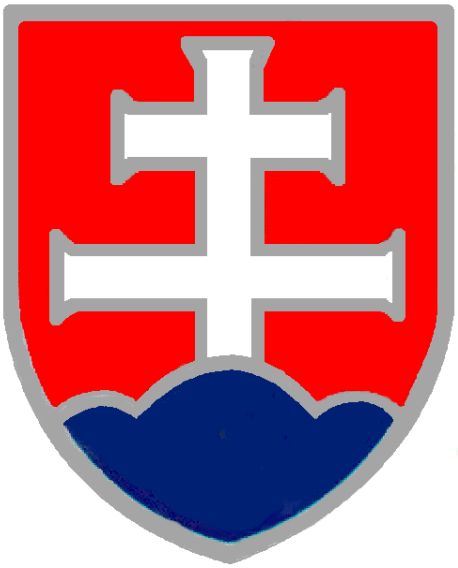
ANSWERS TO QUESTIONS

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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APRIL 2006

Answers to questions on National Report of the Slovak Republic

Slovakia is pleased to present to the State Parties of the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management the Answers to questions received on the National Report of the Slovak Republic compiled according to the terms of the Joint Convention (2005). Slovakia is ready to provide additional explanations to these Answers during the 2nd Review Meeting.
The 1st National Report is available at www.ujd.gov.sk (documents).

Joint Convention
Questions Posted To Slovakia in 2006

Seq. No	Country	Article	Ref. in National Report
1	France	General	Section K Page 62

Question/ Comment: Could Slovakia provide information on the elaboration and validation process applied to the proposed measures mentioned in section K.2 ?

Answer: The safety enhancing measures are identified based on:

- operator experience and measures from failure commissions
- feedback from other NPPs of a similar type
- ÚJD SR recommendations and decisions
- recommendations from the IAEA and international missions

The proposed measures are discussed by the plant Technical Committee (TC). Following TC recommendation, they are submitted for approval to the management meeting. Thereafter, a project of changes and modifications is developed, which is submitted pursuant to Act No. 541 to ÚJD SR either for consideration or approval, depending on the nature of the change. Upon issue of ÚJD SR consent or ÚJD SR review, the change and modification implementation phase follows. After the implementation phase completion, the operator is obliged under Act No. 541 to present ÚJD SR a revision of a particular section of the safety analysis report for approval or consideration.

Seq. No	Country	Article	Ref. in National Report
2	Netherlands	General	Annex IV

Question/ Comment: Inventories in this Annex are expressed as cubic meters, more information on contents & activity would be useful.

Answer: Solid RAW at VVER nuclear power plants - summary activity of drums is only indicated in transport of drums for processing. It is calculated from the values of dose rate and drum weight. Every drum is measured for the dose rate and surface contamination.
The dose rates values range between:
combustible SRAW - 60 and 1800 microgray/hr
active coal - less than 1 microgray/hr
solid RAW for high-pressure compaction - 16 and 1000 microgray/hr
solid RAW for cementation (SIAL matrices) - 300 and 500 microgray/hr
concrete for *dying-cul* - less than 1 microgray/hr
Surface contamination must be less than 0.3 Bq.

Summary activity of NPP A-1 solid RAW Beta + Gamma ranges between
10 e^5 Bq and 10 e^{13} Bq.
Summary activity of tank concentrates ranges between:
NPP V-1 5.9 e^6 Bq/l and 2.35 e^7 Bg/l
NPP V-2 6.0 e^4 Bq/l and 7.67 e^5 Bq/l
NPP EMO 1.4 e^4 Bq/l and 7.38 e^5 Bq/l

Summary activity of liquid RAW at NPP A-1 ranges between:
Beta, Gamma 1.3 e^9 Bq/l and 3.0 e^{15} Bq/l
Alfa 6.6 e^4 Bq/l and 2.4 e^9 Bq/l

Seq. No	Country	Article	Ref. in National Report

3	Austria	Article 1	Section D Annex III

Question/ Comment: What is the current capacity and inventory of the ISFS in terms of number of fuel assemblies? Are projections for the future available? If so, what are they and what scenarios have been assumed concerning NPP operation and decommissioning?

Answer: Current ISFS capacity is 14 112 fuel assemblies. This capacity is satisfactory for operation of all NPP Bohunice units till the end of their lifetime and for some part of spent fuel from NPP Mochovce.

Seq. No	Country	Article	Ref. in National Report
4	Czech Republic	Article 6	

Question/ Comment: Since 2003 are there any further steps related to the siting of a new spent fuel storage facility that will accommodate spent fuel from NPP Mochovce?

Answer: No, the decision was postoned. New spent fuel storage for NPP Mochovce will be necessary in 2017.

Seq. No	Country	Article	Ref. in National Report
5	Lithuania	Article 6	

Question/ Comment: Is there a procedure in Slovakia of informing contracting parties according sub-article (iv)? If yes, what is this procedure?

Answer: In siting the proposed SF management facilities, assessment of the site and factors affecting safety and information to members of the public are implemented under the relevant provisions of Act No. 24/2006 Coll. on environmental impact assessment. The list of facilities subject to international negotiation in terms of their effects beyond state borders is set out in Annex 13 and the issues concerning the assessment of the proposed facilities´ effects transcending state borders are dealt with by Annex 14, 15.
In addition there are governmental agreements with all neighbouring countries within which regular meeting are taking place to exchange relevant information . More over article 37 of the EURATOM Treaty is relevant under wich the Member States of the EU are consulted.

Seq. No	Country	Article	Ref. in National Report
6	Czech Republic	Article 7	

Question/ Comment: The report mentions that UJD became a specialized construction authority according to the Act No. 50/1976 Coll. (Construction Act).“ Could the Slovak Republic provide information about collaboration UJD with local construction authorities?

Answer: As regards the construction of nuclear installations, UJD acts as a specialized construction authority and a municipality acts as an affected authority . UJD asks for statements of affected authorities and informs them on beginning of legal proceedings.

Seq. No	Country	Article	Ref. in National Report
7	Germany	Article 8	p. 49

Question/ Comment: Do the requirements for periodical safety assessments of spent fuel and radioactive waste management facilities comprise special measures that refer to the long-term safety of interim storage?

Answer: The requirements are described in § 23 Nuclear safety of Atomic Act. The requirements cover whole lifetime (operation as well as decommissioning) of a nuclear installation.
The Regulation No. 49/2006 Coll. on periodic safety assessment describes general requirements for periodical safety assessment of nuclear installation (including spent fuel and radioactive waste management facilities).
Under Art. 2 of UJD Regulation No. 49/2006 Coll. on periodic evaluation of nuclear safety “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 licence“, with such evaluation being 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 assessment is done according to current status of knowledge in the respective field. The special measures that refer to the long-term safety of interim storage are described in the safety report, which is subject to periodical safety assessments.

Seq. No	Country	Article	Ref. in National Report
8	Czech Republic	Article 9	

Question/ Comment: As SE-VYZ spent fuel storage facility relies on active operation technologies how does the operator ensure that adequate safety-related engineering and technical support is available throughout the whole lifetime of the facility

Answer: This area is for all lifetime of nuclear facility realized in accordance of Quality Management System (QMS) and in accordance of Schedule for operational control of equipment of Interim Spent Fuel Storage (No. HMG-02/MSVP) (ISFS) , witch include controls going out from Regulations of UJD, Individual Programs for Quality control for each equipment (choiced in point of view of nuclear safety), decisions of UJD and Long term monitoring program for building parts and technological systems of ISFS (No. PS M9-R).
For example the seismological reinforce and reconstruction of building constructions and technological systems of interim spent fuel storage facility was done in the framework of reconstruction works of interim spent fuel storage facility in 1997 – 1999.
The condition of civil contruction as well as the condition of technological systems and spent nuclear fuel is monitored through monitoring programs.

Seq. No	Country	Article	Ref. in National Report
9	Czech Republic	Article 11	

Question/ Comment: How is ensured a safety of long term storage liquid radioactive waste (concentrates and ionexchangers) from the point of view possible corrosion of storage tanks?

Answer: Each tank with concentrate as well as ion exchangers is installed in individual room. Internal walls are coated by stainless steel which creates hermetic tight secondary tank. It is possible to pump outside to another tank of medium from leaked tank or a medium from the room around the tank.

The tanks are made of stainless material. Pursuant to the regulatory, one tank must be empty in order to secure a free capacity corresponding to the capacity of the largest tank in the system. The tanks are controlled by ultrasound measurement of the wall thickness and visual inspection.

Seq. No	Country	Article	Ref. in National Report
10	Czech Republic	Article 11	

Question/ Comment: Taking into account possible formation of sludges in storage tanks for liquid radioactive waste, do you have an idea how such sludges will be removed form these tanks and treated and conditioned?

Answer: NPP Mochovce uses from the beginning of the liquid RW production the possibility to mixture a volume of the tank with RW concentrate. A volume of each tank is regularly mixed with the help of on bottom lying air collector. According to our experience it is important to keep correct conditions of the tank volume and to prohibit creation of hard sediment of sludge.

The firm Alldeco carried out for NPP V-2 the removal of sludge using a mobile equipment of waste water tanks 1,2TR10B01(2003 to 2004). The produced sludge was solidified into SIAL matrices at the point of formation. Solid waste (solidified sludge) laden drums are stored at the SRAW storage facility, some of the drums have been transferred to SE-VYZ and stored in FCCs. Sludges from ra-concentrate tanks 0TW10B01 to B09 could be removed this way following the full drainage of the tank.

Seq. No	Country	Article	Ref. in National Report
11	France	Article 12	Section H2 Page 53

Question/ Comment: Could Slovakia provide information on past practices, related remaining safety issues and remediation programs (schedules, entities involved, financing schemes, final status...)?

Answer: The first phase of NPP A1 decommissioning that should finish in 2007 can be characterised as follows:

- All spent fuel has been removed from the long-term storage and the liquid waste that represents the highest potential risk has been solidified or stored in new tanks,
- The majority of liquid operational waste has been conditioned into a form enabling safe disposal,
- The other radioactive waste has been processed into a form allowing safe disposal or storage,
- The essential decontamination has been completed aiming to reduce the potential sources of radioactivity leakages.

A project entitled Decontamination of the Primary Circuit of A-1 Nuclear Power Plant (referred to as Project in the following text) was funded by the Phare programme. A Consortium formed by a Slovak company AllDeco s. r. o. from Trnava and Belgoprocess from Belgium was awarded the contract. The work started in May 2004 and was completed within its allocated time in May 2005. The objective of the Project was to perform preparatory work for pre-dismantling decontamination of the primary circuit of NPP A-1 Jaslovské Bohunice in Slovakia. The Project consisted of the following five Tasks:

- Remote monitoring of radiological characteristics and physical survey of the reactor and primary circuit of NPP A-1
- Proposal for the separation of the ractor vessel from the primary circuit
- Proposal for surveillance of the separated reactor vessel during its long term storage
- Detailed design of decontamination procedures for selected parts of the primary circuit of NPP A-1
- Proposal for management of radioactive waste arising from decontamination of the primary circuit of NPP A-1

Seq. No	Country	Article	Ref. in National Report
12	France	Article 12	Section H2 Page 53

Question/ Comment: Did Slovakia recently perform a re-evaluation of the impact of the near-surface disposal site?

Answer: Under Art. 2 of UJD Regulation No. 49/2006 Coll. on periodic evaluation of nuclear safety “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 licence“, with such evaluation being 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 national radwaste repository was commissioned in 2001, i.e. the first periodic evaluation will be needed to be carried out in 2009.

