ANSWERS TO QUESTIONS

ON

NATIONAL REPORT OF

THE SLOVAK REPUBLIC

COMPILED ACCORDING TO THE TERMS OF THE CONVENTION ON NUCLEAR SAFETY

BRATISLAVA
APRIL 2008

AUSTRIA

Convention on Nuclear Safety
Questions Posted To Slovakia By Austria in 2008

Q.No	Country	Article	Ref. in National Report
53	Austria	Article 11.2	

Question/ Comment	What education and training programme does the regulatory body have for its staff?
Answer	For example inspector is trained based on Systematic approach of Training, which is recommended by IAEA for competence training and maintenance in nuclear facilities and regulatory bodies on the world. This system includes sort of training programmes prepared by modules for each types, forms and phases of Professional training what have to use also authorization holders in Slovak Republic. After staff members are trained and participating on different educational programmes according to the requirements for civil servants.

Q.No	Country	Article	Ref. in National Report
57	Austria	Article 12	

Question/ Comment	What percentage of operational events was caused by human errors? Do you have statistics of human error events over the last 5 years? If yes, please provide.
Answer	See support document
Support Documents	» Answers to the Question No. 57

Q.No	Country	Article	Ref. in National Report
95	Austria	Article 19.7	

Question/ Comment	As seen from the national report, the number of operational events in 2006 was higher than in 2005. What are the reasons for such an increase? Could any of the events be attributed to changes in the organisation of the utility or its ownership?
Answer	In 2006 increased number of operational events was encountered at Mochovce NPP due to deficiencies in the following areas: - reliability of safety related systems - human performance - organisational processes Necessary measures have been taken to improve the identified adverse trend in the mentioned areas through root causes analysis of specific events, based on results of trending analysis and self-assessments. In 2007 Mochovce NPP experienced 15 operational events (i.e. events that met criteria for reporting to the regulatory body) and number of repeated problems significantly decreased. This decrease is attributed to the near miss program, too. The Mochovce NPP near miss program was improved in 2005 based on recommendations of the project “Improving Safe Operation and Safety Culture Using Near-Miss Concept” (a project of Nuclear Safety Programme Managed by BNFL on behalf of UK Department of Trade and Industry). However, two operational events occurred at Mochovce NPP in 2007, which were evaluated at INES1 level. These events were due to deficiencies in configuration control of valves associated with the Reactor Coolant System Main Flange Tightness Control System. Despite of the seriousness of these events it must be noted that the events proved open-reporting culture of Mochovce NPP personnel. See the answer to the question No.91, too.

We have statistics for Bohunice site (EBO) and Mochovce site (EMO). The percentages of human errors over the last 5 years are listed in the table below.

Installation/Year	2003	2004	2005	2006	2007
EBO (%)	17.2	22.2	24.2	24.4	27.1
EMO (%)	18.2	28.6	22.2	33.3	33.3

BRAZIL

Convention on Nuclear Safety
Questions Posted To Slovakia By Brazil in 2008

Q.No	Country	Article	Ref. in National Report
1	Brazil	General	

Question/ Comment: The National Report of the Slovak Republic shows a good progress in the improvement of the safety level of the operating plants. The use o PSA to demonstrate the progress is deeply appreciated.

Answer: Slovakia would like to thank for the positive statement of Brazil.

Q.No	Country	Article	Ref. in National Report
16	Brazil	Article 7.1	Item 3.1.3. Page 51

Question/ Comment: What kind of sanction UJD can impose? And what sanctions has UJD imposed in the last years?

Answer: UJD may impose several types of sanctions. The financial penalties pursuant to Art. 34 of the Atomic Act No. 541/2004 Coll. being imposed to the natural persons or legal entities are the most common type of sanction. The largest inflictable penalty available is up to SKK 50 mil. (approx. EUR 1,8 mil.), which may be impose upon the person for use of nuclear energy for other purpose than peaceful one. The lowest possible financial penalty may be imposed upon a natural person for the administrative infractions amounting to up to SKK 100.000 (approx. EUR 3.800). The financial penalties differ according to gravity of the law violation, and as well, UJD may impose even an additionial penalty upon the person who failed to remedy insufficiencies for which a fine had been previously imposed. What is more, in accordance with the Article 9 (3) and Article 32 of the 2004 Atomic Act, there exists a competence of UJD to suspend or restrict the authorisation given, which, as well, may be considered as kind of a sanction. In general, UJD will impose these sanctions on exceptional basis, because usually, there is an intention of the regulator to reach the desired status rather smoothly through drawing licensee´s attention to insufficiences or through interpretations. In the previous period, UJD imposed 5 penalties in total.

