the repository development project was elaborated for another 3 years.” Please explain or clarify the term “frame program” and describe its key features.

Answer: The “frame program” was intended to implement, finance and execute the activities mentioned in the strategy (Strategy of the back-end of peaceful use of atomic energy approved in May 2008 by the Slovak Government). (See overall summary of questions – word document answers to questions 1, 9, 12, 13, 14).
Nevertheless, proposal of the “frame program” as it was elaborated in the 2nd half of 2008, has not yet been approved by the Board of Governors of the National Nuclear Fund.

Q.No	Country	Article	Ref. in National Report
16	**Czech Republic**	Article 11	

Question/ Comment: Can you describe your standard approach to characterization of solid radioactive waste?

Answer: Standard approach to characterization of solid radwaste consist in:

- sampling
- homogenity control by gammaspectrometry
- sample preparation (dissolution, microwave destruction)
- laboratory analysis (gammsapectrometry, alphaspectrometry, liquid scintilaton spectrometry)
- determination of radionuclides vector and scaling factors
- determination of reference radionuclides activity by gammascanning (200 l drum)

final calculation of all required radionuclides activity according to activity of reference radionuclides using scaling factors method.

Q.No	Country	Article	Ref. in National Report
17	**France**	Article 12	H.2 - p 87

Question/ Comment: Historical wastes have been removed, sorted and categorized according to the requirements on the accompanying sheet of RAW.
Could Slovak Republic indicate if historical wastes are stored in accordance with current safety procedures?

Answer: Historical waste are stored according to valid legislation in the area of radwaste disposal.

Q.No	Country	Article	Ref. in National Report
18	**Czech Republic**	Article 13	

Question/ Comment: Can you provide some information about requirements for sitting of landfill sites (e.g. geological, hydrological or hydrogeological) where VLLW can be disposed of?

Answer: The requirements for sitting of landfill sites where VLLW can be disposed of have to be in compliance with the 1999/31/CE Directive of the European Union Council related to

dangerous waste landfills.
In the frame of the Bohunice International Decommissioning Support fund (BIDSF) the "Feasibility study of Enlargement of the National Repository at Mochovce" is under preparation. One of the task of this study is to select an appropriate disposal system for VLLW.

Q.No	Country	Article	Ref. in National Report
19	**Czech Republic**	Article 14	

Question/ Comment: Provide details on the design and construction of the centralised RAW storage facility.

Answer: Design of the centralised RAW - DSRS storage facility will be prepared next year. Main characteristics: modular type, equipped by devices for manipulation and emplacement on the position of storage, for checking of information in the waste package accompanying sheet during the waste acceptance process, areas and devices for radiation protection, including monitoring, active workshop, areas and devices for potential decontamination of small objects and for potentially radioactive waste waters management.

Q.No	Country	Article	Ref. in National Report
20	**Hungary**	Article 18	E p.39

Question/ Comment: Does ÚJD SR have a cooperative or coordinating task in the licensing procedures, where other special authorities (e.g. Public Health Care Office of SR, National Labor Inspectorate etc.) are also involved?

Answer: As regards the construction of nuclear installation, ÚJD acts as a specialized construction authority responsible for issuance of a final construction license and asks for statements of affected authorities (e.g. Public Health Care Office of SR, National Labor Inspectorate etc.) and informs them on beginning and whole process of legal proceedings (See overall summary of questions – word document answers to questions No. 23 and 26).

Q.No	Country	Article	Ref. in National Report
21	**United States of America**	Article 18	Section E.1.2.2, Page 35

Question/ Comment: A new Act on environmental impact assessment was passed on February 1, 2007 establishing a process of expert and public assessment on environmental impacts. Please describe any accomplishments related to implementation of this new Act.

Answer: Completely new Act No. 24/2006 Coll. on Environmental Impact Assessment, replacing the previous Act No. 127/1994 Coll., took effect on the 1 February 2006. The 2006 Act on EIA transposed into national legislation the Council Directive 85/337/EEC on the assessment of the effects of certain public and private projects on the environment as amended by Council Directive 97/11/EC, Directive 2003/35/EC and Directive 2001/42/EC. As the competent and responsible authority for the EIA proceedings is designated the Ministry of Environment that issues the final statement to the project. If any recommendations occur, the licensing authority must take them into account when issuing license for the project activities. During the EIA proceedings, ÚJD SR as licensing authority provides the Ministry of Environment with the statement on the project information upon the notification basis. Such ÚJD SR statement considers the project only from the view of nuclear safety and as a special civil construction authority. In the EIA proceedings, the public may take part in the proceedings by the representatives of the municipalities concerned if they create a group of at least 500 natural persons of age 18 years and more, among which 250 persons at least must be permanent residents in the municipality concerned, or, in form of the non-government public association focused on environmental protection matters. As application of the

Espoo Convention concerns, the 2006 Act on EIA provides for the obligatory transboundary consultations with the neighbouring States. For the nuclear installation projects, there exist any limits or parameters for the environmental impact assessment purposes. The environmental impact assessment shall be realised prior to the territorial planning approval of the project activities, or, prior to the issuance of the license authorising performance of the proposed activities in accordance with the special regulations. Ministry of Environment is obliged to publish the project information on its web site within the time limits set, and, to address the bodies concerned with request for their statement to the project information.

Q.No	Country	Article	Ref. in National Report
22	**United States of America**	Article 18	Section E.1.2.3, Page 36

Question/ Comment: A proposal to amend the Atomic Act will be submitted in 2010 to harmonize the Act, remove ambiguity, and reflect actual experience. Please summarize the major changes being considered and how the public and experts will participate in developing amendment.