Seq. No	Country	Article	Ref. in National Report
13	United States of America	Article 12	53

Question/ Comment: The Slovak national report addresses the provisions of Article 12 by referring the reader to the 1st National Report reviewed in November 2003, even for those questions based on apparent omissions in that report. Issues were raised at the Country Group 1 session regarding the Slovak report. These included a series of questions regarding elaborating on past practices, the reassessment of the near surface disposal site at Mohovce, and clarification of the “free storage” practice. The areas questioned regarding existing waste management facilities and past practices are not addressed in the 2006 Slovak National Report. Please include this information in the third report and address this comment in your national presentation.

Answer: Under Art. 21 of Act No. 541/2004 Coll. on peaceful uses of nuclear energy (Atomic Act) “All radioactive waste management activities must be directed to their safe disposal“. According to the adopted philosophy all operation RAW have to be processed as of the date decommissioning (if possible)?.
All operation RAW that comply with the conditions for disposal at the near-surface disposal site are continuously processed at the Bohunice Processing Centre and disposed of at the Mochovce National Radwaste Repository. Those RAW that would fail to comply therewith will be conditioned and stored at the integral storage facility (under construction) until disposal thereof at the deep geological repository.

Seq. No	Country	Article	Ref. in National Report
14	France	Article 13	Section H3 Page 54

Question/ Comment: Existence of guidelines for the evaluation of site-related factors and long-term impact evaluation could be indicated, if any.

Answer: Slovakia follows in repository siting the internationally applicable recommendations (IAEA Safety Guides 111-G-3.1, 111-G-4.1 ….) .
The environmental impact assessment is governed by Act No. 24/2006 Coll. on environmental impact assessment.

Seq. No	Country	Article	Ref. in National Report
15	Denmark	Article 14	

Question/ Comment: Is there prepared detailed plans for the construction of the deep geological repository, intended to house radioactive waste, which cannot go into the Mochovce Near Surface Repository? If so, will these plans be presented at the joint convention meeting in 2006?

Answer The deep geological repository development plant was approved at SE, a.s., in 2003.

Phase 1 (1996-1998)

- Co-ordination activity
- Design and implementation activities
- Source member, field of near and remote interactions
- Siting
- Safety analyses

Phase 2 (1998-2001)

- Design and implementation activities
- Siting and remote interactions
- Safety analyses.

Phase 3 (reduction in the number of sites and passage from the level of study sites to survey) 2004-2006 (a delay in the execution of this phase occurred because of SE, a.s., restructuring and privatisation).

- Safety analyses
- Geologic-survey works
- Organization-management activities

Phase 4 (selection of a prefered site out of two) 2007-2012

- Safety analyses
- Geologic-survey works
- Organization-management activities

- Definitive selection of the site (planning decision) 2012-2015
- Setup of an underground laboratory
  at the site of the selected deep geological repository
  and long-term monitoring thereof 2015-2030
  implementation commencement (building permit) 2030
  deep geological repository development completion 2037
- Deep repository commissioning (obtaining a licence) 2047

Seq. No	Country	Article	Ref. in National Report
16	United States of America	Article 15	54

Question/ Comment The Slovak national report addresses the provisions of Article 15 by referring the reader to the 1st National Report reviewed in November 2003, even for those questions based on apparent omissions in that report. Issues were raised at the Country Group 1 session regarding the Slovak report. These included questions regarding the frequency of safety reviews of spent fuel and waste management facilities and additional information on assessment of post-closure scenarios of near surface disposal. The areas questioned regarding assessment of safety of waste management facilities are not addressed in the 2006 Slovak Report. Please include this information in the third report and address this comment in your national presentation.

Answer Periodic assessments of nuclear safety of nuclear installations must be carried out under the new ÚJD SR Regulation No. 49/2006 Coll. The periodicity is established to 10 years, with the first periodic assessment to be carried out as of the day on which an eight-year period since the operation licence issue expires.

Information on assessment of post-closure scenarios of near surface disposal:

- For the post-closure period, the choice of the scenarios followed NUREG 1199 standards as required by the UJD. Scenarios used for trench repositories were adapted to the vault disposal conditions and extended with scenarios following the violation of barriers

comprising the reinforced concrete containers and concrete structure of the repository.

- The normal evolution scenario assumes severe failure of the top cover of the repository after the institutional control period (300 years) so that infiltrating water saturates the repository and gradual degradation of the waste packages occurs. The released radionuclides are assumed to migrate through the bottom clay layer and to be transported via the aquifer to a stream and then to a lake.
- Human intrusion scenarios
  Construction scenarios - After the institutional control period human activities such as the construction of road and buildings are supposed to take place on the site

Residence scenario. This scenario is considered to be only applicable to simple dwelling (maximum foundation depth 4 m, surface 10m x 10m = 120m2) built on the site with the waste and material excavated for the foundations spread around the house.

Seq. No	Country	Article	Ref. in National Report
17	Czech Republic	Article 16	

Question/ Comment: Provide information on operational limits and conditions including waste acceptance criteria for Mochovce disposal facility. Do they cover also criteria for disposal of ion exchange resins and sludges and if yes in which form.

Answer: L&C for the national radwaste repository were established under safety analyses - POSAR. The limits apply to all RAW from NI operation, i.e. also for ion exchanges.
They are divided into:

1. Safety limits
   - Maximum radionuclide inventory of radionuclide activities in wastes disposed of
   - Maximum concentration of limited radionuclides in the waste-laden 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

Seq. No	Country	Article	Ref. in National Report
18	Denmark	Article 16	

Question/ Comment: Which types of disused sealed sources can be deposited in the Mochovce Near Surface Repository – and which should go into the planned deep geological repository?

Answer: In line with the current L&C no disused sealed sources are deposited at the Mochovce Near Surface Repository as yet.
New safety analyses are currently prepared that will allow to complete L&C to include the criteria for DSS disposal at the repository.

Seq. No	Country	Article	Ref. in National Report
19	France	Article 16	Section H.5.2 page55

Question/ Following the incident that occurred in Japan in 1997 in the Tokaï bituminization unit, did Slovakia

Comment developed an improvement action plan for the SE-VYZ waste treatment unit?

Answer On the bituminization line, increased attention is paid to physical and chemical properties of radioactive concentrates prior to their bituminization and, if necessary, change in their parameters made to prevent a thermal reaction from getting arisen in the bituminization product.

Seq. No	Country	Article	Ref. in National Report
20	France	Article 16	Section H6 Page 55

Question/ Comment Could Slovakia provide more detailed information on the waste acceptance criteria applied to the existing facilities and the related procedures?

Answer The acceptable criteria are part of the limits and conditions (L&C) of a nuclear installation and of other technical documents derived from the safety analyses set out in the safety analysis report for the national radwaste repository.

Seq. No	Country	Article	Ref. in National Report
21	Hungary	Article 17	H.7.2 p. 56-57

Question/ Comment Will the complete monitoring system be operated during the planned 300 years of institutional control period?

Answer The repository monitoring system will be operated also over the 300-year ICP, however not to the extent it is operated currently and some of its parts will be modified to match the conditions following the repository closure (gravity water drainage from the whole area, and the like).

Seq. No	Country	Article	Ref. in National Report
22	Slovenia	Article 17	Section H.7.1, p. 56

Question/ Comment What is the expected time for maintaining records about the repository?

Answer Records on stored RAW will be maintained (in digital and paper form) as a minimum over the institutional control period, i.e. 300 years. This is determined by Art. 13 of UJD Regulation No. 53/2006 Coll. laying down particular of requirements in the management of nuclear materials, radioactive wastes and spent fuel. The holder of the licence for closure of the repository and institutional control registers data under a special regulation and maintains them by the end of the institutional control.

Seq. No	Country	Article	Ref. in National Report
23	Sweden	Article 17	H,7, pp. 56-58

Question/ Comment Could you please summarise the legal provisions in Slovakia - if any - governing post-closure issues, relating to i) monitoring, ii) active or passive institutional control such as archive requirements, iii) ownership or other legal issues foreseeing post-closure events and activities?

Answer Legal provisions governing post-closure issues are given by article No. 22 of Atomic act. They are dealing with regulatory safety-related requirements for closure, monitoring, institutional control as well as licensing procedure concerning repository closure. In attachment of Atomic Act the required documentation to be submitted for mentioned activities is introduced. In addition regulations (No. 50/2006 Coll. and No. 53/2006 Coll.) further details are prescribed such as requirements for scope and content of monitoring, actions to be done during active/ passive part of institutional control and necessary corrective measures, documents archiving process, etc. Also there is possibility for regulatory body (directly resulting from act) to put into the closure licence another particular conditions regulating post-closure and institutional control phase.

Seq. No	Country	Article	Ref. in National Report
24	France	Article 19	Section E Page 20

Question/ Could Slovakia clarify the role of the regulatory body regarding the technical review of the safety

Comment related documents and SAR?

Answer Legal and technical review of safety documentation is carried-out primarily by specialised regulatory body staff. In some cases, there is a possibility to take an external cooperation with technical support organisations. Regulations No. 50/2006 Coll. And No. 56/2006 Coll. ares containing provision that operator should submit independent evaluation of the safety documentation.

Seq. No	Country	Article	Ref. in National Report
25	Netherlands	Article 19	Section E

Question/ Comment According to the report the responsibility for radiation protection in the Slovak Republic is divided. Different ministries have responsibility for the public, the workers and discharges of radioactive material in air and water. Please explain how this affects the possibility to make homogeneous assessments and statements?

Answer Whole responsibility for radiation protection, including public and workers exposure and discharges of radioactive material in air and water, belongs only to the Ministry of Health of the Slovak Republic.

The most important for UJD is the competence of supervising the nuclear safety of nuclear installations. For ÚVZ the most important competence is supervising the sources of ionising radiation.
Besides the principal division of powers in the above-mentioned acts, there exists also inter-departmental agreement on co-operation between the UJD and UVZ, concluded by UJD and Ministry of Health upon the Slovak Government Resolution No. 442/2003 of the 23 June 2003.

The basic principle of co-operation and joint inspections between the UJD and UVZ is to avoid "dual inspections" (obtaining the operator with the same things twice) as well as exchange the information and findings that might be of other authority interest or relevance for inspection. For example, in 2005, three special joint inspections were performed. These inspections were focused on fulfilment of requirements for nuclear and radiation safety according reconstruction of vitrification facility, commissioning of discontinual bituminisation facility and management of contaminated soils. This system of joint inspections was developed due to lack of clear definitions of powers, problems with the existence of dual competency as well as experience during the last period.

Seq. No	Country	Article	Ref. in National Report
26	Slovenia	Article 19	Section E.1.2.2 p.19

Question/ Comment It is reported that the new Act (No.541/2004 Coll) repealed all Regulations issued to date and that new regulations are currently under preparation. Could you please explain the regulation that is at present in force?

Answer The Atomic Act took effect on 1st December 2004, under which 13 new regulations were prepared. New regulations took effect on1st March 2006. During this transition period requirements from drafts of regulations were applied as conditions of decisions issued by UJD.

Seq. No	Country	Article	Ref. in National Report
27	France	Article 20	Section E Page 19

Question/ Comment It should be indicated here that provisions for decommissioning have to be compulsorily described in the construction, commissioning and operation licensing documentation.

Answer The provisions for decommissioning documentation are primarily described in the articles E.2.1, H.4.1 and H.6.1 of the National Report.

E.2.1 Nuclear safety supervision
Preliminary conceptual decommissioning plan belongs among documentation for licensing construction of a nuclear installation, which will be issued by UJD following written application from the building owner supported with appropriate safety documentation (see H.4.1) under Art.18 of the Atomic Act and under Annex 1 (B) thereof.

Conceptual decommissioning plan belongs among documentation for licensing commissioning and operation of a nuclear installation, which will be issued by
UJD following application from the operator supported with appropriate safety documentation (see H.6.1) and a report on the assessment of the previous phase of commissioning under Art.19 of the Atomic Act and under Annex 1 (C) thereof.

Seq. No	Country	Article	Ref. in National Report
28	France	Article 20	Section E Page 20

Question/ Comment Can opinion of UJD supersede opinion of other bodies involved in licensing in the framework of a licensing process?