Q.No	Country	Article	Ref. in National Report
28	Brazil	Article 8.1	Item 3.1.3.3. Page 53

Question/ Comment: Does the Act N. 541/2004 Coll. Gives the power to UJD to apply sanctions? Or is there any other legislation to this effect?

Answer: UJD may impose several types of sanctions. The financial penalties pursuant to Art. 34 of the Atomic Act No. 541/2004 Coll. being imposed to the natural persons or legal entities are the most common type of sanction. The largest inflictable penalty available is up to SKK 50 mil. (approx. EUR 1,8 mil.), which may be impose upon the person for use of nuclear energy for other than peaceful purpose. The lowest possible financial penalty may be imposed upon a natural person for the administrative infractions amounting to up to SKK 100.000 (approx. EUR 3.800). The financial penalties differ according to gravity of the law violation, and as well, UJD may impose even an additionial penalty upon the person who failed to remedy insufficiencies for which a fine had been previously imposed. What is more, in accordance with the Article 9 (3) and Article 32 of the 2004 Atomic Act, there exists a competence of UJD to suspend or restrict the authorisation given, which, as well, may be considered as kind of a sanction. In general, UJD will impose these sanctions on exceptional basis, because usually, there is an intention of the

regulator to reach the desired status rather smoothly through drawing licensee´s attention to insufficiences or through interpretations. In the previous period, UJD imposed 5 penalties in total.
The violations of law are defined as administrative delicts (for legal entities) and offences (for natural persons). Administrative delicts and offences and their sanctions are laid down in Article 34 of the Atomic Act No. 541/2004 Coll in such way that each provision specify subject matter of the delict or offence by appealing to another provisions of the Act (defining obligations or basic principles), and, corresponding maximum inflictable amount of penalty, as well. For example, "...a fine of up to SKK 10.000.000 shall be imposed by the Authority upon authorisation holder who has violated his responsibilities under Article 10..." and in Article 10, there are laid down the obligations of the authorisation holder explicitly.
Should the authorisation holder do not respect or comply with the sanctions imposed by the UJD, the UJD would file a bill at the court to carry decision into execution, and consecutively, request an executor to carry out enforcement.

Q.No	Country	Article	Ref. in National Report
34	Brazil	Article 8.2	Item 3.1.3.4. Page 55

Question/ Comment: Does Slovak Rep. still has bilateral cooperation with Russia (Not listed in this item)?

Answer: Yes, Slovakia has a number of bilateral cooperation agreements relating to scientific and technical cooperation including cooperation between regulators. In addition nuclear fuel supply contracts are at present exclusively concluded with suppliers from the Russian Federation.

Q.No	Country	Article	Ref. in National Report
54	Brazil	Article 11.2	Item 4.2.3. Page 67, 4.2.4 Page72

Question/ Comment: Who issues the Certificate of Professional Competency? And who can withdraw it?

Answer: Certificate of Professional Competency is issued by a specialized facility or a authorization holder for professional training. Certificate of Professional Competency has limited validity and is subject to further periodical training.

Q.No	Country	Article	Ref. in National Report
58	Brazil	Article 12	Item 4.3.3. Page 78

Question/ Comment: Which "safety culture indicators" have been defined? And how are they collected and evaluated?

Answer: UJD does not have any safety culture indicators, only nuclear power plants have their own safety culture indicators, which are periodically evaluated and reported.

Q.No	Country	Article	Ref. in National Report
65	Brazil	Article 14.1	Item 4.5.5. Page 85

Question/ Comment: What is the status of the 4 safety measures " which do not affect defense in depth"?

Answer: Three of the four safety measures already completed are:
CI 02 – Non-destructive testing
IH 07 – Internal hazzards due to high energy pipe breaks
RC 01 – Prevention of uncontrolled boron dilution
The last measure, i. e. „S 13 – Feedwater supply vulnerability" is scheduled to be implemented gradually during refueling outages.
At the time (May 2007) of the preparation of the „National Report of 2007", the

scope of safety measures implemented was to such an extent, that the state of the systems which were upgraded by these safety measures from the safety point of view fully ensured required level of defece in-depth (see also response to Q No. 3).