Answer: In the proposal of the completely new Atomic Act the most significant changes are in the following areas:

a) **substance** – scope and the content of definitions; volume and content of the safety documentation related with the licence; tightening of the conditions for licensing due to the combating of the acts of terrorism which implies far more precise review of an applicant ´s trustworthiness and credibility; implementation of the WENRA conclusions; diligent overlapping of the licensing procedures pursuant to the 1976 Civil Construction Code and the 2004 Atomic Act for each stage of operational life of nuclear installation; tightening of the requirements for physical protection of nuclear installation as far as it concerns restrictions on entry of persons into nuclear localities; solution of questions concerning the division of liabilities in the cases where the owner of nuclear installation is not itself at the same time its operator, but there are two different subjects; exemption of the provisions on the third party liability for nuclear damage from the Atomic Act and adoption of special law on this issue; delegation of the special professional competency examination on the operator itself; new classification of events at nuclear installation and during shipment of radioactive material; precious separation of dual-use goods exports licensing from some of dual-use goods import licensing; precision of ÚJD SR competencies related to the licensing, ownership, use and management of groups of nuclear materials, as they are divided between the Euratom Community and member States;
b) **procedural changes -** at many places in the 2004 Atomic Act wording the necessary subject to amendment was to govern differences between the licensing **proceedings** and general administrative proceedings as for example: providing for different administrative terms; some formal requirements for the decisions; new types of decisions eventually statements adopted by Authority when reviewing safety documentation and other documentation as basis for further proceedings by another authorities, or, as part of such proceedings; modifications concerning the performance of inspection activities and documentation of its results when comparing with the general provisions on inspection activities laid by Act No. 10/1996 Coll. on inspection activities in the State administration as amended; etc.

Participation of experts is assured through the permanent Working Group of Experts created at ÚJD SR among its staff, consisting of 10 members that holds sessions on regular basis where the new wording of the draft atomic act is being prepared. As soon as the draft atomic act wording will be approved by the ÚJD SR management, the drafted text will be submitted for comments to the operators of nuclear installations (SE, a. s., JAVYS, a. s.), research and development organizations (VUJE a. s.) and to the

Nuclear Fund, eventually, to the relevant academic experts (technical university) for informal review.
Public may submit comments to the proposal during the official inter-departmental notification procedure that is held via internet at the centralised web site of Ministry of Justice – *Web Portal Draft Laws*.

Q.No	Country	Article	Ref. in National Report
23	**Czech Republic**	Article 19	

Question/ Comment	The report indicates that by an amendment of the Act No. 50/1976 Coll. as amended by the Atomic Act No. 541/2004 Coll. effective since 1. 12. 2004, ÚJD SR has become a construction authority. Please provide additional information how this amendment simplifies public administration procedures.
Answer	As regard the constructions of nuclear installation, ÚJD SR acts as a specialized civil construction authority and a municipality participates in the proceedings as authority concerned. ÚJD SR notifies the authorities concerned on commencement of proceedings and may request for their statements on application submitted and the documentation attached within the scope of their competencies (see also page 39 of the National Report). ÚJD SR deems the concentration of the licensing procedure of the construction of nuclear installation pursuant to the general law on civil construction (Act No. 50/1976) and of the licensing procedure of nuclear installation focusing on nuclear safety pursuant to the Atomic Act, which applies from the stage of licensing the construction, at the one and the same authority as positive step forward. Thus, ÚJD SR may basically express all its objectives en bloc in one procedure, where it has position of the nuclear regulatory authority and, concurrently, the civil construction authority. In such proceedings, ÚJD SR provides itself with the statement as the nuclear regulatory authority and, at the same time, it coordinates and considers statements of others authorities concerned in the civil construction proceedings pursuant to the Civil Construction Code. Thereby ÚJD SR achieved position of the highest licensor for construction of nuclear installation.

Q.No	Country	Article	Ref. in National Report
24	**Germany**	Article 19	p. 35, p. 51/52; Sec. E.1.2.2 and F.2.2

Question/ Comment	Act No. 238/2006 (Act on Nuclear Fund) of 2006 establishes the National Fund for decommissioning of nuclear facilities and management of spent nuclear fuel and radioactive waste. The various resources of the fund are described on p. 35 and p. 52 of the report ("contributions of permission holders for operation of nuclear installations generating power, levies collected by operators of transfer and distribution network in prices of supplied electricity, directly from final customers (serving to settle the so-called „historical debt"), penalties imposed by the Nuclear Regulatory Authority (ÚJD SR), interests from deposits, subsidies and contributions from EU funds, state budget and others"). What is the actual value of the fund and what is the percentage of the mentioned contributors?
Answer	The statement of the National Nuclear Fund account (total) on the date of 31 December 2008 is 678.431.699,38 €. The percentage of the National Nuclear Fund contribution in 2008 was following: • Contributions of licensees generating power: 73,75 % ; from this: contribution of operator of NPP V1 (shut down on 31 December 2008): 19.53 %, contribution of the operator of NPPs V2 and EMO-1,2: 80.47 %; • Interest on deposit: 26.15 %; • State subsides: 0.10 % • levies collected by operators of transfer and distribution network in prices of

supplied electricity: 0 %

Financing of the activities, which should be paid within the historical deficit (predominantly the decommissioning of NPP A1), is solved by transfers between sub-accounts of the Fund, at the present time.

Q.No	Country	Article	Ref. in National Report
25	**Germany**	Article 19	p. 40; Sec. E.2.1.3

Question/ Comment: In Section E.2.1.3, regulatory methods to verify operator's compliance with authorization conditions are described. It is stated that there are three types of planned inspections: "routine inspections", "special inspections", and "team inspections". Could you provide some examples for each of these types of inspection performed in the spent fuel storage facility MSVP-JAVYS in Bohunice which ensure, in combination with the periodic safety assessments, the long-term safety of spent fuel interim storage?

Answer: In general, planned inspections are organized as routine, special and team inspections. In the case of an inspections at MSVP-JAVYS facility the ÚJD performs only special inspections. The goal of these inspections is to control if the spent fuel storage is operated in accordance with the Atomic Act No. 541/2004 Coll., Regulations issued on the basis of this Act, limits and conditions of safe operation and operating procedures issued by authorization holders. Special inspections are focused on one special issue or a limited group of issues. Special inspections are applied if there is need to have additional control of the operator. Obviously these inspections are not planned. The team inspection are planned or special inspections performed by team of inspectors from different divisions.

Q.No	Country	Article	Ref. in National Report
26	**South Africa**	Article 19	

Question/ Comment: What is the intention of having a construction authority that specifically oversees construction of nuclear installations? Has this been identified as a national objective or priority?