Answer Opinion or decision of UJD cannot annul, substitute or abrogate opinion or decision of other regulatory authorities participating in the licensing procedure.

The competencies of each governmental regulatory body is laid down in the Act No. 575/2001 Coll. LL. on the Organisation of Activities of the Government and Central Public Service Authorities (as amended from time to time) and particularly in specific acts of their material competence. Each regulatory body issues decisions based on their specific acts of competence.
UJD issues its decisions focused on nuclear safety. UJD as a specialized construction authority is bound to take other authorities opinions into consideration when issuing the final decision in the construction proceedings.

Seq. No	Country	Article	Ref. in National Report
29	France	Article 20	Section E Pages20-21

Question/ Comment Does UJD rely on expert organizations for the assessment of the licensing documentation (in particular safety reports)? If the answer is positive, how are selected the experts? Are they submitted to a certification process? What is their level of independency?

Answer The regulatory body uses in the safety assessment of the supervised nuclear facilities services of the International Atomic Energy Agency and cooperater with other regulatory bodies and their technical support organisations. Important is co-operation between the UJD and STUK (Finland), GRS (Germany), IPSN (France), US NRC (USA) and European Commission (projects financed from EC). In addition UJD has established a Department of Safety Analyses and Technical Support. The department has been equipped and the staff has been trained under the international projects and co-operation (Swisslovak projects). The department performs independed safety analyses, review and assessment of NPPs safety for UJD.
Particular answers:

- Does UJD rely on expert organizations for the assessment of the licensing documentation (in particular safety reports)? – Yes.
- If the answer is positive, how are selected the experts? – They are properly qualified workers of specialized organizations like VUJE, a.s. (Research Institute of Nuclear Power Plants, Inc.), VÚEZ, a.s. (Research Institute of Energy Plants, Inc.), various scientific institutes of the Slovak

Academy of Sciences, and Universities.

- Are they submitted to a certification process? – They have to have a required academic degree closed with the State examination and a specified practice.
- What is their level of independency? – They may not be connected with a development of the documentation reviewed.

Seq. No	Country	Article	Ref. in National Report
30	France	Article 20	Section E Page 23

Question/ Comment: Is the sharing of competencies between UJD and UVZ defined in a regulatory text?

Answer: The division of powers between UJD and UVZ is established in the Act No. 541/2004 Coll. LL. (for UJD) and in the Act No. 272/1994 Coll. LL. on Public Health Care Services as amended (this is going to be replaced by the newly published Act No. 126/2006 on Public Health Care Services that will enter into force on June 1, 2006).

The most important for UJD is the competence of supervising nuclear safety of nuclear installations. For ÚVZ the most important competence is supervising the sources of ionising radiation.

Besides the principal division of powers in the above-mentioned acts, there exists also inter-departmental agreement on co-operation between the UJD and ÚVZ, concluded by UJD and Ministry of Health upon the Slovak Government Resolution No. 442/2003 of the 5 June 2003.

The basic principle of co-operation and joint inspections between the UJD and UVZ is to avoid "dual inspections" (obtaining the operator with the same things twice) as well as exchange the information and findings that might be of other authority interest or relevance for inspection. For example, in 2005, three special joint inspections were performed. These inspections were focused on fulfilment of requirements for nuclear and radiation safety according reconstruction of vitrification facility, commissioning of discontinual bituminisation facility and management of contaminated soils. This system of joint inspections was developed due to lack of clear definitions of powers, problems with the existence of dual competency as well as experience during the last period.

Seq. No	Country	Article	Ref. in National Report
31	Hungary	Article 20	E.2.1.2, p. 20

Question/ Comment: When discussing the inspection plan, what is the meaning and content of the section „VÚJE NI"?

Answer: "VÚJE NI" means nuclear facility operated by VÚJE.

There are two areas of inspection activities/special inspections at VÚJE:

1. VÚJE management - Personnel training and qualification
2. VÚJE Training Centre - Personnel training and qualification

ÚJD´s attention is directed to the overall personnel training system, preparation of training programs and study materials for training of all categories of NI employees at the training and education centre VÚJE, which performs selected parts of NPP staff training.

Seq. No	Country	Article	Ref. in National Report
32	Hungary	Article 20	E.2.1.2, p. 21

Question/ Comment: • What kind of statistical evaluation is included in the analysis of inspection activities? Has the means of financial penalty been used by the regulatory body anytime, and if so, what was

its extent?

Answer Analysis of inspection activities contains:

- total number of team, special, unplanned and routine inspections
- total number of protocols (tables and diagrams)
- total number of findings, shortcomings and number of good practice examples
- average number of findings, shortcomings and number of good practice examples per 1 inspection
- the most frequent shortcomings and codes of shortcomings (in respect of inspection directive)
- conclusions and recommendations for Inspection plan for the next year

Example of financial penalty:
Financial penalty as a result of unplanned/special inspection due to non-compliance with L&C at the Mochovce NPP (UNSOLVED LONGTERM INDICATION OF EXCESSIVE PRESURE ON THE MAIN COOLANT PUMP SERVICE DECK A301/1,2) in 2004. UJD has issued Decision No. 199/2004 about aggravation of nuclear safety.
Details on event are accessible in the Incident Reporting System of the IAEA.

Seq. No	Country	Article	Ref. in National Report
33	Netherlands	Article 20	E.2.1.1

Question/ Comment Could the Slovak Republic provide data on performed inspections (statistics, typical or specific topics, major findings, etc.)?

Answer Statistical data on assessment and inspection activities of the UJD are regularly published in the Annual Reports of the UJD in chapters:

- Safety assessment and inspection of NPPs
- Safety assessment and inspection of other NIs

Link: www.ujd.gov.sk

Seq. No	Country	Article	Ref. in National Report
34	Slovenia	Article 20	Section E.2.1.2 p.21

Question/ Comment Are there any kind of financial warranties provided by the applicant before a licence is granted (as to demonstrate sufficient financial resources in case of bankruptcy or liquidation of the operator or in case it fails to implement the prescribed radiation protection measures)?

Answer In the Atomic Act, there is not explicitly laid down the exact sum to be demonstrated. Anyway, pursuant to § 7 as one of the conditions for granting permission or authorization to applicant is to provide evidence of adequate technical and human resources with requested professional competency.

Pursuant to § 6 (2), attached to the application shall be for example
- if the activities subject to authorisation are expected to generate radioactive waste, a document supporting that the management of radioactive waste is ensured, including the respective financial provision,
- for legal person as an applicant, a document evidencing ownership and organisational structure of the applicant for permission or authorisation,
- documents evidencing the numbers of the permanent staff including staff professional competency.

Pursuant to § 10 (1) (n), the authorization holder is liable to inform the UJD without any delay of

the declaration of insolvency or rejection of insolvency proceedings because of lack of assets.

Pursuant to § 10 (5), the authorisation holder is liable to notify the UJD in writing of any changes in facts on the basis of which permission or authorisation was issued and of any facts which might result in modification or cancellation of the permission or authorisation. Such notification shall be made within 15 days of the occurrence of such change.

Seq. No	Country	Article	Ref. in National Report
35	Sweden	Article 20	E.1.2.2, p.18

Question/ Comment: It is noted in the report that the Act No. 541/2004 Coll. has replaced Act No. 130/1998 Coll. on peaceful use of nuclear energy except for Arts. 3 (9) and (10) that are coming into force 1 January 2007
What are the main differences compared to the previous Act and what objectives are achieved by replacing the old Act?

Answer: In connection with the accession of the Slovak Republic to the EU in May 1,2004 and with the successful preparation for it, the necessity to amend the previous Atomic Act No. 130/1998 Coll. LL has occurred. After discussions, the decision was made to prepare a completely new law that would include all necessary changes with regard to the experience with existing law and regulations as well as the praxis in Slovakia.

The new Act has maintained the original philosophy, structure and content of the Atomic Act, according to practice common elsewhere in the world. The Act does not cover the supervisions of adverse effects of ionising radiation.

The most important changes are as follows:

Name of the „Atomic Act“ became an officially introduced term.

Scope of definitions was extended and the existing terms are presented more detailed.

Rearrangement of some provisions was made; competency of the UJD was defined precisely and presented in the front section of the Act.

The UJD refrained from regulation and licensing of the suppliers. Those licenses were replaced by permissions for particular activities and UJD examines those on safety concerns only. This fact oriented the supervisory activities on the operators of the nuclear installations and their quality assurance systems.

Important competency transfer was made, where UJD became a specialised construction authority, excluding the special planning and expropriation proceedings. Licensing activities for the respective stage of service life of a nuclear installation have been prepared at a more rigorous level.

Changes in the area of safeguards, duties of operators to report to the European Commission, record keeping and inspection of nuclear materials, shipment of radioactive waste from and to the European Union, procurement of and permission for import and export of particular dual-use goods.

Changes in the position of the inspectors of the UJD were set by more rigorous definition of their position, more detailed arrangement of the inspector examination, appointment, its links with the Civil Service Act, etc.

Changes in other acts such as in the Criminal Code, the Construction Code, Act on Administrative Fees, Act 26/2002 Coll. on Exports and Imports of Special Materials and Equipment subject to the International Control Regimes, Air Act, Act 95/2000 Coll. on Labour Inspection were made.

Seq. No	Country	Article	Ref. in National Report
36	Sweden	Article 20	E.2.1, p.19

Question/ Comment: Please clarify the relation between licensing for siting, construction and commissioning. E.g. does the licensing for siting include preliminary assessments for construction as well as commissioning and operation of the facility?

Answer: Relationship between the different types of permissions and authorizations reflect the different stages of nuclear installation existence (lifetime stages). For each of these stages, particular license is required. Therefore, one license precedes application for the next one.

Upon the Atomic Act basis (see: www.ujd.gov.sk) as well as the Construction Code, the application for issuance of the particular license have to be attached with the specific documentation. Such documentation has to be elaborated for each stage separately, but in consideration to and by specifying the previous documentation.
Thus when applying for permission for siting, an application has to be attached with e.g.

- the safety report of reference,
- report of reference on the decommissioning method,
- project intention for physical and technical solution of nuclear installation – design development project level,
- report of reference on the method of management of radioactive waste and spent nuclear fuel,
- requirements on the quality of the nuclear installation,
- environmental impact assessment of the nuclear installation as well as potential impact assessment of the environment on the nuclear installation etc.

When applying for the authorization for the building permission an application should be attached with e.g.

- preliminary safety report providing evidence for the meeting of the legal requirements on nuclear safety based on the data considered in the project,
- project documentation needed for building permission proceedings ,
- preliminary plan of management of radioactive waste, spent fuel, including their transport,
- preliminary decommissioning plan concept,
- quality system documentation and requirements on the quality of the nuclear installation and their evaluation,
- preliminary limits and conditions of safe operation, etc.

When applying for authorisation for the commissioning of nuclear installation and operation, the application should be attached with the

- limits and conditions of safe operation,
- list of classified equipment as classified into safety classes,
- testing programmes of classified equipment,
- nuclear installation commissioning programme, split up into stages,
- operational control programme of classified equipment,
- quality system documentation and requirements on the quality of the nuclear installation, and their evaluation, etc.

Thus the UJD, in the licensing procedure in certain lifetime stage, takes into considerations and preliminary assesses also the future lifetime stages at the levels important for that particular stage. So the preliminary construction assessment, operation and decommissioning in the siting licensing procedure will be assessed more generally and less rigorous and detailed than in the case of licensing construction stage.

Seq. No	Country	Article	Ref. in National Report
37	Sweden	Article 20	E.2.1.2, p.19

Question/ Comment: The report notes that the inspection plan, as a rule, is developed for the period of one year. How is long term/strategic planning considered?

Answer: There is a long term strategy for relevant safety systems which aims to perform inspection of all redundancies and subsystems of safety systems. The goal of this long term strategy is to do a complete inspection of safety systems within 5 years.