Q.No	Country	Article	Ref. in National Report
85	Brazil	Article 16.3	Item 4.7.4 Page 96

Question/ Comment: What are the criteria to use Iodine prophylaxis? Who makes the decision? Who keeps the Iodine tablets?

Answer: Criteria to use iodine prophylaxis are based on the level of radiation doses according to international IAEA standards – The dose constraint for radioactive dose rate from path is more than 0.1 mSv / hour for the damaged unit and 1.0 mSv / hour for the undamaged unit. (It is defined in accordance with the Governmental Ordinance No. 345/2006 Coll. on Basic Safety Requirements for Health Protection of Workers and Population Against Ionizing Radiation).
2. The Shift Supervisor or Emergency Control Centre Leader makes decision to use Kalium Iodatum. The specialist of dosimetry prepares recommendation to Iodine prophylaxis application. Note: Shift supervisor or Emergency Control Centre Leader prepares recommendation to the general public in the emergency planning zone, too. These recommendations are sent to regional crisis centres in dependence on actual meteorological and radiological situation.
3. Iodine tablets are located in the shelters and in selected rooms within nuclear installation. Emergency Commission recommends usage of KI also for public in the vicinity. Iodine tablets are handled to the individual persons, schools within vicinity. Tablets are procured by operator.
The last exchange of iodine tablets was performed in November 2007. Expiratory time period is 5 (five) years, it means in the end of 2012.

Q.No	Country	Article	Ref. in National Report
93	Brazil	Article 19.4	Item 5.3.3.4 Page 110

Question/ Comment: What calculational tools have been used to perform the necessary calculations for the development of Severe Accident Management Guidelines (SAMG)?

Answer: RELAP 5 mod 3 and MELCOR 1.83 and 1.85, RELAP 5 -3D and ASTEC v1.3.0 – v1.3.2.

CZECH REPUBLIC

Convention on Nuclear Safety
Questions Posted To Slovakia By Czech Republic in 2008

Q.No	Country	Article	Ref. in National Report
88	Czech Republic	Article 18.1	

Question/ Comment	After completing of separate plant modifications in 2008 year, focused to the Power update of operating NPP V-2 units, is there any overall safety assessment of each individual unit planned by Regulatory Authority before issuing of permission for operation on increased power, or presented preliminary study is considered as sufficient?
Answer	According to national legislation the power uprate of operating NPP unit is considered as modification to NPP. In the frame of supervision of NPP modification performed by the UJD, the safety assessment process is governed by national legislation. The safety assessment of NPP V-2 units for operation on uprated power level considering all previous modifications in the frame of ongoing NPP V-2 modernization project will be performed by the UJD in accordance with legislation requirements. The planed modifications are introduced into the updated version of SAR which is approved by UJD before these modifications implemented of the NPP.