Answer: In accordance with the Civil Construction Code (Act No. 50/1976), the general civil construction authority is a municipality, where the construction shall be located. In case of a civil construction of great significance, the competent construction authority is the regional civil construction office. At the time during the preparation of the amendment to the Atomic Act, ÚJD SR considered it as appropriate that the civil constructions of nuclear installations in the future would be permitted by the ÚJD SR as the highest authority for nuclear safety issues rather than by the regional construction office. After four years experience as of civil construction authority, ÚJD SR considers the concentration of the licensing proceedings at one body as efficient and effective. Basically, ÚJD SR may express en bloc all its objectives in one single procedure, where it has position of the nuclear regulatory authority and, concurrently, the civil construction authority. In such proceedings, ÚJD SR actually provides the statement as the nuclear regulatory authority and, at the same time, it coordinates and considers statements of others authorities concerned in the civil construction proceedings pursuant to the Civil Construction Code. Thereby ÚJD SR achieved position of the highest licensor for construction of nuclear installations.

Q.No	Country	Article	Ref. in National Report
27	**South Africa**	Article 19	

Question/ Comment: Are there processes and arrangements in place to ensure coordination between different ministries in regard to the safety management of radioactive waste. If yes, are they effective?

Answer: Act No. 575/2001 Coll. on Organization of Governmental Activities and of Central State administration as amended defines the framework of tasks and responsibilities of central

state administration authorities. Details of cooperation are laid down in respective acts of individual authorities involved in legal proceedings. There are also bilateral agreements for close cooperation in order to solve special tasks (e.g. National Labour Inspectorate, Ministry of Economy, etc.). We can say that system is effective enough, because we put into operation several waste treatment and processing facilities, waste repository, mobile waste processing technologies and we successfully manage decommissioning activities, too (See overall summary of questions – word document answers to questions No. 20, 23. 26).

Q.No	Country	Article	Ref. in National Report
28	**South Africa**	Article 20	

Question/ Comment: When applying the standards and recommendations of the IAEA in paragraph 2 on Page 37, it is necessary to develop the standards and recommendations more akin to the experience in the local industry in the view of the regulator?

Answer: Slovak Republic has established a complex legal system (including licensing procedure for all kinds of nuclear installations) in the area of peaceful use of nuclear power in which IAEA safety fundamentals and requirements are implemented. The IAEA Safety Guides are only as an additional tool in process of assessment of submitted safety documentation.

Q.No	Country	Article	Ref. in National Report
29	**South Africa**	Article 20	

Question/ Comment: In regard to the imposition of fines, are these undertaken within a system of fines that is imposed with severity of the offence that has been targeted? Is there a prosecuting authority that imposes the fine and how is this supported by the legislation?

Answer: Fines may be imposed directly upon the Art. 34 of the Atomic Act. ÚJD SR imposes fines for violation of the Atomic Act provisions as described in details by the Atomic Act. Depending on the seriousness of the offence committed, the general and basic gradation of the fines amounts is set in Art. 34 (1) to (6). However, such gradation is based upon setting the highest amount of the fine that might be imposed for the specific sort of offence. The seriousness of the offence is the only criterion used in the act for the gradation of the fine amount, and, at the moment, there does not exist any further internal directive of ÚJD SR for this purpose. In each case, Authority shall consider all circumstances of the case individually and followupon the basis of the ÚJD SR administrative consideration, guidance for which is outlined by Art 34 (9): "… *an account shall be taken of mainly the seriousness, manner, duration and potential consequences of the violation of responsibilities, of co-operation and attitude of the entities subject of supervision or natural persons or legal persons concerned upon elimination of the consequences and to measures taken*." Procedurally, ÚJD SR imposes fine in accordance with the Atomic Act, as the first instance body, by issuance of a formal written decision that shall meet formal requirements and to be issued in due process of law pursuant to the Act No. 71/1967 Coll. on Administrative Proceedings as amended. Person or entity may appeal against fine imposed (file an appeal). Afterwards, ÚJD SR chairperson itself, as a second instance, has to take decision on an appeal upon the proposal of the ad hoc advisory committee basis, but they are not bound by their resolution. In a case of the person is not satisfied with the final affirmative decision of the ÚJD SR chairperson, they may lodge an action at the court asking for revision of legality of the ÚJD SR decision.

Q.No	Country	Article	Ref. in National Report
30	**South Africa**	Article 20	

Question/ Comment: Did the Labor inspectorate not prohibit the use of the classified equipment where 11 significant deficiencies had been identified? Could this situation have been avoided if there was a preventative maintenance program in place?

Answer: The identified deficiencies have been removed during the inspection done by labor

inspectors.
For this reason it was not necessary to prohibit the use of classified technical equipments.
Slovenské elektrárne, a. s. has developed a preventative maintenance program, but the deficiencies have occurred as a consequence of organizational changes.
These deficiencies should not be occurred again, as Slovenské elektrárne, a. s. has committed to monitor schedule and terms of inspections, revisions, tests and maintenance of technical equipments more consistently.

Q.No	Country	Article	Ref. in National Report
31	**Austria**	Article 22	

Question/ Comment: Who performs monitoring arrangements after the closure of a disposal facility? How are institutional controls and monitoring activities financed after closure of the disposal?

Answer: Based on the Act 541/2004 coll. (Atomic Act) the monitoring arrangements after the closure of a disposal facility will be performed by state (Slovak Republic). The institutional controls and monitoring activities after closure of the disposal will be financed trough National Nuclear Fund for Decommissioning of Nuclear Facilities and Management of Spent Fuel and Radioactive Waste.

Q.No	Country	Article	Ref. in National Report
32	**Germany**	Article 24	p. 61; Sec. F.4.3, Sheet F.4.3a

Question/ Comment: Sheet F.4.3a deals with gaseous discharges from NPP A-1 and from treatment technologies of the "TSÚ RAW" waste treatment facility. Regarding the values presented, it is shown that a significant peak for Aerosols beta/gamma and Sr-89, Sr-90 occurred in the year 2002, followed in the years 2003-2005 by values that are comparable to the preceding years. Nevertheless, the column "% of used limit" indicates that during the year 2002 to 2005 the discharges have been about 2 orders of magnitude lower than in the years before and afterwards, in spite of rising or more or less constant discharges.
If this is correct, did the discharge limit values have been changed during that time and if so, what is the reason for this?