Seq. No	Country	Article	Ref. in National Report
38	Sweden	Article 20	E.2.2.2, p.21

Question/ Comment: Could Slovakia please elaborate on the relationship between the nuclear regulatory authority (ÙJD) and the Public Health authority (ÙVZ), i.e. joint inspections, review of license applications, etc.

Answer: Division of powers between UJD and ÚVZ is established in the Act No. 541/2004 Coll. LL. (for UJD) and in the Act No. 272/1994 Coll. LL. on Public Health Care Services as amended (this is going to be replaced by the newly published Act No. 126/2006 on Public Health Care Services that will enter into force on June 1, 2006).

Besides the law and regulations, there exists also inter-departmental agreement on co-operation between the UJD and ÚVZ of the 23 June 2003, concluded by UJD and Ministry of Health (that supervises the Public Health Authority).

The basic principle of co-operation and joint inspections between the UJD and UVZ is to avoid “dual inspections” (obtaining the operator with the same things twice) as well as exchange the information and findings that might be of other authority interest or relevance for inspection. For example, in 2005, three special joint inspections were performed. These inspections were focused on fulfilment of requirements for nuclear and radiation safety according reconstruction of vitrification facility, commissioning of discontinual bituminisation facility and management of contaminated soils. This system of joint inspections was developed due to lack of clear definitions of powers, problems with the existence of dual competency as well as experience during the last period.

Seq. No	Country	Article	Ref. in National Report
39	Sweden	Article 21	F.2.1, p.28

Question/ Comment: The report notes that nuclear safety and radiation protection is overriding and takes precedence over the other interests of the company.
How is this principle proven?

Answer: The given requirement for the paramountcy of nuclear safety and radiation protection is incorporated in the organisation process documentation. (see sections F.1.2 and F.3.2)

Seq. No	Country	Article	Ref. in National Report
40	Austria	Article 22	Section F

Question/ Comment: What are the financial arrangements pertaining to the management of institutional waste?

Answer: Processing, conditioning and disposal of institutional radioactive wastes financially arranged for by

the originator of such wastes(polutter pays principle).

Seq. No	Country	Article	Ref. in National Report
41	Austria	Article 22	Section F

Question/ Comment: What is the ownership status of SE-VYZ following the recent takeover of SE by ENEL? What implications, if any, will the takeover have on financing of the decommissioning projects performed by SE-VYZ?

Answer: The ownership of SE-VYZ together with NPP V-1 is transfered to the 100% state owned company GovCo Inc. by April 2006. The system financing of decommissioning projects will remain the same (in connection with the ownership transfer), however the new conditions for finacing of decommissioning projects in Slovakia is defined by a new Act on the nuclear account, approved by the Slovak parliament on March 16th 2006.

Seq. No	Country	Article	Ref. in National Report
42	Hungary	Article 22	F.2.2, p. 31

Question/ Comment: What is the amount of annual contributions to the State Fund and how is it determined?

Answer: Upon the Annual Report of the State Fund, the annual contributions are approximately SKK 2,6 bilion (EURO 65 million) as contribution of nuclear installation operator, plus SKK 0,5 bilion (EURO 12,5 million) as bank interests, plus penalties if imposed by UJD.

Pursuant to § 3 of Act No. 254/1994 Coll. LL. on the State Fund for Decommissioning of Nuclear Energetic Installations and Management of Spent Fuel and Radioactive Waste the contributions are made by:

a) contributions of the nuclear installation operators,
b) fines imposed by the UJD,
c) bank interests,
d) allocations from the national budget,
e) other sources if the specific regulation establishes.

Pursuant to § 3 (2), operator of nuclear installation is liable to pay annual contributions of 350.000 SKK (EURO 8750,-) for 1 MW of installed capacity of the nuclear installation plus 6,8 % from the sales prize of the electricity annually generated in the nuclear installation.

The regulation No. 14/1995 Coll. LL. contains details of creation and provisions of the use of the resources of the State Fund.

Note: In nowadays, new draft act on the National Nuclear Fund, subject to legislative procedure, was adopted in the National Council on March 16 2006. At the time, it has not been published yet because of being submitted to the President for a signature.

Seq. No	Country	Article	Ref. in National Report
43	Netherlands	Article 22	Section F

Question/ Comment: How are adequate financial resources ensured for radioactive waste disposal (including institutional control)?

Answer: Under Art. 21 of Act No. 541/2004 Coll. on peaceful uses of nuclear energy (Atomic Act), “The radioactive waste management costs including the cost of institutional control following the closure of the repository were covered by the radioactive waste originator”(polutter pays principle).
The above funds are accumulated in the State Decommissioning Fund and allocated in accordance

with the Act No. 254/1994 Coll. on the State Fund for Decommissioning Nuclear Installations and Spent Fuel Management (currently an amendment thereto under way).
The ownership of SE-VYZ together with NPP V-1 is transfered to the 100% state owned company GovCo Inc. by April 2006. The system financing of decommissioning projects will remain the same (in connection with the ownership transfer), however the new conditions for finacing of decommissioning projects in Slovakia is defined by a new Act on the nuclear account, approved by the Slovak parliament on March 16th 2006.

Seq. No	Country	Article	Ref. in National Report
44	Netherlands	Article 22	Section F 2.2

Question/ Comment: The initial financial resources and the annual contributions determine the growth rate of the decommissioning fund and hence the starting point of the dismantling operations of a nuclear facility. Thsi is dependent on the chosen decommissioning strategy. Which strategy - direct dismantling or deferred dismantling - has Slovakia adopted?

Answer: An uniform strategy for decommissioning nuclear power plants has not been adopted to date. The development of such strategy to be adopted by the Slovak Government by the end of 2007. All the documents drawn up to date for decommissioning of nuclear power plants are prepared in three recommended options:
- closure with supervision,
- protective storage of the reactor,
- immediate decommissioning.

All the options end up with exempting a nuclear installation from the Act on peaceful uses of nuclear energy.

Seq. No	Country	Article	Ref. in National Report
45	Sweden	Article 22	F.2.1, p.30

Question/ Comment: It is noted in the report that the license holder shall be obliged to provide for sufficient financial resources and human resources for nuclear safety including necessary engineering and technical support activity in all areas relating to nuclear safety.
How is this proved by the licensee and verified by the regulatory authorities?

Answer:

UJD (in accordance with the Atomic Act 541/2004) verifies:

- special professional competency of authorisation holder employees and issue, withdraw and revoke from them license of special professional competency,
- professional competency of employees of authorisation holder for providing professional training to authorisation holder employees, who provide professional theoretical education and simulator training for licensed employees, and issue, withdraw and revoke from them license of professional competency

UJD (in accordance with the Atomic Act 541/2004) approve:

- preliminary limits and conditions of safe operation and limits and conditions of safe operation (the number of shift personal with principal impact on nuclear safety is part of OL&C)
- system of the professional training of authorisation holder employees

UJD (in accordance with the Atomic Act 541/2004) assesses:

- safety analysis reports (SARs) which contain chapter 13 Organisation of authorisation holders (organisation of authorisation holders structure and responsibilities of departments, division etc.)

Financial resources of authorisation holder are not a matter of the UJD.

Seq. No	Country	Article	Ref. in National Report
46	Sweden	Article 23	F.3.3, p.32

Question/ Comment: The report notes that the long-term strategic goal of SE, a.s. is to generate as much electricity as the company is capable to sell with reasonable profit so as remain a competitive and thriving company. How are possible conflicting interests between profitability and safety governed? What is the responsibility of the regulatory authorities in this respect?

Answer: Main mission of SE, a.s., (as mission of each utility operating power plants), is the production of electricity or heat, by highest possible effective utilization and operation of power sources. Naturally precautions must be taken that production goals cannot compromise nuclear safety or safety in general. Such measures/ tools are described in the national report - sections F.1.2 Nuclear safety and radiation protection policy, F.3.2 SE, a.s. policies / concepts. "SE, a.s. Safety policy" was approved by board of directors in June 2004, new "Nuclear safety and radiation protection policy", replacing the one from 1997, was approved by board of directors in June 2005 in accordance with the requirements of SE, a.s. Safety Policy. NS&RP Policy determines basic objectives, principles, requirements, measures and responsibilities in the field of nuclear safety and radiation protection. Nuclear safety and radiation protection as its inseparable part is considered the highest priority and is superior over the other interests of the Company. Policy is disseminated / reflected in the relevant QA documentation – both managerial and working. Priority to safety is also strengthened by other means, such as implementation of safety culture principles (Annual action plans on SC are approved, implemented and evaluated at each NPP) by special training lectures in the frame of basic and periodic training programs, etc.
§ 23, art. 1) of the Atomic act reads the following "The authorized holder shall pay attention to the safety issues prior over any other aspects of the authorized activity". Obviously the role of regulatory authority is supervision of the fulfilment of this obligation.

Seq. No	Country	Article	Ref. in National Report
47	Belgium	Article 24	F.4.3, page 38

Question/ Comment: Radioactive discharges from SE-EMO (and SE-EBO): tritium discharges are close to the authorised discharge limits and there seems to be no evolution over the last 5 years. Can these discharges be considered ALARA?

Answer: Tritium is generated as a result of several nuclear reactions in light water reactors. But the dominant contributor (more than 90%) is nuclear reaction of neutron with boron nucleus contained in boric acid (absorber present in primary coolant). Volume of produced tritium depends on neutron flux and such on operation of the reactor. An economic cleaning or removal of tritium from the liquid waste is not possible. Question of applying optimization is not adequate with this respect. The only possibility is a controlled release of liquid waste, containing also tritium, to the environment, of course by meeting authorized discharge limits approved by Public Health Authority.
Certain decrease of tritium generation is expected in the near future due to a change of core design at Bohunice unit 3 & 4 and at Mochovce units. New fuel, containing burnable poison gadolinium, will be loaded this year. Following this, boric acid concentrations will be lower and such the amount of tritium generated will be moderated.

Seq. No	Country	Article	Ref. in National Report
48	Bulgaria	Article 24	

Question/ Comment: Are dose constrains established for the members of the public in the case that an accidents caused by natural events happens in a waste disposal facility as it was done for human intrusion?

Answer: The specific dose constraints for the accidents caused by natural events in the waste disposal facility have not been established. However the dose constraint of 10 microSv/y for post closure period

covers some natural caused accidents (flood).

Seq. No	Country	Article	Ref. in National Report
49	Hungary	Article 24	F.4.3, p. 35

Question/ Comment: According to the Report the limits for radioactive discharges “are set out in the annex hereto”, but this annex is not included in the Report

Answer: We apologize for this drawback.
Limits of atmospheric and liquid discharges authorized for both sites are provided in following table.

Annual discharge limits

	Ventilation flue				Liquid discharges	
	Noble gases (any mixture)	Iodines (gaseous and air-borne phase)	Air-borne particles (aerosols) – mixture of long-lived radionuclides	Sr 89, 90	Tritium	Corrosion and fission products
	[Bq/yr]	[Bq/yr]	[Bq/yr]	[Bq/yr]	[Bq/yr]	[Bq/yr]
Bohunice (EBO,VYZ)	$4 . 10^{15}$	$1.3 . 10^{11}$	$1.6 . 10^{11}$	$3 . 10^{8}$	$4.37 . 10^{13}$ River Váh	$3.8 . 10^{10}$ River Váh
Bohunice (EBO,VYZ)					$4.37 . 10^{11}$ River Dudváh	$3.8 . 10^{8}$ River Dudváh
Mochovce (1, 2)	$4.1 . 10^{15}$	$6.7 . 10^{10}$	$1.7 . 10^{11}$	no limit	$1.2 . 10^{13}$	$1.1 . 10^{9}$

Annual discharge limits | Activity content [Bq/m^3]

	Noble gases (any mixture)	Iodines (gaseous and air-borne phase)	Air-borne particles (aerosols) – mixture of long-lived radionuclides	Sr 89, 90	Tritium	Corrosion and fission products
	[Bq/day]	[Bq/day]	[Bq/day]	[Bq/day]	[Bq/m^3]	[Bq/m^3]
NPP Bohunice (EBO, VYZ)	$5.5 . 10^{13}$	$1.8 . 10^{9}$	$2.2 . 10^{9}$	no limit	$1.95 . 10^{8}$	$3.7 . 10^{4}$
NPP Mochovce (1,2)	$5.5 . 10^{13}$	$9.0 . 10^{8}$	$2.5 . 10^{9}$	no limit	$1.1 . 10^{8}$	$4 . 10^{4}$

Seq. No	Country	Article	Ref. in National Report
50	Hungary	Article 24	F.4.3, p. 37-38

Question/ Comment: What is the reason for the differing discharge limits for the two NPPs?