FINLAND

Convention on Nuclear Safety
Questions Posted To Slovakia By Finland in 2008

Q.No	Country	Article	Ref. in National Report
29	Finland	Article 8.1	
Question/ Comment	Do you have currently in your regulatory staff, or in a technical support organization (TSO) working for the regulatory body, an adequate number of technical experts (e.g., in the areas of reac-tor physics, thermo-hydraulics, and materials engineering) who can conduct an in-depth safety assessment of nuclear power plant, as would be needed for evaluation of operating events, large power upgrade, lifetime extension, or new build? Do these experts have tools and ability to conduct independent safety analysis, including both deterministic analysis and PRA? What is the number of such experts in various technical areas within the regulatory body and within the TSO? What is the outlook concerning the number of experts in a few years ahead?		
Answer	There is a Division of safety analysis and technical support within the UJD organization structure responsible for review of safety documentation and performance of independent safety analyses including deterministic (reactor physics, thermal-hydraulics and structural analysis) as well as PSA analysis. The division numbers 7 experts. The staff is periodically re-trained in the responsible areas and involved in some research and development activities focused on the safety evaluation and development/ validation of analytical models and tools. The division is equipped with necessary analytical tools such as computer codes. This number of experts is basically sufficient for the review and assessment of documentation related to safety analyses of Slovak nuclear facilities. For specific areas, which the division has not fully covered, an external co-operation with technical organizations and domestic universities is arranged on case-by-case basis. In some cases a support from the IAEA, OECD/NEA, EK or regulatory bodies of the countries operated WWER reactors is arranged. There are no consultations on increasing or decreasing the division staff number at this time.		
Q.No	Country	Article	Ref. in National Report
30	Finland	Article 8.1	
Question/ Comment	What kind of systematic training and development programmes you have for your new regulatory staff members? How do you ensure that they are ready to conduct their duties as regulatory staff members in the tasks assigned to them?		
Answer	In the area education UJD utilizes all sorts of education. The management of the whole education process at UJD is realized by means of chairperson order, in which are planned education activities for relevant year. The education is divided according to themes to several parts -economy, legislation, informatics, language courses and special education for inspector positions. UJD has a particular system of preparation for inspectors. This system includes a set of training programmes for each inspector job position {site inspector, inspector for emergency planning, for personnel training,.., etc.). These training programmes are subdivided to modules for different types and phases of training {basic, periodical, theoretical, drill on ful-scope simulator,...). Actually UJD plan to update the education system by means of EU project during period 2008-2010, which will focus on all technical staff.		
Q.No	Country	Article	Ref. in National Report
66	Finland	Article 14.1	

Question/ Comment	International cooperation for regulatory related nuclear safety research is an important issue to be considered. What is your view or opinion concerning the needs in your country for large nuclear safety related experimental test programmes to study physical phenomena and to validate analysis models used in safety analysis (e.g. three dimensional reactor physics and ther-mal hydraulic models etc)? Are such experimental research and analysis work needed for safety upgrading or assessment of safety in case of periodic safety review or plant life extension in your country or for new reactors?
Answer	Validation of the computer codes and facility models (nodalization) used for safety analyses is examined when performing the regulatory review of Safety analysis report. Computer code validation and its applicability to analyzed facility are typically referenced to international cooperation programs (e.g. CAMP - Code Application and Maintenance Program – for RELAP5 computer code). Facility models are also validated mostly on internationally available data from separate and integral tests and to a minor extent validated against the actual facility measurements (steady-state data, test data, facility events). Adequate validation naturally requires an enormous amount of various data exceeding the possibilities of Slovak republic and therefore the international experimental test programs are essential. Validation is also a continuous activity where there are always issues to be solved or at least addressed in a better way. This leads to a need of continuous experimental and research program. International activities are monitored by the regulatory authority, in limited numbers of cases regulatory staff is even directly involved in international program (SARNET project). Experience and knowledge about advances in the area of safety analysis is then progressively incorporated into the requirements on how to perform (licensing) safety analysis. UJD has also supported and financed research and development activities. Some of the activities are related to the development and validation of computer codes and used models. If the utility provided evidences on safety are considered insufficient or there are any doubts on submitted results than UJD requires perform additional analytical or experimental work

Q.No	Country	Article	Ref. in National Report
67	Finland	Article 14.1	

Question/ Comment	Is there a requirement in your country to apply PRA methods to support periodic safety review, licensing of plant life extension or power upgrade, or licensing of new build?
Answer	Regulation No. 58/2006 Coll. of UJD on details concerning the scope, content and method of preparation of nuclear installation documentation needed for certain decisions, “§ 20 Probabilistic safety assessment of nuclear safety (1) License holder shall prepare study of Probabilistic safety assessment of nuclear safety level 1 as assessment of core damage frequency for all modes of nuclear installations.” Regulation No. 50/2006 Coll. of the UJD on details concerning nuclear safety requirements for nuclear installations in respect of their siting, design, construction, commissioning, operation, decommissioning and closure of repository, as well as criteria for categorization of classified equipment into safety classes

Attachment No. 4 of the Regulation No. 50/2006 Coll. - Requirements on nuclear safety during sitting, design, construction, commissioning, operation, decommissioning and repository closure
"Article (7) PSA study level 1 and level 2 shall be regularly reassessed during Periodic safety review of nuclear safety and during
a) relevant design changes (plant life extension or power upgrade, plant modification or licensing of new build),
b) relevant changes of operational procedures,
c) relevant risk observed"