Answer: In the table F. 4.3a were wrong data in percentual columns for years 2002 to 2005 included. It was mismatched by transferring data from excel to word. The limits in years 2002 to 2005 were not changed – were the same as in years before and after.
Correct percentual columns are (in yellow colour).

A-1	Aerosols beta / gama		Sr 89, 90		Aerosols alfa	
Year	Discharges [MBq]	% of Limit	Discharges [kBq]	% of Limit	Discharges [kBq]	% of Limit
1994	2,20	0,23	33,20	0,12	155,00	1,76
1995	4,11	0,44	289,00	1,03	418,00	4,75
1996	7,16	0,76	770,00	2,77	781,00	8,88
1997	10,42	1,11	680,00	2,44	1710,00	19,43
1998	16,87	1,79	1180,00	4,20	730,00	8,30
1999	21,50	2,29	540,00	1,93	809,00	9,19
2000	21,62	2,30	158,10	0,56	973,57	11,06
2001	20,70	2,20	207,51	0,74	997,12	11,33
2002	75,75	8,05	1683,21	6,01	78,32	0,89
2003	25,38	2,7	921,42	3,29	24,84	0,83
2004	15,47	1,65	409,87	1,46	28,41	0,32
2005	25,24	2,68	355,44	1,27	20,03	0,22
2006	10,46	1,09	443,13	1,58	41,99	0,48
2007	4,05	0,42	151,92	0,54	9,81	0,11

Q.No	Country	Article	Ref. in National Report
33	**Czech Republic**	Article 25	

Question/ Comment: Who is responsible for the preparation and approval of the following documentation:
- on-site emergency plans and operating instructions for classification of emergency event,
- off-site emergency plans,
- the National Emergency Plan?

Answer: Pursuant to *Atomic Act* (541/2004) § 10 sect. 1 letter p) authorization holder is responsible to work out preliminary on-site emergency plan, on-site emergency plan. Pursuant to § 5 of the Decree No. 55/2006 *on details in an emergency planning for the event of an incident or an accident*, defines the classification levels for incident or accident severity. Authorisation holder shall include this classification into preliminary on-site emergency plan and on-site emergency plan.

Pursuant to § 16 of the *Act on Civil Protection* and § 28 sect.9 of the *Atomic Act* regional offices shall work out off-site emergency plan of region within the emergency planning zone. Details of off-site emergency plan are described in §§ 13 - 17 of the Decree No. 55/2006 *on details in an emergency planning for the event of an incident or an accident*.

The Nuclear Regulatory Authority shall approve preliminary on-site emergency plan and on-site emergency plan, after Ministry of Health reviews it and gives a consent to it (§ 4 sect.2 letter a) of the *Atomic Act*, § 28 sect.8 of the *Atomic Act*)

Ministry of Interior shall approve off-site emergency plan, after Nuclear Regulatory Authority reviews it and gives a consent to it (§ 4 sect. 2 letter e) of the *Atomic Act*, §28 sect. 12 letter a) of the *Atomic Act*)

Government through its special devoted Commissions (former Commission for Radiation Accidents, now through Central Crisis Headquarters) prepares the National Emergency Plan. This Plan is reviewed and approved by members of Government, taking part on works of this Commissions.

Q.No	Country	Article	Ref. in National Report
34	**France**	Article 25	F

Question/ Comment: A diagram showing the different emergency cells, their connections and the entities in action in these cells should be given in chapter F.

Could Slovak Republic specify the frequency of national exercises?

Answer: See overall summary of questions – word document answer to question No. 36.

Q.No	Country	Article	Ref. in National Report
35	**Lithuania**	Article 25	

Question/ Comment: What is foreseen to be done for international cooperation arrangements and bilateral agreements in radiation emergency field?

Answer: Slovakia has concluded bilateral agreements with all neighbouring countries, it means with Czech, Poland Ukraine, Hungary and Austria and also with some other countries like Slovenia, Germany, Romania, and Bulgaria. These agreements are targeted not only to mutual information in case of nuclear incident or accident but they give the framework of possible cooperation in the area of nuclear power, radiation measurements etc. Each year bilateral or even multilateral meetings are organized where the cooperation is evaluated and proposal for future activities are made.

Q.No	Country	Article	Ref. in National Report
36	**Slovenia**	Article 25	page 68

Question/ Comment: Does Slovakia carry out regular emergency exercises? If yes, what is the frequency for local and full scale national exercises?

Answer: YES, Duty to carry out exercises is given by the Atomic Act (541/2004) § 28 “Emergency planning and emergency preparedness” sec. (14):

"*Authorisation holders or regional offices shall exercise procedures according to the emergency plans prior to the commissioning of the nuclear installation or prior to the first shipment of radioactive materials; subsequently, authorisation holders or regional offices shall exercise them at regular intervals, evaluate the exercises and take corrective measures based on the results of evaluations.*"

and by ÚJD SR regulation No. 55/2006 Coll. on details concerning emergency planning in case of nuclear incident or accident; § 10 Training, exercises and updates. In practical terms:

1) Shift exercises each shift 2 times per year

It means
12 exercises of shift personnel of NPP V-1, Bohunice site
12 exercises of personnel of radwaste and spent fuel treatment facility Bohunice site
2 exercises of personnel of National radwaste depository, Mochovce site
12 exercises of personnel of liquid radwaste treatment, Mochovce site
11 exercises of shift personnel of NPP V-2, Bohunice site
11 exercises of shift personnel of NPP EMO, Mochovce site

Some of exercises are focussed on particular issues or people - firemen, health services, environment protection, etc are involved in as appropriate, depending on scenario.

2) Full scale exercise once per year

1 full scale exercise NPP V-1, Bohunice site
1 full scale exercise common for NPP V-1 and NPP V-2, Bohunice site
1 full scale exercise NPP EMO, Mochovce site, off-site emergency structures involved in

3) Exercises of Emergency transport order

1 transport event exercise - transport of fresh fuel, NPP V-2, Bohunice site
1 transport event exercise – transport of radioactive material

Effort is made to get exercised the whole staff of any type of nuclear installation.

4) County exercises (together with relevant districs) are performed regularly once per year

5) Exercise on national level are organized by national Central Crisis Headquarters usually once per five years, but the frequency is not written in the law or decrees.