Answer: Main reason for differences between discharge limits is a different configuration of nuclear installations on both sites SE, a. s. We operate two PWR units (type of reactor VVER-440) at Mochovce site only. At Bohunice there are four PWR units (V1, V2, type of reactor VVER-440), but also one NPP (A1) under decommissioning, interim spent fuel storage and facilities for the treatment of radioactive waste. However, the limit for a member of public, defined by the valid law (Act. NC of SR No. 272/1994 Coll., on the protection of the human health - amended) is the same for each site – 250 microSv/year.

Seq. No	Country	Article	Ref. in National Report
51	Slovenia	Article 24	

Question/ Comment: What is the prescribed dose constraint for the public exposure due to discharges from nuclear facilities? Could you provide a comparison between the public exposure and the dose constraint(s)?

Answer: The dose constraint for public exposure is 250 microSv/y. The individual effective doses for the members of the critical groups are below 1microSv/y for both sites (Bohunice and Mochovce) during last years.

Seq. No	Country	Article	Ref. in National Report
52	Czech Republic	Article 25	

Question/ Comment: What is the differnce between internal, on-site and in-site emergency plan?

Answer: It is the same term. In generally the term „on-site emergency plan is used.

Seq. No	Country	Article	Ref. in National Report
53	Czech Republic	Article 25	

Question/ Comment: What organisation is under the abbreviation UVZ? Which regulatory body is it?

Answer: UVZ means „Public Health Authority“

Seq. No	Country	Article	Ref. in National Report
54	Czech Republic	Article 25	

Question/ Comment: What does it mean that „staff are classified by the scope of emergency training.“

Answer: The point is that a wrong expression has been taken over from the National Report (translation). In original text an expression „staff are classified by the scope of emergency preparedness“ was introduced. Employees and persons taken under care of authorisation holder are divided in four categories depending on length of their stay at NPP or their role in the structure of emergency preparedness. Based on § 10 of UJD Regulation No. 55/2006 the authorisation holder has to make all employees and further persons staying on NPP site acquainted with on-site emergency plan at taking-out of work, when changing work assignment and then once per two years. All employees participate in large-scale site exercises, which are organized by the emergency response organization once per year at least. Elements of emergency response organization take part in professional training, drills or exercises twice a year at least. It is the duty of the authorization holder to organize exercise of whole emergency response organization once per year at least and an exercise involving state authorities once per three years.

Seq. No	Country	Article	Ref. in National Report
55	Hungary	Article 25	F.5.7.1, p. 44

Question/ Comment: A section F.5.3 is referenced, but there is no such section in the Report.
What scenarios are considered relevant in emergency preparedness related to waste management and decommissioning?

Answer: Authorization holders prepare their exercise scenarios themselves based on possible initiating events, which are published in the on-site emergency plan. They have to observe requirements for exercise set down by the Regulation No55/2006 and further legal regulations.

Seq. No	Country	Article	Ref. in National Report
56	Lithuania	Article 25	

Question/ Comment: Are there any requirements on frequency of UJD and other involved authorities (regional, district etc.) participating in co-ordination exercises?

Answer: There are duties to exercise and frequency of exercises are subject to the Regulation No. 55/2006

Seq. No	Country	Article	Ref. in National Report
57	Netherlands	Article 25	Section F.5

Question/ Comment: Regarding Emergency Planning, Article 25 of the Joint Convention covers the need for on and off-site emergency plans and the need to test the plans at an appropriate frequency. Your response to Article 25 describes the operational structure for the off-site response to emergencies. How often are the on-site and off-site emergency plans in the Slovk Republic tested?

Answer: Authorization holders have to assure professional training, drills or exercises twice per year at least for their elements of emergency response organization and to organize exercise of the whole emergency response organization once per year at least and an exercise involving state authorities once per three years.

Seq. No	Country	Article	Ref. in National Report
58	Sweden	Article 25	F.5.4, p.73

Question/ Comment: Do the “Public Protection Plans” include strategies on how to inform both the public and the media in an adequate and coherent way in case of an emergency?

Answer: In compliance with Annex 2 to the UJD Regulation No. 55/2006 the authorization holder has to inform public on ionising radiation and its impact on human health as well as on impact to the environment, on possible events at NPPs, on their classification according to their importance, on principles of off-site emergency plans and on activities, which should be performed by the public in case of given event. Also the state authorities and authorization holders have, in compliance with annex to the UJD Regulation No. 55/2006, to inform public in case of an incident or accident at NPP about this incident or accident, on the Regulation of their significance, on their anticipated development, on measures taken in the period of threat and on urgent and consequent countermeasures to protect public during early, intermediate and late phases.

Seq. No	Country	Article	Ref. in National Report
59	Austria	Article 26	Section F

Question/ Comment: Given, the fixed shut-down date, what is the current status of the plans for the shutdown and decommissioning of NPP V1, which have been agreed in the accession negotiations to the EU?

Answer: *Slovak Republic commitment to shut down Units 1 & 2 of Bohunice V1 NPP in 2006 and 2008 respectively undertook through Resolution No. 801/99 of the Slovak Government.*

Slovenské elektrárne, plc. (SE, a.s.) are implementing the pre-decommissioning support projects for early shutdown of Bohunice V1 Nuclear Power Plant (V1 NPP) financed from the Bohunice

International Decommissioning Support Fund (BIDSF) administered by the European Bank for Reconstruction and Development (EBRD). To undertake this work, a Project Management Unit (PMU) has been established by SE a.s. as part of SE's V1 NPP Shutdown Project Department and a contract with a Consultant Consortium (IEES) has been placed by SE a.s. for consultancy services to the Project Management Unit.
"Project" means the operation of the PMU within which the PMU Consultant is performing the consultancy services for the provision of management support to the Client (SE, a.s.), which comprises overall management and management of the work associated with the BIDSF funded or co-funded projects.
The PMU Consultant Personnel, including the Client Personnel, makes up the PMU responsible for planning management, project management, conceptual engineering, procurement, and implementation of 3 groups of projects (projects related to the final shutdown of V1 NPP, development of decommissioning documentation, and projects related to waste management and storage).

The fundamental objectives of the PMU are to implement and execute the pre-decommissioning support projects financed or co-financed by the BIDSF and:
Development of the necessary conceptual engineering services for the pre-decommissioning support projects
Preparation of requirements for the procurement of detailed engineering and supply packages
Engineering management and co-ordination of the projects
Interrelations and the provision of management support to SE a.s. during the implementation of the Project
Sharing knowledge of modern project management and engineering methods, including training of SE a.s. personnel

The BIDSF pre-decommissioning support projects can be divided into three groups according to the areas and priorities addressed:
Projects related to final shutdown of Bohunice V1 NPP
These projects address the specific need to ensure safe operation of Units 1 & 2 of V1 NPP until shutdown, and continuing operation of V2 and SE-VYZ facilities during the pre-decommissioning period from 2003 to 2011.
Projects related to the development of decommissioning documentation
The projects consist of the procurement of engineering services for the preparation of engineering and licensing documentation related to the decommissioning process of V1 NPP in accordance with Slovak legislation.
Projects related to waste management and storage
The projects address the supply of additional waste management technologies as may be required to treat, condition, provide additional buffer storage and/or disposal capacity for historical and/or decommissioning waste streams.

The PMU is responsible for the following functions within the implementation of the projects:
Project Management, including overall and individual management of the pre-decommissioning projects (scheduling, cost control, risk and interface management, contract implementation, reporting, and quality assurance)
Conceptual Engineering, drafting of Technical Specification and Engineering Management
Contract Procurement and Contract Management
Safety and Licensing, and Environmental Due Diligence

Detailed engineering, supply, installation, construction and other activities will be undertaken by the contractors to be selected by the PMU.

According to international experience, during dismantling of a V1 NPP there are lots of material with activity levels below the clearance levels and therefore they could be cleared on the basis of an official decision by the authorities and be managed as conventional material.
Taking into account the problems associated with the management of radioactive wastes, one of the main objectives in the dismantling of a nuclear power plant is the release from the regulatory control of the largest possible number of materials.
Current clearance capacity of the Bohunice site corresponds to current waste amount. The content of radionuclides with an allowable release of radioactive substances to the environment has been determined in accordance with **Regulation No. 12/2001 Coll**. on Requirements for the Provision of Radiation Safety, Ministry of Health SR (2001).
The objective of new BIDSF project ***"Free Release of Decommissioning Materials"*** is to provide a licensed large capacity technology and facility for measurements of very low activity for the purpose of release of dismantled equipment and other materials from regulatory control.
The project has been divided in two phases with the following main scope:

Phase 1 (2006 - 2008):

Development of conditional release criteria for soils, concrete, metallic and non-metallic materials.

Development and implementation of a measurement methodology and definition of a sampling program, methodology for activity assignment and calculation of (directly) non measurable isotopes, isotopic vectors, scale factors, etc.

Licensing process of Phase 1

Phase 2 (2008 - 2010):

Supply, commissioning and start-up of characterisation equipment and ancillary facilities

Development of the free release procedures

Licensing process of Phase 2

The current Slovak Policy for free release and remediation of materials and soils was issued in 2000 (Act No. 272/1994 Coll. on Public Health Protection 272/1994, amended in 2000, 2002 and 2004). The basic free release principle was based on an individual effective dose limit of 10 μSv/y and a collective effective dose limit of 1 manSv/y. It allows the release of material with higher contamination than the derived activity limits (clearance levels) if the use of said material results in a lower dose than the dose limit with permission of the Authorities.
New supporting Slovak clearance levels were issued in 2001 in accordance with IAEA guidelines (TECDOC 855 and Safety Series 89) on exemption/free release principles based on individual nuclide mass or surface activities.
Nevertheless, in the development of a free release process, conditional release criteria have to be established for a specific site and taking into account the nature of the decommissioning materials. In addition to Slovak regulations, international recommendations on the application of the clearance levels will have to be taken into account in the development of these criteria.

Seq. No	Country	Article	Ref. in National Report
60	Sweden	Article 26	Section A, p.9

Question/ Comment: According to the report, the nuclear power plant A1 was shut down in 1977 and is at the moment in the first stage of decommissioning. Almost 30 years has passed between shut down and start of decommissioning – how has the technical systems etc. been maintained during this period? Has any difficulties in the initial decommissioning been identified to be related to this long period of "non-activity"?

Answer: The power plant A-1 was decommissioned in 1977. By 1979 activities on the plant were directed to renewal of its operation. Following the decision on permanent shutdown of the plant, the plant

decommissioning preparation activity was carried out from 1980, i.e. a complex RAW management system had been developed, RAW from the operation were processed, spent fuel transfer outside of the plant was carried out. As the plant was after an accident, necessary measures were taken to prevent its environmental impacts. In addition activities typical for the decommissioning process, i.e. decontamination and dismantling of technologic systems were carried out. For example dismantling of low-contaminated equipment (secondary part of the engine room and intermediate engine room). Dismantling of equipment showed a higher degree of contamination, however this activity was carried out with a view to clearing operating premises to install RAW processing technologies.