Q.No	Country	Article	Ref. in National Report
75	Finland	Article 14.2	

Question/ Comment	What kind of systematic aging review programmes are ongoing (by power companies or regulators)?
Answer	Responsibility for an implementation of ageing management review programmes lies on the licensee. Ageing management programmes are developed for each individual unit and they cover main components and piping systems, civil structures – confinement, power and I&C cables. These programmes are aimed at all known and possible ageing mechanisms as e. g. RPV embrittlement, low cycle and thermal fatigue, erosion-corosion, etc. The evaluation of residual lifetime in term of e. g. fatigue usage factor evaluation, evaluation of RPV surveillance programmes, etc. is carried out for each fuel cycle and cummulatively from the start of unit operation. RPV surveillance programmes are evaluated in accordance with its time schedule, monitoring of neutron fluence is done (expect of measurement in the surveillance capsules) each fuel cycle in the reactor cavity. In accordance with the Reulatory Authority decision 68/2007, the licensee is responsible to submit the ageing management report to the Regulatory Authority for review at least up to 2 months after refueling outage of each individual unit. Expect of this, in accordance with the Regulation No. 49/2006 on Periodic Safety Review, the ageing management area is a subject of the Periodic Safety Review which is done in 10 year periods for each plant. The Regulatory Authority in 2001 has issued a safety guidelines No. BNS I.9.2/2001 „Ageing Management of Nuclear Power Plants", which developed in more detail requirements of the Regulatory Authority on the ageing management and ageing management programmes. For example the following Ageing Management Programs are carried out at Mochovce NPP (AMP) : • AMP for RPV – Reactor Pressure Vessel (regulatory requirement) • AMP for SG - Steam Generator (regulatory requirement) • External pipelines of Essential Service Water (company requirement) • Secondary circuit pipelines - erosion corrosion – FLAC (company requirement) • Cables systems (company requirement) • Building part (company requirement) • Primary pipelines (regulatory requirement)

Q.No	Country	Article	Ref. in National Report
89	Finland	Article 18.1	
Question/ Comment	What is your national policy concerning need for Severe Acci-dent Management (SAM) procedures or back-fitting measures at operating facilities, aiming to protect the reactor containment integrity after a possible severe core damage? Are SAM proce-dures in place at the operating nuclear power plants? Has back-fitting been completed that addresses all physical phenomena, which might endanger containment integrity?		
Answer	SAM procedures and necessary hardware provisions are explicitly required in the legislation only for new nuclear installations. For operating units there is no explicit legal requirement. After 2010 in the frame of implementation of WENRA process in the national legislation the requirements will be issued.		
Q.No	Country	Article	Ref. in National Report
90	Finland	Article 18.2	
Question/ Comment	Have you met specific problems to find spare parts or replacement components properly qualified to a high safety class, as needed for plant lifetime management? If yes, how have you addressed the problem?		
Answer	There are no specific problems to find spare parts or replace components provided that spare parts are ordered sufficiently in advance. Concerning the plant life time management, a special team was established to plan and order needed spare parts.		
Q.No	Country	Article	Ref. in National Report
96	Finland	Article 19.7	
Question/ Comment	Please explain the principles or criteria applied by the regulator and operator for screening other experience than incidents (e.g., management issues, unexpected degradation, design weak-nesses, external hazards not considered earlier), for the purpose of ensuring adequate sharing of important experience with in-ternational interested parties (regulatory bodies, operators, de-signers, international bodies). Identify the relevant guide docu-ments, if any, used for the screening.		
Answer	Plant screening criteria for industrial experience are based on WANO documents for external operational experience. Using WANO Guideline 2003-1 “Guidelines for Operating Experience at NPPs” and IAEA TECDOC “A System for the Feedback of Experience from Events in Nuclear Installations“ following screening criteria for industry operating experience have been adopted: - WANO SOERs, SERs - events with significant consequences on basic safety functions/ safety-related equipment reliability/ radiological safety/ fire protection/ industrial safety - significant consequences on plant operation due to environmental conditions - events with common cause/ common mode implications - similar equipment/ plant design/ practices/ procedures/ previous event that predispose the plant to similar events Main sources of industry operating experience information are WANO and IRS databases. Regarding criteria for reporting events to other international parties – Bohunice and Mochovce NPPs reports events to WANO in accordance with criteria defined in WANO guideline “WANO Operating Experience Programme – Reference manual“, issued in 2001. For example, in 2007 Mochovce NPP reported 3 operating events and Bohunice NPP reported 2 operating events to WANO		

Moscow Centre in accordance with these WANO criteria.
Bohunice and Mochovce NPPs share all operational events, which met reporting criteria, to the national regulatory body, each other and ÈEZ NPPs (Dukovany, Temelín).