6) Slovakia takes part in various international exercises organized by international organizations IAEA – Convex exercises; OECD – INEX series exercises; NATO – CMX exercises; EU – ECURIE exercises.

Q.No	Country	Article	Ref. in National Report
37	**Hungary**	Article 26	F.6 p.69

Question/ Comment: What is the time schedule of the decommissioning of NPP A1?

Answer: Process of NPP A-1 decommissioning is devided into 5 decommissioning phases (the second one under preparation currently). End of decommissioning process (brown field foreseen) is planned in 2033.

According to the Strategy of the back-end of peaceful use of nuclear energy:

- I. Stage (formerly named as "giving the NPP into radiation-safe status (defined as the status, when the spent fuel is removed – completed, and liquid or wet radioactive

waste (some of them are untypical) removed, treated, conditioned – it has not been completed yet; the management of some waste streams (e.g. sediments from so-called "spent fuel long-term storage" basin) has turned out to be more difficult as previously expected. End of the 1st stage was planned on 2008 (the management of mentioned sediments will continue; it is expected that all long-term storage sediments will be treated by 2018).

- II. Stage – 2008(9) – 2016 – after this stage only three objects remain within the NPP A1 object structure: object 30 (reactor building), object 32 (steam generators) and 32 A (inactive ancillary building connected with object 30). Some objects and facilities usable for the radioactive waste management will be transferred into the nuclear facility TSU RAO (Technologies for treatment and conditioning of radioactive waste).
- Next stages preliminarily:
  - III. Stage – 2017 – 2020 - dismantling of facilities where the satisfactory information on their contamination are known (or it is expected its relatively easy determination at the previous stage),
  - IV. Stage – 2021 – 2024 – dismantling of the primary circuit pipes and valves in object 30, in object 32: dismantling the primary circuit pipes and turbo compressors, dismantling of high-pressure gas holder and some other devices,

V. Stage – 2025 – 2033 – dismantling of remained facilities and devices (including reactor and steam generators). (See also overall summary of question – word document answer question No. 53)

Q.No	Country	Article	Ref. in National Report
38	**Hungary**	Article 28	J p.99-100

Question/ Comment: The project EUAID was intended to create the foundation of a centralized DSRS management system. What is the projected date to implement such a system?

Is financial provision granted for long-term management of DSRS (long term storage and disposal)?

Answer: The EU AID project was not intended for the construction itself. The aim of the project was to propose organisational and legal measures to improve the management of institutional RAW. The start up of the construction of a centralised storage is postponed. See also overall summary of questions – word document answer question No. 3.

Q.No	Country	Article	Ref. in National Report
39	**Hungary**	Article 28	J p.99-100

Question/ Comment: What kind of data are registered about the disused neutron sources? Are they kept in a centralized store or at the user's facilities?

Answer: All data on neutron source registered in the national source register are kept also in the case if the source is already not used (until source disposal). The neutron sources are not kept in centralized store presently.

Q.No	Country	Article	Ref. in National Report
40	**Hungary**	Article 28	J p.99-100

Question/ Comment: What is the management strategy for disused Ra sources (conditioning, storage, disposal)?

Answer: At present expert group is working on this issue. An official management strategy for disused RA sources is under preparation.

Q.No	Country	Article	Ref. in National Report
41	**Hungary**	Article 28	J p.99-100

Question/ Comment: Is there any approved concept for disposal of DSRS?

Answer: DSRS are managed in compliance with the Act 355/2007 Coll., on Protection, Support and Development of Public Health. Concept for disposal of DSRS will follow the "Institutional RAW and Captured RAW management Strategy in Slovak Republic". See also overall summary of questions – word document answer questions 3, 38.

Q.No	Country	Article	Ref. in National Report
42	**Hungary**	Article 28	J p.99-100

Question/ Comment: Can certain DSRS be disposed of at Mochovce repository, and if so, what criteria are applied?

Answer: In line with the current Limits and Conditions (L&C) no disused sealed sources are disposed at the Mochovce Near Surface Repository till now.
New safety analyses are currently prepared. There will be criteria for some DSRS disposal at the repository (see overall summary of questions – word document answers to questions No. 38, 41).

Q.No	Country	Article	Ref. in National Report
43	**Hungary**	Article 28	J p.99-100

Question/ Comment: Is there any financial incentive to facilitate the transfer of disused sources back to the provider (and thereof to the manufacturer) or to the central storage?

Answer: There is no financial incentive to facilitate the storage or back-transfer of the source, but the holder is committed to pay a financial security charge for treatment, conditioning and disposal of the source for the case of his bankruptcy.

Q.No	Country	Article	Ref. in National Report
44	**Slovenia**	Article 28	page 99

Question/ Comment: There are approximately 3000 sealed radioactive sources currently registered in the database. Approximately 1200 sealed radioactive sources from this number are currently not used and are stored by particular users.
What is the reason that sources not in use are piling up at licence holders? Does Slovakia plan to encourage licensees to declare such sources as waste and transfer them to a central interim storage or for disposal?

Answer: There is a duty fixed in the governmental decree No. 348/2006 for the holder to return the unused high activity source to the supplier or producer, or if not possible to the recognized organization. The start up of the construction of a centralized storage is postponed. Therefore some older unused sources are still kept by the holders. Only few of unused sources kept by the holder are high activity sealed sources, most of unused sources stored by the holder are etalons with low activities.

Q.No	Country	Article	Ref. in National Report
45	**Austria**	Article 32	

Question/ Comment: Are there any criteria for waste exemption and clearance in Slovakia? If there are, please describe them.

Answer: The criteria for clearance of low activity contaminated material from controlled areas (from regulatory control) are fixed in the governmental decree No. 345/2006. The clearance levels refer to the radio-toxicity of the radionuclide. The s clearance levels value are from 0.3 Bq/g up to 3kBq/g. The clearance of radioactive material is a subject of regulatory approval.

Q.No	Country	Article	Ref. in National Report
46	**Bulgaria**	Article 32	B.2-i.4

Question/ Comment: Would you care to specify what are the criteria with regard to packaging used for transportation, storage and disposal of RAW?