Seq. No	Country	Article	Ref. in National Report
61	Sweden	Article 26	Section B, p.10

Question/ Comment: According to the report, the Slovak government has assigned to submit a "Policy of decommissioning of nuclear facilities and management of spent fuel evaluated according to the act on environmental impact assessment" for a discussion on government level by 31st December 2007. Perhaps there could already here be a presentation of main thoughts and outline of the policy?

Answer: As yet there are currently no such results as could be used for presentation. A draft strategy is to be developed by 11/2006.

Seq. No	Country	Article	Ref. in National Report
62	United States of America	Article 26	

Question/ Comment: The Slovak national report addresses the provisions of Article 26 by referring the reader to the 1st National Report reviewed in November 2003, even for those questions based on apparent omissions in that report. Issues were raised at the Country Group 1 session regarding the Slovak report. These included a comment that the decommissioning plan should provide for ensuring an adequate number of qualified staff. Furthermore, a series of questions were asked regarding controls needed following decommissioning when the site was not suitable for unrestricted release. A request was made for a summary of the results of decommissioning NPP A1 Bohunice. Most of the areas questioned regarding decommissioning in the Slovak republic have not been addressed in this report. Please include this information in the third report and address this comment in your national presentation.

Answer: The power plant A-1 was decommissioned in 1977. By 1979 activities on the plant were directed to renewal of its operation. Following the decision on permanent shutdown of the plant, the plant decommissioning preparation activity was carried out from 1980, i.e. a complex RAW management system had been developed, RAW from the operation were processed, spent fuel transfer outside of the plant was carried out. As the plant was after an accident, necessary measures were taken to prevent its environmental impacts. In addition activities typical for the decommissioning process, i.e. decontamination and dismantling of technologic systems were carried out. For example dismantling of low-contaminated equipment (secondary part of the engine room and intermediate engine room). Dismantling of equipment showed a higher degree of contamination, however this activity was carried out with a view to clearing operating premises to install RAW processing technologies.

Seq. No	Country	Article	Ref. in National Report
63	Sweden	Article 27	Section I, p.60

Question/ Comment: How is EU Directive 92/3/Euratom implemented in the regulation concerning transboundary movements (as described in art. 27 JC) in the Republic?

Answer: The Directive 92/3/Euratom is directly (full text) incorporated in § 16 of the Atomic Act (translation available on www.ujd.gov.sk)

Seq. No	Country	Article	Ref. in National Report
64	Sweden	Article 27	Section I, p.60

Question/ Comment: Could you please clarify how Act No 541/2004 Coll. regulates transboundary movements (as described in art. 27 JC)

Answer: The Act No 541/2004 Coll. describes requirements for the transport of radioactive materials in § 15 Transport of Radioactive Materials (including spent fuel). § 16 describes transport of radioactive waste between Member States and from and to the Community implementing Directive 92/3/Euratom. Annex 2 describes documentation necessary for the application for transport license. Details on transport of radioactive materials (including spent fuel) are described in Regulation No 57/2006 Coll. on details concerning the requirements on transport of radioactive materials.
For example if a natural person or a legal person is going to realize a transport of spent fuel from Slovakia abroad, it is obliged to fulfill all requirements listed in Act No 541/2004 Coll. and in Regulation No 57/2006 Coll. The same requirements are compulsory for the transport of spent fuel from abroad.

Article No. 16 (from procedural and organisational point of view) together with article No. 15 (from technical point of view – IAEA TS-R-1) are basis for governing transboundary movement (www.ujd.gov.sk).

Seq. No	Country	Article	Ref. in National Report
65	Ukraine	Article 27	

Question/ Comment: Section I.1.2, page 58
Are there any emergency preparedness requirements or emergency preparedness regulatory references contained in the licence for transboundary transport?

Answer: UJD Regulation No. 57/2006, by which details on requirements during the shipment of radioactive materials are set down, stipulates in frame of documentation for shipment the emergency transport order. Belongings of emergency transport order are defined by §§ 19 to 21 of UJD Regulation No. 55/2006 on details concerning emergency planning in case of incident or accident.

Seq. No	Country	Article	Ref. in National Report
66	Sweden	Article 28	Section J, p.61

Question/ Comment: How is the Council Directive on High Activity Sealed Sources (2003/122/Euratom) implemented in the legislative and regulatory system? It would be of particular interest to be informed how art. 3 para 2 (b) has been implemented (financial security or any other equivalent means) and to what extent implementation of the requirements in art 9 para 3 and 4 has been made (systems aimed at detecting orphan sources and campaigns to recover orphan sources left behind from past activities)?

Answer: The implementation of the directive on high activity sealed sources is in the approval process at present.

Implementation of art.3 para2: The duty for the licensee (user of HASS) to deposit money into a special “Nuclear account” before commissioning of the facility with high activity sealed source has been established in the regulation. The amount of the money should cover expenses for management and disposal of the source. The sum of money will be specified by the national agency for disposal of radioactive waste, it will depend on source characteristics. The money will be reimbursed in the case that the licensee will transfer the disused source to the supplier or other holder.

Implementation of art. 9 para3: The state has established the detection system on important border crossings already. The operators of important scrap recycling facilities have installed detection systems as well. The duty to install detection system for operators of large metal scrap yards and recycling installations has been established by the governmental decision.

Full implementation of art. 9 Para 4 needs the amendment of the act. No 272/1997 Coll. on public health. But the recovering campaign of orphan sources should be performed by extended supervision program by the regulatory body focused on unused and orphan sources.

Seq. No	Country	Article	Ref. in National Report
67	United States of America	Article 28	61

Question/ Comment: Responses to comments on the First Joint Convention National Report concerning storage are not evident in the Second Report. What criteria are applied for limiting interim storage pending conditioning and/or disposition as waste?

Answer: Activities for this area are realized in the sense of QMS and connected with Operational instructions (OI).
Activity is described in OI No. PP U-45 Plan of radioactive waste disposal in ISFS, witch was prepared in accordance with Act No. 541/2004 – Atomic Law.

Seq. No	Country	Article	Ref. in National Report
68	Bulgaria	Article 29	

Question/ Comment: Does Regulation No. 626/2004 of the Slovak Government determine the organization that shall make the five-yearly re-evaluation of the annual payments to the State Fund for Decommissioning of Nuclear Installations and Management of Spent Fuel and Radioactive Waste? If not, who makes that re-evaluation?

Answer: A proposal for re-evaluation of the annual payments to the State Fund for Decommissioning of Nuclear Installations and Management of Spent Fuel and Radioactive Wastes is being prepared by the Slovak Ministry of Economy which submits them for approval to Parliament.

Seq. No	Country	Article	Ref. in National Report
69	Bulgaria	Article 32	

Question/ Comment: What measurements are applied in practice to categorise radioactive waste? Is categorisation applied that is based on directly measurable parameters like gamma dose-rate, total activity or activity of specific radionuclides?

Answer: The classification of radioactive waste is set up in the regulation of UJD No. 50/2006. The principal waste classes include transient waste, low and intermediate level waste (which are subdivided into short lived and long lived waste) and high-level waste. The classification is in accordance with the recommendation of IAEA and the Commission and reflects also the disposal scheme in Slovakia. This classification is based on the radioactive waste activity level.
In practice the generated radioactive waste is segregated according to the physical, chemical and radiological properties and according to the scheme of its further treatment and conditioning. This segregation is performed preferably at the place of radwaste generation The measurements necessary from the point of view of radwaste characterization are performed either in the place of radwaste generation or as first step on the entry of radwaste to the treatment and conditioning center. The measurements of radionuclides activity linked with acceptance criteria for disposal in liquid radwaste are relatively easy to perform, the radionuclides activity measurement for solid radwaste are performed on the basis of Co-60 and Cs-137 activity measurements in the model sample (metal drum) with the usage of correlation coefficients.

Seq. No	Country	Article	Ref. in National Report
70	Bulgaria	Article 32	

Question/ Comment: What measurements are applied in practice for clearance of material from regulatory control? Is clearance practiced based on directly measurable parameters like gamma dose-rate, total activity or

activity of specific (measurable) radionuclides? Are the clearance procedures subject of regulatory approval?

Answer The clearance of radioactive material is subject of regulatory approval. The clearance is based on gamma-radionuclide specific measurements of measurable radionuclides in cleared material. However representative samples from any batch (freight) should be analyzed more detailed, including beta and alpha radionuclides before final measurements. Activities of all important radionuclides (including alpha, beta and week gamma) are calculated on the base of results of detailed analyses and measurements of representative gamma-radionuclides.

Seq. No	Country	Article	Ref. in National Report
71	Bulgaria	Article 32	

Question/ Comment What methods are applied for radionuclide characterization of spent ion-exchange resins and sorbents? Do you apply characterization methods based on directly measurable parameters?

Answer Ion exchange resins (prevailingly from primary clean up system)are regularly sampled during outages and activity is measured by gammaspectrometry. Limited number of samples were analysed also for dificult-to-measure radionuclides required to be declared for radwaste to be disposed of. These data are analysed together with other radwaste radionuclide vectors in order to determine correlation coeficients with key (reference) radionuclides.

In addition, two storage tanks with intermediate and low activity resins (sorbents) have been sampled in 2005 within EU funded project of V-1 plant decommissioning support.
Due to heterogenity of tank contents and impossibility of satisfactory homogenisation about 50 samples have been withdrawn from diffrerent positions using specialised sampling device and analysed further in laboratory.

Seq. No	Country	Article	Ref. in National Report
72	Bulgaria	Article 32	

Question/ Comment What methods are applied for conditioning of ion-exchange resins? What are the specific criteria applied to the conditioning product?

Answer SE, a. s. intends to bituminize desaturated ion exchanges, controlling prior to their fixation for their physical and chemical composition, mechanical state, specific activity and radionuclide composition for fixed product we control: product filling, we achieve 40 %
product water content
leachibility
thermal stability
fixed activity
sedimentation of ion exchanges

Seq. No	Country	Article	Ref. in National Report
73	Bulgaria	Article 32	

Question/ Comment What is planned, and in which document, about construction of deep geological repository?

Answer The need for development of deep geological repository is resulting from National strategy for radwaste management formulated as a Governmental decision No. 190/1994 where underground disposal is considered to be ultimate step for waste unacceptable for surface facilities. By Governmental decision No. 5/2001 the corresponding time frame for deep geological repository development process is established. Currently the construction of national underground facility within the territory of Slovakia represents one of the options for solution of final radwaste and spent

fuel management step (also export for reprocessing with ultimate disposal abroad and development of regional repository are taken into account).

The deep geological repository development plant was approved under IR at SE, a.s., in 2003.
Phase 1 (1996-1998)

- Co-ordination activity
- Design and implementation activities
- Source member, field of near and remote interactions
- Siting
- Safety analyses

Phase 2 (1998-2001)

- Design and implementation activities
- Siting and remote interactions
- Safety analyses.

Phase 3 (reduction in the number of sites and passage from the level of study sites to survey) 2004-2006 (a delay in the execution of this phase occurred because of SE, a.s., restructuring and privatisation).

- Safety analyses
- Geologic-survey works
- Organization-management activities

Phase 4 (selection of a prefered site out of two) 2007-2012

- Safety analyses
- Geologic-survey works
- Organization-management activities

- Definitive selection of the site (planning decision) 2012-2015
- Setup of an underground laboratory
  at the site of the selected deep geological repository
  and long-term monitoring thereof 2015-2030
  implementation commencement (building permit) 2030
  deep geological repository development completion 2037
- Deep repository commissioning (obtaining a licence) 2047

Seq. No	Country	Article	Ref. in National Report
74	Bulgaria	Article 32	

Question/ Comment: Is the Mochovce facility being used for storage of radioactive waste arising from decommissioning of А-1 and is it envisaged to be used for storage of waste from В-1?