Q.No	Country	Article	Ref. in National Report
97	Finland	Article 19.7	

Question/ Comment	Please explain how the regulatory body ensures or verifies that the operators are informed and properly analyse the operating experiences reported through the well established international channels (e.g., WANO, IRS), and that they address the lessons learned by taking proper actions.
Answer	Regulation No. 50/2006 Coll. of the UJD on details concerning nuclear safety requirements for nuclear installations in respect of their sitting, design, construction, commissioning, operation, decommissioning and closure of repository, as well as criteria for categorization of classified equipment into safety classes Attachment No. 4 of the Regulation No. 50/2006 Coll. - Requirements on nuclear safety during sitting, design, construction, commissioning, operation, decommissioning and repository closure “I. Feedback from operating experience (OE) (1) License holder shall set feedback from events on nuclear installations (domestic and international) and corrective actions from events as part of OE system (2) License holder shall set system of evaluation of events as preventive systems from OE” The regulatory body ensures and verifies that the operators are informed and properly analyze the operating experiences using Periodic Safety Review process. Obligation of use of PSR process is established by Regulation No. 49/2006 Coll. of the UJD on periodic nuclear safety review every 10 years. One of the objectives of PSR is defined as “use of experiences from other NIs and from research” Regulation No. 49/2006 Coll. of the UJD on periodic nuclear safety review, “§10 Use of experiences from other NIs and from research shall contain: (1) Analysis of feedback from other NIs and research (operational events and corrective actions (2) Evaluation contains: collection and use of experiences from other NIs and from research (3) Modification and changes at other NIs and research”

Q.No	Country	Article	Ref. in National Report
98	Finland	Article 19.7	

Question/ Comment	Please explain your national policy and practice of sending feedback reports to the international interested parties on actions that have been taken in your country as response to significant events reported through international channels (e.g., WANO, IRS).
Answer	See support document
Support Documents	» Answers to the Question No. 98

Regulation No. 50/2006 Coll. of the UJD on details concerning nuclear safety requirements for nuclear installations in respect of their sitting, design, construction, commissioning, operation, decommissioning and closure of repository, as well as criteria for categorization of classified equipment into safety classes

Attachment No. 4 of the Regulation No. 50/2006 Coll. - Requirements on nuclear safety during sitting, design, construction, commissioning, operation, decommissioning and repository closure

"I. Feedback from operating experience (OE)

(1) License holder shall set feedback from events on nuclear installations (domestic and international) and corrective actions from events as part of OE system

(2) License holder shall set system of evaluation of events as preventive systems from OE"

An example of national policy and practice of sending feedback reports to the international interested parties - List of reports on events at the NIs in the Slovak Republic sent to the OECD/IRS MAAE