Answer: The criteria applied for packaging used for storage and disposal are introduced in Regulation No. 53/2006 Coll. (separate articles with requirements for storage and with requirement for disposal). The criteria applied for packaging used for transportation are introduced in Regulation No. 57/2006 Coll. Both sets of criteria are established based on IAEA documents. In case of transportation criteria mainly TS – R – 1 and in case of disposal criteria ISAM and ASAM projects documentation. Only one packaging in Slovakia (used for transportation, storage and disposal) is Fibre reinforced concrete container used for final disposal of short lived low and intermediate radwaste in Mochovce surface repository. This kind of packaging should follow except above mentioned general criteria also specific criteria for disposal resulting from safety performance analyses for repository.

Q.No	Country	Article	Ref. in National Report
47	**Bulgaria**	Article 32	B.2-i.7

Question/ Comment: Are there regulatory requirements for release from regulatory control of metal radioactive waste in the environment, following their respective decontamination and segmentation?

Answer: There are no fixed specific clearance levels for reuse or release from regulatory control of low activity contaminated metal. The general criteria for clearance of low activity contaminated material from controlled areas are fixed in the governmental decree No. 345/2006. These values can be used also for metal in general. Any cleared material should be decontaminated before clearance. Detailed requirements for activity measurements before clearance are laid down in the governmental decree No. 345/2006 also.

Q.No	Country	Article	Ref. in National Report
48	**Bulgaria**	Article 32	B.2- i.9

Question/ Comment: What technologies are applied for reprocessing and conditioning of institutional RAW?

Answer: Institutional RAW that are in accordance with national radwaste repository acceptance criteria are treated by cementation or bituminization.
Institutional RAW that are not in accordance with this criteria are stored in accordance with national legislation.
New safety analyses are currently prepared for disused sealed sources disposal (DSRS). There will be criteria for some DSRS disposal at the repository (see overall summary of questions – word document answers to questions No. 3, 42).

Q.No	Country	Article	Ref. in National Report
49	**Bulgaria**	Article 32	B.3

Question/ Comment: Would you specify what is the reason for including a limitation for heat generation for categorization of the short lived low and intermediate level of RAW.

Answer: System for categorization of radioactive waste has been implemented from IAEA recommendation (Safety series No. 111-G-1.1 on Classification of radioactive waste) including definition of individual waste classes. In this document the heat generation is the main criterion between low and intermediate level waste and high level waste. Both short lived waste as well as long lived waste are subcategories of low and intermediate level waste for which thermal power should be below 2 kW/m^3.

Q.No	Country	Article	Ref. in National Report
50	**Bulgaria**	Article 32	D.2.1

Question/ Comment: Would you specify the criteria for selection of different packaging for storage of organic radioactively contaminated oils.

Answer: All contaminated oils are stored in 200 litre drums, which are licensed as sufficient packaging for storage of this kind of liquid waste. For historical reasons part of oils was stored in cans and these cans with oils have been repacked into drums latter to fulfil modern storage conditions.

Q.No	Country	Article	Ref. in National Report
51	**Bulgaria**	Article 32	D.2.6

Question/ Comment: Would you specify whether there are regulatory requirements for licensing or certification of packaging type VBK – used for disposal of RAW in the national repository – Mochovce site.

Answer: General requirements for packaging used for disposal of radioactive waste are given by Regulation No. 53/2006 Coll. These have been applied during licensing procedure also for VBK including additional requirements resulting from Mochovce repository specific safety assessment. (See also overall summary of questions – word document answer to question No. 46).

Q.No	Country	Article	Ref. in National Report
52	**Bulgaria**	Article 32	D.2.6

Question/ Comment: Have the radiological criteria in the Safety Assessment of the national repository been determined and what are they?

Answer: Radiological limits are given by Decision of radiation protection regulatory body (under Ministry of health) in 1998 and they are as follows:
- max. effective individual dose after institutional control of repository is 0,1 mSv per year for evolution scenarios
- max. effective individual dose after institutional control of repository is 1 mSv per year for intrusion scenarios

Q.No	Country	Article	Ref. in National Report
53	**Bulgaria**	Article 32	D.3.1

Question/ Comment: Has a complete radiological characterization of the activities initiated on decommissioning of NPP A-1 Bohunice been initiated and what are the methods used?

Answer: NPP A-1 was shutdown after radiation accident. The first stage of decommissioning focused to guarantee radiation safe status; it means actions were taken to minimize risks connected with radiation impact on the environment. Detection of radioactive inventory in these years were oriented only to the critical places. In next stages is a continuous monitoring of technological circuits and equipments, which will be in dependence of their radiation status included into the decommissioning process under consideration. Accepted conception of decommissioning of NPP A-1 suggest the decommissioning of low and intermediate contaminated parts of equipment and technological circuits. In final stage of this process the decommissioning of high by contaminated equipment of primary circuit is considered.
Monitoring is oriented to the radionuclides which limits the deposition process of RAW in the Mochovce repository. Most used methods which assess radionuclide composition are these based on taking samples with direct measurement, let you say monitoring of dose rates with equipment and consecutive mathematic calculation of expected percentage inventory of radionuclides.
See also overall summary of questions – word document answer to question No. 37.

Q.No	Country	Article	Ref. in National Report
54	**Bulgaria**	Article 32	D.3.2

Question/ Comment: In what way have been determined the limits in fragmentation and sorting of metal RAW (500 Bq/cm2), as well as during the process of reconstruction 2001-2002, for work with metals with surface contamination of 3000 Bq/cm2?

Answer: Limit max. 500 Bq/cm^2 for metal fragmentation and sorting device has been determined in relation to using of thermal fragmentation methods (possible release of 137Cs to aerosols) and efficiency of off-gas cleaning system. Original capacity of off-gas cleaning system was cca 2000 m^3/hour.
During reconstruction the off-gas cleaning system capacity has been improved to 7500 m^3/hour together with additional filtration and regeneration module installation. This technical improvements enabled to change the maximum beta, gamma limit for metal surface contamination up to 3000 Bq/cm^2 .
This change has been approved by regulatory bodies.

Q.No	Country	Article	Ref. in National Report
55	**Czech Republic**	Article 32	

Question/ Comment: How is it ensured that the technologies used in the design and construction of the spent nuclear fuel interim storage are proven or qualified?

Answer: According to § 25 of Atomic Act No. 541/2004 Coll. license holder is obliged to establish Quality assurance system which covers also conditions of used technologies and classified equipment during whole lifetime of storage facility.