Answer: The Mochovce National Radwaste Repository is a near surface type repository used for disposal of conditioned low- and medium-activity RAW arising from operation and decommissioning of nuclear installations located in the Slovak Republic´s territory, produced in a variety of activities at research institutes, laboratories, hospitals and other institutions - so-called institutional wastes.
Under Art. 21 of Act No. 541/2004 Coll. on peaceful uses of nuclear energy (Atomic Act) “All radioactive waste management activities must be directed to their safe disposal“. According to the adopted philosophy all operation RAW have to be processed as of the date decommissioning (if possible)?.
All operation RAW that comply with the conditions for disposal at the near-surface disposal site are continuously processed at the Bohunice Processing Centre and disposed of at the Mochovce National Radwaste Repository. Those RAW that would fail to comply therewith will be conditioned and stored at the integral storage facility (under construction) until disposal thereof at the deep

geological repository.

Seq. No	Country	Article	Ref. in National Report
75	Bulgaria	Article 32	

Question/ Comment: After a strategy for “differed dismantling” of V-1 was selected, what is the planned location for storage of the activated components (reactor pressure vessel and reactor internals)? Can the Mochovce facility be used for that purpose? If not, do you plan to construct new storage/disposal facility and in what terms?

Answer: *Note: the V1 NPP decommissioning strategy has not been selected. The Conceptual Decommissioning Plan (2002) proposed a deferred dismantling.*

National Repository at Mochovce (surface repository) for LILW is operating.

Radioactive wastes, which will not meet the requirements for storage at Mochovce repository, will be stored in the deep underground repository (DUR). The beginning of the operation of deep underground repository is expected after 2040. In case that the DUR will not be available (e.g. in immediate decommissioning alternative) these RAW will be temporarily stored in an interim buffer RAW storage constructed at Bohunice site. The erection of Interim storage is expected in 2007-2010.

Seq. No	Country	Article	Ref. in National Report
76	France	Article 32	Section D.2.2 Page15

Question/ Comment: Are the facilities for which "a permanent operation license" has been issued submitted to periodic safety review and/or re-assessment?

Answer: The facilities for treatment, conditioning or storage of radioactive waste mentioned in the Section D.2.2 are nuclear facilities. According to the act No. 541/2004 (Atomic act) the UJD may issue the authorization for nuclear facility operation for a maximum period of ten years. Authorization for the operation of a nuclear facility may also be issued repeatedly after periodic safety review.
Under Art. 2 of UJD Regulation No. 49/2006 Coll. on periodic evaluation of nuclear safety “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 licence“, with such evaluation being 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 national radwaste repository was commissioned in 2001, i.e. the first periodic evaluation will be needed to be carried out in 2009.

Seq. No	Country	Article	Ref. in National Report
77	France	Article 32	Section D

Question/ Comment: Could Slovakia provide information on the management practices and regulations applied for collection, conditioning and storing waste generated out of the nuclear industry (medical, research, etc)?

Answer: RAW produced outside of energy production are in the sense of Act No. 541/2005 defined as

IRAW – Institutional RAW (including sealed sources and orphan sources Disposal of IRAW is realized in accordance with internal guideline No. VYZ/3/ZSM – 054 (Disposal of RAW and IRAW) e. g. subsidiary guideline No. VYZ/SM – 054.05 (Disposal of CRAW).
Financing of disposal IRAW is realized on commercial base, where SE-VYZ complete a standard contract with the owner of IRAW for final disposal of IRAW.
Financing of disposal CRAW is realized trough States Found for Disposal of Nuclear facilities.

Seq. No	Country	Article	Ref. in National Report
78	France	Article 32	Section B.2 Page 11

Question/ Comment: What is the expected schedule for siting the deep geological disposal facility ? What are the applicable regulations for this project (or the planned schedule for developing the regulation)?

Answer: At present site selection for deep geological disposal facility is going on. Four perspective areas in two host formations (sediments and crystalline) have been determined for further geological investigation. Process has been partially suspended and to be re-opened in near future. Initial study was in 1996 and there were two stages between 1997-1998 and then between 1999-2001. Decision on selection of the most suitable locality is expected in 2015. No other specific data were established.
Atomic Act regulates siting for nuclear installations including repositories. Respective regulation No. 50/2006 Coll. defining criteria for site selections is applicable also for the project of underground repository.

The deep geological repository development plant was approved at SE, a.s., in 2003.
Phase 1 (1996-1998)

- Co-ordination activity
- Design and implementation activities
- Source member, field of near and remote interactions
- Siting
- Safety analyses

Phase 2 (1998-2001)

- Design and implementation activities
- Siting and remote interactions
- Safety analyses.

Phase 3 (reduction in the number of sites and passage from the level of study sites to survey) 2004-2006 (a delay in the execution of this phase occurred because of SE, a.s., restructuring and privatisation).

- Safety analyses
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- Organization-management activities

Phase 4 (selection of a prefered site out of two) 2007-2012

- Safety analyses
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- Organization-management activities

- Definitive selection of the site (planning decision) 2012-2015
- Setup of an underground laboratory
  at the site of the selected deep geological repository
  and long-term monitoring thereof 2015-2030
  implementation commencement (building permit) 2030
  deep geological repository development completion 2037

Deep repository commissioning (obtaining a licence) 2047

Seq. No	Country	Article	Ref. in National Report
79	France	Article 32	Section B Page 11

Question/ Comment: What are the criteria for waste exemption and clearance?

Answer: The limits for clearance are set by the regulation (e.g. 0,3 Bq/g and 0,3 Bq/cm2 for basic radionuclides like Co-60, Cs-137 etc.). In general the radionuclides are divided into 5 groups whereas for each group different limits are set. The regulation also specifies the amount of material from which the activity measurements are to be taken.

Seq. No	Country	Article	Ref. in National Report
80	France	Article 32	Section B Pages11-12

Question/ Comment: The waste classification of the Republic of Slovakia could include a category of waste called "very low level activity waste", intermediate between low activity and clearance levels, which would require less stringent disposal conditions than disposal in the existing near-surface disposal (ex: landfill)

Answer: Existing waste classification system is based on IAEA and EU recommendations. Radiation protection legislation defines clearance levels. Category of so-called very low-level waste is understood to be a part of low and intermediate level waste (no activity limitation, it means that low level waste is everything over clearance levels including very low level waste). Practically the real activity limit between very low level and low-level waste is given by safety assessment for individual disposal facility. Of course this kind of low (very low) level waste requires not so stringent disposal conditions in terms of barriers, drainage, etc.). There is serious discussion on disposal of very low-level waste in Slovakia according to prepared decommissioning activities while arising of big amount of such waste type is expected.

Seq. No	Country	Article	Ref. in National Report
81	Germany	Article 32	p. 10

Question/ Comment: It is stated that there is a correspondence between Slovenské elektrárne, joint-stock company (SE a.s.) and several organizations in the Russian Federation regarding the reprocessing of spent fuel without returning the resulting products.
What is understood in this connection by the products of reprocessing?
Is it planned to provide legislation which could probably limit the existing options for spent fuel management?
When will a decision concerning a national repository for high-active waste (location / disposal strategy) be reached?

Answer: There was communication with Russian organizations between 2001-2004 about possibilities of export of the spent fuel for reprocessing. Communication ended without commercial proposal because of unfavourable legislation in the Russian Federation. After changes in Russian legislation the discussions were not renewed.
The "Concept of decommissioning of nuclear facility and management of spent fuel" is reevaluated from environmental point of view and should by completed by 31.12.2007. It is assumed that decision about location of deep geological repository will be made after 2015.

Seq. No	Country	Article	Ref. in National Report
82	Germany	Article 32	p. 11

Question/ Can you describe the procedure of clearance and the waste management of the material from the

Comment decommissioning of the Bohunice 1 NPP?

Answer According to international experience, during dismantling of a V1 NPP there are lots of material with activity levels below the clearance levels and therefore they could be cleared on the basis of an official decision by the authorities and be managed as conventional material.
Taking into account the problems associated with the management of radioactive wastes, one of the main objectives in the dismantling of a nuclear power plant is the release from the regulatory control of the largest possible number of materials.
Current clearance capacity of the Bohunice site corresponds to current waste amount. The content of radionuclides with an allowable release of radioactive substances to the environment has been determined in accordance with **Regulation No. 12/2001 Coll**. on Requirements for the Provision of Radiation Safety, Ministry of Health SR (2001).
The objective of new BIDSF project ***"Free Release of Decommissioning Materials"*** is to provide a licensed large capacity technology and facility for measurements of very low activity for the purpose of release of dismantled equipment and other materials from regulatory control.
The project has been divided in two phases with the following main scope:

Phase 1 (2006 - 2008):

Development of conditional release criteria for soils, concrete, metallic and non-metallic materials.

Development and implementation of a measurement methodology and definition of a sampling program, methodology for activity assignment and calculation of (directly) non measurable isotopes, isotopic vectors, scale factors, etc.

Licensing process of Phase 1

Phase 2 (2008 - 2010):

Supply, commissioning and start-up of characterisation equipment and ancillary facilities

Development of the free release procedures

Licensing process of Phase 2

The current Slovak Policy for free release and remediation of materials and soils was issued in 2000 (Act No. 272/1994 Coll. on Public Health Protection 272/1994, amended in 2000, 2002 and 2004). The basic free release principle was based on an individual effective dose limit of 10 μSv/y and a collective effective dose limit of 1 manSv/y. It allows the release of material with higher contamination than the derived activity limits (clearance levels) if the use of said material results in a lower dose than the dose limit with permission of the Authorities.
New supporting Slovak clearance levels were issued in 2001 in accordance with IAEA guidelines (TECDOC 855 and Safety Series 89) on exemption/free release principles based on individual nuclide mass or surface activities.
Nevertheless, in the development of a free release process, conditional release criteria have to be established for a specific site and taking into account the nature of the decommissioning materials. In addition to Slovak regulations, international recommendations on the application of the clearance levels will have to be taken into account in the development of these criteria.

Seq. No	Country	Article	Ref. in National Report
83	Hungary	Article 32	Annex IV.3.2 p.67

Question/ Comment Activity concentrations are given neither in Section D nor in the Annex (except for the liquid waste stored in tanks, where the values - a few kBq/l - are surprisingly low).

Answer The values for tank activities are set out based on chemical analyses.
Solid RAW at VVER nuclear power plants - summary activity of drums is only indicated in transport of drums for processing. It is calculated from the values of dose rate and drum weight.

Every drum is measured for the dose rate and surface contamination.
The dose rates values range between:
combustible SRAW - 60 and 1800 microgray/hr
active coal - less than 1 microgray/hr
solid RAW for high-pressure compaction - 16 and 1000 microgray/hr
solid RAW for cementation (SIAL matrices) - 300 and 500 microgray/hr
concrete for *dying-cul* - less than 1 microgray/hr
Surface contamination must be less than 0.3 Bq.

Summary activity of NPP A-1 solid RAW Beta + Gamma ranges between
10 e^5 Bq and 10 e^{13} Bq.
Summary activity of tank concentrates ranges between:
NPP V-1 5.9 e^6 Bq/l and 2.35 e^7 Bg/l
NPP V-2 6.0 e^4 Bq/l and 7.67 e^5 Bq/l
NPP EMO 1.4 e^4 Bq/l and 7.38 e^5 Bq/l

Summary activity of liquid RAW at NPP A-1 ranges between:
Beta, Gamma 1.3 e^9 Bq/l and 3.0 e^{15} Bq/l
Alfa 6.6 e^4 Bq/l and 2.4 e^9 Bq/l

Seq. No	Country	Article	Ref. in National Report
84	Korea, Republic of	Article 32	p.15, p. 52-53

Question/ Comment: The report states that the incineration facility and the sludge fixation facility have been operated for waste treatment. What types of incinerator are used for the waste volume reduction? And what is the fixation method for sludge and their volume reduction factor?