FOR YEAR	EVENT DESCRIPTION	SITE/NPP	DATE OF SENDING
1997	PARTIALLY BLOCKED ORIFICE INTO ONE FUEL CHANNEL	EBO-1	25.9.2000
1998	SHORT-TERM INOPERABILITY OF ALL EDGS	EBO-1	13.2.2001
1999	INCREASED EXPOSITION DURING REACTOR ASSEMBLY	EBO-3	13.2.2001
2000	REACTOR SCRAM FOLLOWING UNIT DISCONNECTION FROM GRID DUE TO INCORRECT MANIPULATIONS IN EXTERNAL SWITCHING STATION	EBO-2	DEC 2001
2000	EXPOSURE OF PERSONNEL DURING REACTOR PRESSURE VESSEL INSPECTION, REVEALED DURING MONTHLY EVALUATION OF DOSIMETERS	EBO-4	DEC 2001
2000	VIOLATION OF LIMITS AND CONDITIONS FOR TEMPERATURE DIFFERENCE BETWEEN RCS AND PRESSURIZER WHILE ENTERING INTO POWER MODE DUE TO COMMUNICATION	EMO-1	DEC 2001
2001	SHORT-TERM INOPERABILITY OF ALL FOUR EDGS AT UNIT AT FULL POWER	EBO-1	Feb 2001
2001	INCREASED EXPOSITION DURING REACTOR ASSEMBLY	EBO-3	Feb 2001
2002	MANUAL SCRAM FOLLOWING LOSS OF 400 KV LINE	EMO-2	Sept 2002
2002	CHOKING OF SCREENS AT CONFINEMENT SPRAY PUMP SUCTION	EMO-2	Sept 2002
2002	DEGRADATION OF NATURAL CIRCULATION IN THE COURSE OF REACTOR DRAINING	EMO-1	Sept 2002
2003	LOOS OF COOLANT FROM RCS ISOLABLE PART DUE TO LEAKING VALVES	EBO-1	Dec 2003
2003	DEGRADATION OF NATURAL CIRCULATION IN THE COURSE OF REACTOR DRAINING	EMO-1	Dec 2003
2003	RAPTURE OF RCS DRAIN PIPE DURING PRESSURE TEST AT 16,8 MPA	EMO-2	Dec 2003
2004	SCRAM DUE TO I&C TECHNICIAN MISTAKE BETWEEN UNITS	EBO-4	Nov 2004
2004	VIOLATION OF LIMITS AND CONDITIONS DUE TO A CLOSED VALVE AT AUXILIARY FEEDWATER PUMP OUTLET	EMO-1	Nov 2004
2004	REACTOR SCRAM DUE TO FALSE ACTUATION OF MAIN GENERATOR PROTECTION WITH THE START OF ALL DGS	EMO-2	Nov 2004
2005	IONEX PENETRATION INTO THE REACTOR COOLANT SYSTEM DURING THE EXTENDED OUTAGE RGO1/2005	EBO-1	Jan 2006
2005	UNSOLVED LONG-TERM INDICATION OF EXCESSIVE PRESSURE ON THE MAIN COOLANT PUMP SERVICE DECK A301/1,2	EMO-1	Jan 2006
2006	ECCS ACTUATION DURING UNIT START-UP OF THE BOHUNICE NPP	EBO-4	July 2006

In previous years WANO Moscow Centre asked their members to report on actions taken in response to WANO SOERs and SERs. Operators responded to such questions as required by WANO.

The system of feedback to events reported through international channels is periodically reviewed by international missions such as WANO Peer Review and OSART missions, e.g.

the last WANO peer review investigated corrective actions as a response on significant events, which we obtained through international channels (e.g. – SOERs).

GERMANY

Convention on Nuclear Safety
Questions Posted To Slovakia By Germany in 2008

Q.No	Country	Article	Ref. in National Report
3	Germany	Article 6	2.2; 4.5.5, p. 32 ff; p. 85
Question/ Comment	Detailed information is given in Chapter 2.2. and 4.5.5 regarding the Bohunice V-2 Modernisation Programme MOD V-2 which is intended to be completed by 2008. Please provide an overview on the present status of implementation of IAEA safety issues to the categories (according to the IAEA V-213 reactors Issue Book), please?		
Answer	See support document		
Support Documents	» Answer to the question No. 3		

Q.No	Country	Article	Ref. in National Report
4	Germany	Article 6	
Question/ Comment	Is it planned to operate Bohunice V-2 after completion of MOD V-2 beyond the initially designed lifetime? Which measures are pre-conditions for continued operation, especially with regard to ageing management.		
Answer	Yes, one objective from others of the Bohunice V-2 MOD V-2 was to create the conditions, by partial upgrading project preparation and realisation, for the extension of the lifetime of both units up to minimum 40 years. Each equipment was reviewed individually and approved according to the criteria of the Modernisation project, in accordance with regulatory requirements.		