Q.No	Country	Article	Ref. in National Report
56	**Czech Republic**	Article 32	

Question/ Comment: What is the current status of the decommissioning plan of both units in NPP V-1?

Answer: The V1 NPP Conceptual Decommissioning Plan has been developed and approved in the Slovak Republic. Last update was made in 2006.
The plan presupposes that the decommissioning is performed to greenfield immediately after decommissioning licence is obtained in 2011.
This site is going to be used for industrial purposes, more specifically for the erection of a new nuclear reactor.
The decommissioning is going to take place in 2 phases:

Phase 1: 2011- 2015- dismantling and demolition of non-active equipment and buildings

Phase 2: 2015- 2025- dismantling and demolition of active equipment and buildings

Q.No	Country	Article	Ref. in National Report
57	**Czech Republic**	Article 32	

Question/ Comment: Which of listed mobile facilities for RAW management are routinely used for different categories of RAW generated in nuclear installations and what are the operational experiences.

Answer: All mobile facilities listed in part D.3.4 are routinely used for RAW treatment except of contaminated soils treatment facility.
Experiences with operation of this facilities are satisfactory and results are in compliance with design parameters.
Contaminated soils treatment facility will be put in routine operation during 2009.

Q.No	Country	Article	Ref. in National Report
58	**France**	Article 32	B

Question/ Comment: Could Slovak Republic indicate what is the national policy concerning decommissioning of reactors and waste management facilities definitively shut down (decommissioning level and associated schedule)?

Answer Method of immediate NPP decommissioning to greenfield has been selected in SR. This means that all radioactive wastes (RAW) are going to be removed from the site and regulatory controls are going to be removed from the site by 2025.
RAW are divided in 2 groups:
1.) operational, generated during the operation and its termination (until 2011)
2.) decommissioning RAW, generated during the decommissioning

All these RAW will be treated and disposed of in a national repository at Mochovce site or in Interim RAW storage at Jaslovské Bohunice site (see overall summary of questions – word document answer to question No. 4).

Q.No	Country	Article	Ref. in National Report
59	**France**	Article 32	B.3 - p 11

Question/ Comment Could Slovak Republic clarify if the waste classification given in chapter B.3 is in accordance with the waste specifications disposed of at Mochovce facility? Are these wastes category b.1 waste?

Answer Waste classification given in chapter B.3 is in accordance with the acceptance criteria for radwaste specification disposed of at Mochovce national radwaste repository.
Acceptance criteria are the part of the limits and conditions (L&C) for Mochovce national radwaste repository and of other technical documents derived from the safety analysis and are part of the safety analysis report for this nuclear installation.

Q.No	Country	Article	Ref. in National Report
60	**France**	Article 32	B.2 - p 10

Question/ Comment Low-active soil and concrete debris shall be arranged into layers on supervised stockpiles.
Could Slovak Republic clarify if these stockpiles are considered as storage or disposal facilities?
What are the administrative procedures for the commissioning of such stockpiles?

Answer In the frame of the Bohunice International Decommissioning Support fund (BIDSF) the "Feasibility study of Enlargement of the National Repository at Mochovce" is under preparation. One of the task of this study is to select an appropriate disposal system for VLLW (see overall summary of questions – word document answer to question No. 18).

Q.No	Country	Article	Ref. in National Report
61	**France**	Article 32	Annex V

Question/ Comment The inventory of wastes stored in Bohunice Treatment Centre and disposed of in the Mochovce disposal facility should also be given.

Answer Inventory of RAW concerning to their quantity treated in Bohunice Treatment Centre and disposed of in the Mochovce disposal facility is given in Annex V. , page 109/118 and 110/118.

Q.No	Country	Article	Ref. in National Report
62	**France**	Article 32	D.2.2 - p 21

Question/ Comment Could Slovak Republic indicate if it is planned to replace, in the future, bituminization process of waste by other processes less likely to generate safety concerns during operation (fire, explosion) and more likely to keep their confinement properties on a long-term basis?

Answer Actually the treatment of radioactive concentrates by cementation is the preferred technology but bituminization unit is still considered as an alternative technology for treatment of radioactive concentrates.
Increased attention is given to fire and explosion safety before and during operation of bitumenization unit (DTA analysis of bitumenized waste and final product, temperature control of bitumenized product during several hours after drums filling, operation of fire extinguishing system).

Q.No	Country	Article	Ref. in National Report
63	**Germany**	Article 32	p. 9; Sec. B.1

Question/ Comment: The report says that a concept of a spent fuel storage facility in Mochovce (MSVP-EMO) was passed and that the project is currently in its preparatory stage. When is the commissioning of this facility scheduled? In which facility will the spent fuel assemblies from the operation of Mochovce NPP units be stored until this term?

Answer: No, the decision was postponed. New spent fuel storage for NPP Mochovce will be necessary in 2017. Until then, the SF is stored in the reactor pools in the reactor building in Mochovce, or it is transported to the ISFS at Bohunice site respectively. Their capacity is sufficient until 2017.

Q.No	Country	Article	Ref. in National Report
64	**Germany**	Article 32	p. 9-10; Sec. B.1

Question/ Comment: On page 9, the report states that, pursuant to the basic conception of spent fuel management, possibilities of spent nuclear fuel transportation abroad for permanent disposal or reprocessing without importing the reprocessing products back to Slovakia are being verified. On page 10, it is stated that possibilities of spent nuclear fuel transportation for reprocessing to the Russian Federation without the return of reprocessed products back to Slovakia are inhibited at present by legislative restraints. It is also mentioned that a preliminary proposal for such transport has already been expressed by the Russian side. Please explain in more detail the legislative restraints inhibiting such transports. Are there already any bilateral relations or negotiations with the Russian Federation or other countries to find a solution for this problem?

Answer: See overall summary of questions – word document answer to question 14.

Q.No	Country	Article	Ref. in National Report
65	**Hungary**	Article 32	B.1 p.9-10

Question/ Comment: What are the rules for reviewing the strategic documents (how often, what is the institutional framework, who is responsible)?
Does the content of B.1. reflect the new strategic document? If not, what are the main points of the strategic document?