Answer: Incinerator volume reduction factor - 70
Incinerator weight reduction factor - 17
Sludges and fixed into cement or SIAL matrix - (share) Because of securing the product storability at the Mochovce repository the share is 8 – 12 % in the product.
Also the bitumenisation on diskontinual line for sludges and ionex is being prepared as fixation method.
The double-chamber incinerator consists of the chamber furnace and the afterburning chamber. Burners are operated by furnace oil, the combustion gas is cleaned in the reverse washer and filtered.

Seq. No	Country	Article	Ref. in National Report
85	Lithuania	Article 32	

Question/ Comment: In subparagraph B it is written "…transitional radioactive waste – activity of which decreases during storage below the limit value and then it is possible to release it into the environment…". Could Slovakia provide information what are these main limit values?

Answer: Limiting values are set in Regulation of Ministry of Health No. 12/2001 Coll. and are provided in the following tables.

Limiting values for release of radioactive materials into the environment

Table 1

Place of radioactive contamination	**Radiotoxicity class acc. table 2**				
	1	**2**	**3**	**4**	**5**
Materials, solid stuff and items brought out from workplaces with sources of ionizing sources or otherwise released to the	Limiting release values of contamination - mass activity [kBq/kg]				

environment	0,3	3	30	300	3 000
Surfaces of materials and items brought out from workplaces with sources of ionizing sources or otherwise released to the environment	Limiting release values of surface contamination [kBq/m^2]				
	3	30	300	3000	3.10^4

Table 2

Class	Radionuclides
1	Na-22, Na-24, Mn-54, Co-60, Zn-65, Nb-94, Ag-110m, Sb-124, Cs-134, Cs-137, Eu-152, Pb-210, Ra-226, Ra-228, Th-228, Th-230, Th-232, U-234, U-235, U-238, Np-237, Pu-239, Pu-240, Am-241, Cm-244
2	Co-58, Fe-59, Sr-90, Ru-106, In-111, I-131, Ir-192, Au-198, Po-210
3	Cr-51, Co-57, Tc-99m, I-123, I-125, I-129, Ce-144, Tl-201, Pu-241
4	C-14, P-32, Cl-36, Fe-55, Sr-89, Y-90, Tc-99, Cd-109
5	H-3, S-35, Ca-45, Ni-63, Pm-147

Seq. No	Country	Article	Ref. in National Report
86	Lithuania	Article 32	

Question/ Comment: In subparagraph B it is written “It has not been defined yet when the spent fuel becomes a high-level radioactive waste.”
What are the main problems to define spent fuel as high-level waste?

Answer: Actual concept of nuclear fuel cycle in the Slovak Republic is to implement openended fuel cycle. Long term objective in spent fuel management is construction of the deep geological repository for final storage of spent fuel and HLW. Decision about spent nuclear fuel as radioactive waste will be based on decision about construction and design of deep geological repository.

Seq. No	Country	Article	Ref. in National Report
87	Netherlands	Article 32	B.3

Question/ Comment: In B.3 criteria with 'limit values' are referred to, with limiting concentrations defined by Regulation No.12/2001 Coll. of MoH. Since the reader does not know the contents of this regulation, he has no clue of the height of the limits. How do these nuclide specific limits compare with international guidelines? Please explain.

Answer: In the Regulation No. 12/2001 Coll. of MoH SR there are criteria for clearance of solid material. The radionuclides are classified in 5 radio toxicity groups. For any group a specific clearance level in specific activity and superficial activity has been established (example: Cs-137 – 0.3 Bq/g). The values of specific activities and superficial activities are based on older international guidelines, using values of 0.3, 3.0, 30.0, 300.0 and 3000 Bq/g for various radio toxicity groups.

Seq. No	Country	Article	Ref. in National Report
88	Netherlands	Article 32	Section B

Question/ Comment: Please give a short description of how waste management for non-nuclear radioactive waste is organized (e.g. smoke detectors) regarding collection, treatment, disposal, responsibilities and financing.

Answer: RAW produced outside of energy production are in the sense of Act No. 541/2005 defined as IRAW – Institutional RAW (including sealed sources and orphan sources Disposal of IRAW is realized in accordance with internal guideline No. VYZ/3/ZSM – 054 (Disposal of RAW and IRAW) e. g. subsidiary guideline No. VYZ/SM – 054.05 (Disposal of CRAW).
Financing of disposal IRAW is realized on commercial base, where SE-VYZ complete a standard contract with the owner of IRAW for final disposal of IRAW.

Financing of disposal CRAW is realized trough States Found for Disposal of Nuclear facilities.

Seq. No	Country	Article	Ref. in National Report
89	Poland	Article 32	section B1, page 10

Question/ Comment: In the report, among the policy goals 'a long-term goal within the concept of spent fuel management is a construction of deep geological repository of SF and HRAW in the Slovak Republic'
Q: What is the current stage of studies or programmes oriented towards this concept development and implementation. Is there any preliminary long-term schedule adopted by authorities?

Answer: At present site selection for deep geological disposal facility is going on. Four perspective areas in two host formations (sediments and crystalline) have been determined for further geological investigation. Process has been partially suspended and to be re-opened in near future. Initial study was in 1996 and there were two stages between 1997-1998 and then between 1999-2001. Decision on selection of the most suitable locality is expected in 2015. No other specific data were established.
Atomic Act regulates siting for nuclear installations including repositories. Respective regulation No. 50/2006 Coll. defining criteria for site selections is applicable also for the project of underground repository.

The deep geological repository development plant was approved at SE, a.s., in 2003.
Phase 1 (1996-1998)

- Co-ordination activity
- Design and implementation activities
- Source member, field of near and remote interactions
- Siting
- Safety analyses

Phase 2 (1998-2001)

- Design and implementation activities
- Siting and remote interactions
- Safety analyses.

Phase 3 (reduction in the number of sites and passage from the level of study sites to survey) 2004-2006 (a delay in the execution of this phase occurred because of SE, a.s., restructuring and privatisation).

- Safety analyses
- Geologic-survey works
- Organization-management activities

Phase 4 (selection of a prefered site out of two) 2007-2012

- Safety analyses
- Geologic-survey works
- Organization-management activities

- Definitive selection of the site (planning decision) 2012-2015
- Setup of an underground laboratory
  at the site of the selected deep geological repository
  and long-term monitoring thereof 2015-2030
  implementation commencement (building permit) 2030
  deep geological repository development completion 2037
- Deep repository commissioning (obtaining a licence) 2047

Seq. No	Country	Article	Ref. in National Report

90	Sweden	Article 32	Section B.1, p.10

Question/ Comment: The report notes that there is a correspondence between Slovakia and Russia in order to verify the possibility of transporting the spent fuel for reprocessing into the Russian Federation without returning the resulted products back into the Slovak Republic. Proposal for such transportation was indicated by the Russian side already.
What is the status of this issue?

Answer: There was communication with Russian organizations between 2001-2004 about possibilities of export of the spent fuel for reprocessing. Communication ended without commercial proposal because of unfavourable legislation in the Russian Federation. After changes in Russian legislation the discussions were not renewed.
The "Concept of decommissioning of nuclear facility and management of spent fuel" is reevaluated from environmental point of view and should by completed by 31.12.2007. It is assumed that decision about location of deep geological repository will be made after 2015.

Seq. No	Country	Article	Ref. in National Report
91	Sweden	Article 32	B.2, p.11

Question/ Comment: It is noted in the report that costs of radioactive waste management produced during the decommissioning of nuclear power facilities shall be covered from the resources of Fund.
How is payment to the Fund arranged?

Answer: The amount of payments to the Fund by NPP operators was established by Act No. 254/1994 Coll. This was SKK 350,000 a year for every megawatt of installed electric capacity of a nuclear installation and 6.8% of the selling price for electricity generated at the nuclear installation a year. The ownership of SE-VYZ together with NPP V-1 is transfered to the 100% state owned company GovCo Inc. by April 2006. The system financing of decommissioning projects will remain the same (in connection with the ownership transfer), however the new conditions for finacing of decommissioning projects in Slovakia is defined by a new Act on the nuclear account, approved by the Slovak parliament on March 16th 2006.

Seq. No	Country	Article	Ref. in National Report
92	Sweden	Article 32	D.3.2, p.16

Question/ Comment: On metallic radioactive waste from A1, the report states that once it has been decontaminated it is released into the environment. Please explain in what way the radioactive waste is released into the environment. What are the clearance levels for the metallic radioactive waste?

Answer: Metal RAW are discharged into the environment through a mediator (A.S.A Slovakia, s.r.o.) as follows:

carbon steel	to Železiarne Podbrezová, s.r.o.
stainless steel	to U.S. Steel Košice, s.r.o.

In the monitoring workplace, the weight and activity of a 200-litre drum will change, from which the average activity per kg of metallic material will be ascertained. This must be below the discharge level. The discharge levels for putting metallic material into the environment result from Annex 8 to Slovak Ministry of Health Regulation No. 12/2001 Coll. These are:
weight activity - for example for radiotoxicity Class 1 is 300 Bq/kg
surface activity of surface contamination - for example radiotoxicity Class 1 is 3 kBq/m^2.

Seq. No	Country	Article	Ref. in National Report
93	United States of America	Article 32	10

Question/ Comment: Future goals include pursuing deep geologic disposal both in the Slovak Republic and regional repositories. How is Slovakia benefiting from its experience from SAPIERR? Also, please describe

potential deep geologic disposal sites in Slovakia, and their geology.

Answer It is expected, that SAPIERR results and experience will be utilized in case, if a regional repository will be developed. Presently the final report is prepared.
The research and development of DGR in Slovak Republic began in 1996 in 15 study areas. Presently there are 6 research areas - 4 in granitoid rock formations, 2 in argillaceous and pelitic formations. In future (2012 – 2015) it is assumed, that these areas will be reduced to 2 test areas (1 in granitoid rock and 1 in sedimentary formation).

In the initial proposal 15 candidate areas were chosen. The follow-up works shortlisted the choice. The first drills were carried out under the deep geological reposition development program. The aim was to verify the existing information on the subbed of the sites, pumping and ascending tests, water sampling and a complex geophysical and borehole measurements were undertaken. Tests were performed on the rock samples to ascertain their fundamental properties.
The final result of the application of selection criteria in 1999 was the setting of 6 study sites for further research and survey:

1. "Central section of the Tribeč mountain range"
2. "Central section of the Žiar mountain range"
3. "Southern section of the Veporské vrchy hills"
4. "South-western section of the Stolické vrchy hills"
5. "Eastern section of the Cerová vrchovina highlands"
6. "Western section of the Rimavská kotlina basin".

Assessed in the study sites were geological, structural and tectonic conditions, hydrogeologic conditions, engineering-geologic conditions, geochemical characteristics of the rock environment, conditions, deposit conditions as well as characteristics of conflicts of interest in these areas.
A team of specialists of the Bratislava-based State Geological Institute of Dionýz Štúr selected two locations for further investigation and research (one in crystalline and the other in sedimentary rock environment).
Western section of the Rimavská kotlina basin (sedimentary rock environment)
Central section of the Tribeč mountain range (crystalline rock environment)

Seq. No	Country	Article	Ref. in National Report
94	United States of America	Article 32	11

Question/ Comment Clearance or release levels are described only by reference to the appropriate regulation. Please discuss quantitative concentration or dose limits, since none are provided in the report.

Answer In the Regulation No. 12/2001 Coll. of MoH SR there are criteria for clearance of solid material. The radionuclides are classified in 5 radio toxicity groups. For any group a specific clearance level in specific activity and superficial activity has been established (example: Cs-137 – 0.3 Bq/g). The values of specific activities and superficial activities are based on older international guidelines, using values of 0.3, 3.0, 30.0, 300.0 and 3000 Bq/g for various radio toxicity groups.