Answer: "Strategy of the back-end of peaceful use of nuclear energy" is the basic national strategy document in the area of decommissioning of nuclear facilities, radioactive waste and spent nuclear fuel management. The main role of the strategy is to establish priorities and strategy solutions within the back-end of peaceful use of nuclear energy, including the economy and funding issues. Elaboration of proposal of the strategy is one of the main task of the Board of Governors of National Nuclear Fund. In fulfilling of this task, the Board is supported by experts involved in the given area. The proposal is officially reviewed by regulatory bodies (Nuclear Regulatory Authority and Public Health Authority). Proposal goes, together with position of mentioned bodies, to Ministry of Economy for approval. Approved Strategy has to be passed through the Government, after its commenting by all governmental departments. In parallel to this process, the assessment of environmental impact the strategy is under way. Description of that process is in the answer to question 21. According to the respective legislation, the strategy shall be updated in less than five years. The strategy was approved by the Slovak Government in May 2008. Currently, i.e. much earlier than after five years, the Board of Governors begins with elaboration of the updated strategy proposal. Requirement to incorporate the institutional waste management issue (the strategy has originally considered only the activities payable from the National Nuclear Fund according to the respective legislation), problem of strategy solution of the last step of spent nuclear fuel management and the issue of historical deficit are the main reasons for that.
In fact, B.1 part does not cite the above mentioned strategy. The text here cites the Power Policy of the Slovak Republic (2000). Generally, the text is in line with the

above-mentioned “Strategy of the back-end of peaceful use of nuclear energy”. Nevertheless it needs some additional clarifications. These clarifications are provided in overall summary of questions – word document answers to questions: 1, 9, 12, 13, 14, 15.

Q.No	Country	Article	Ref. in National Report
66	**Hungary**	Article 32	B.2 p.10

Question/ Comment: “Low –active soil and concrete debris shall be arranged into layers on supervised stockpiles.”
Does it mean storage or disposal? If storage, where and for how long time?

Answer: In the frame of the Bohunice International Decommissioning Support fund (BIDSF) the “Feasibility study of Enlargement of the National Repository at Mochovce” is preparing now. One of the task of this study is to select an appropriate disposal system for VLLW (see overall summary of questions – word document answers to questions No. 60, 18).

Q.No	Country	Article	Ref. in National Report
67	**Hungary**	Article 32	B.2 p.10

Question/ Comment: Will you introduce reversibility and retrievability in the concept of RAW management for deep geological disposal?

Answer: Regarding the reversibility: in the past (1996-2001), the reversibility issue was not directly considered in previous documents on deep geological disposal development program (see also overall summary of questions – word document answers to questions 1, 9, 12, 13, 14, 15). On the other hand, the fact that such program was interrupted in 2001 and no significant revivification could be observed.
It can be supposed, that issue of retrievability will be an important subject of discussion among the deep geological repository implementers worldwide.
In addition it could be noted that there are two near surface type repositories worldwide, where the retrievability of waste packages has been explicitly required in the licensing documents. The Slovak repository in Mochovce is one of them. The retrievability retention requirement does not specify answers to questions present itself: what should be an initiating event for that?, how long the given possibility should be retained?, what should be done with retrieved waste packages?, etc.

Q.No	Country	Article	Ref. in National Report
68	**Hungary**	Article 32	B.3 p.12

Question/ Comment: What are the limits and conditions of safe operation for surface repository of radioactive waste?

Answer: (L&C) for the national radwaste repository were established based on safety analyses in national radwaste repository. The limits apply to all RAW from operation.
They are divided into:
1. Safety limits
   - Maximum radionuclide inventory of radionuclide activities in wastes disposed of
   - Maximum concentration of limited radionuclides in the container
   - Configuration of storage of waste-laden containers at the national repository
   - Form of wastes being accepted
   - Contents of undesirable components
   - Strength of cemented products
   - Waste-laden container properties
   - Waste-laden container weight
   - Leachability
2. Safe operation limits of conditions
   - Crane travel subsidence
   - Monitoring for water presence at storage box premises
   - Monitoring for water level of drainage system collection tanks

Water liquid discharges from the national radwaste repository.

Q.No	Country	Article	Ref. in National Report
69	**Lithuania**	Article 32	B.3, page 11
Question/ Comment	Clearance levels are established in Slovak Republic. What about practice – do you have measurements facilities for free release of solid material?		
Answer	There are several approved facilities for measurement of contaminated material for clearance purposes. They are operated mostly by nuclear installations- nuclear power plants. Some of approved monitoring facilities are also owned by the service companies. Most of monitoring equipments are designed for measurement of material in 200 l barrels. They are equipped with 4π gamma detectors, mostly combined with semiconductor detector or detectors. The activities of hard-to-detect radionuclides are calculated on a base of appointed proportion with reference gamma radionuclide. The complete radionuclide vector including hard-to-detect radionuclides must be established before measurement in barrels on a base of representative sampling and relevant laboratory measurements for any homogeneous batch of material.		

Q.No	Country	Article	Ref. in National Report
70	**United States of America**	Article 32	Section A, Page 7
Question/ Comment	The EBO 2 power reactor at Bohunice will be shut down at the end of 2008. Please update the status of EBO 2 during your national presentation in May 2009.		
Answer	On 31st December 2008 the V1 NPP Unit 2 was shut down to mode 5: reactor sealed fuel in the reactor. It will be in this condition until the end of the year, when the fuel from the pool will be transported from the Unit 2 to the ISFS. After the reactor will be unsealed and the fuel will be transported from it to a storage pool - mode 7.		

Q.No	Country	Article	Ref. in National Report
71	**United States of America**	Article 32	Section A, Page 7
Question/ Comment	A final liquid radioactive waste treatment facility (FS LRAW) is in trial operation since 2007. A Slovak Resolution limits trial operations to 12 months. Please describe its current status and issues or problems with full scale operation, and why trial operations may be continuing in spite of the 12 month restriction.		
Answer	Trial operation of final liquid radioactive waste treatment facility (FS LRAW) was approved by Slovak regulators on 8th. October 2007. Trial operation of FS LRAW has been started on 20th. Oct. 2007. During trial operation it was necessary to realize some design changes in connection with the steam supply to the FS LRAW. Because of this design changes trial operation of FS LRAW has been prolonged by regulators up to 30th. April 2009.		