Q.No	Country	Article	Ref. in National Report
35	Germany	Article 8.2	
Question/ Comment	The following question is of special interest for Germany for the further development in this field. As this item may already be covered by your report or by other questions posted by Germany, we do not expect repetitions of information already delivered. Please just give additional information as appropriate. It was decided at the Third Review Meeting to discuss this topic at the Fourth Review Meeting. Is the principle of effective separation (as given in Art. 8 Para 2) laid down explicitly in any binding national law or is this principle met by a sum of state organisational measures?		
Answer	Chapter 3 of the National Report describes in detail this subject. For example Act No. 575/2001 Coll. on Organization of Governmental Activities and of Central State Administration as amended (so called Competence Act) defines the framework of tasks and responsibilities of central state administration authorities. The provision on UJD is in § 29 of the valid Competence Act. UJD (Nuclear Regulatory Authority) is a central state administration authority. It provides the execution of state regulatory activities in the field of nuclear safety of nuclear installations, including regulation of management of radioactive waste, spent fuel and other parts of the fuel cycle, as well as transport and management of nuclear materials including their control and record keeping system. It is responsible for the assessment of goals of nuclear energy program and of quality of the classified equipment, as well as for commitments of the Slovak Republic under international agreements and treaties in the said field.		

Q.No	Country	Article	Ref. in National Report
36	Germany	Article 8.2	
Question/ Comment	The following question is of special interest for Germany for the further development in this field. As this item may already be covered by your report or by other questions posted by Germany, we do not expect repetitions of information already delivered. Please just give additional information as appropriate. It was decided at the Third Review Meeting to discuss this topic at the Fourth Review Meeting. Is there any difference to your point of view between “effective separation” and “independence” as referred to in your report?		
Answer	Para 3.1.3.2 of the National Report: UJD is an independent state regulatory authority that reports directly to the Government and is headed by a Chairman appointed by the Government. The regulatory authority’s independence of any other authority or organization engaged in the development and utilization of nuclear energy applies in all relevant areas (legislation, human and financial resources, technical support, international cooperation, enforcement instruments). Pursuant to the Act No. 541/2004 Coll., UJD is authorized to draft generally binding legal provisions in the field of nuclear safety (acts, decrees). Besides that, UJD issues safety guidelines. UJD´s budget comprises a part of the state’s budget. UJD has financial and human resources capacities for independent safety analyses and technical support. The term “effective separation” is used in terms of separation of safety systems and not in terms of administrative bodies.		
Q.No	Country	Article	Ref. in National Report
37	Germany	Article 9	
Question/ Comment	The following question is of special interest for Germany for the further development in this field. As this item may already be covered by your report or by other questions posted by Germany, we do not expect repetitions of information already delivered. Please just give additional information as appropriate. It was decided at the Third Review Meeting to discuss this topic at the Fourth Review Meeting. Is the principle, that prime responsibility for the safety of nuclear installations rests with the holder of the relevant license laid down explicitly in any binding national law or is this principle met by a sum of regulatory requirements?		
Answer	The principle of the prime and exclusive responsibility for the safety of nuclear installations resting with the licensee is laid down explicitly in Article 23 (1) of the Atomic Act No. 541/2004 Coll. However, also implicit provisions of Article 10 (1) (a) of the Atomic Act should be mentioned, which laid down an obligation of the licensee to ensure nuclear safety, physical protection, emergency preparadness including verification thereof within the scope of the licence. Moreover, priority given to the safety aspects is underlined in Article 3 (4) of the Atomic Act, upon which “...in using nuclear energy, priority emphasis shall be given to safety over any other aspects of such activities...” Details on requirements for nuclear safety obliging licensee are specified in the UJD´subordinated legislation, mostly in the regulation No. 50/2006 Coll. on requirements for nuclear safety.		
Q.No	Country	Article	Ref. in National Report
41	Germany	Article 10	

Question/ Comment	Reference to the Summary Report of the 3rd Review Meeting, item 36, 38, 42 and 43 The following set of questions is of special interest for Germany for the further development in this field. As some of these items may already be covered by your report or by other questions posted by Germany, we do not expect repetitions of information already delivered. Please just give additional information as appropriate. It was decided at the Third Review Meeting to discuss this topic at the Fourth Review Meeting. 1. Is a safety management system (SMS) planned or implemented? 2. What is the basis of the SMS (IAEA Requirements, other criteria)? 3. Is the implementation of a SMS voluntary or obligatory? (Does the regulator require the implementation of the SMS? If yes, how detailed are the requirements for the contents of the SMS?) 4. How is the SMS assessed and approved? (Does the regulatory body check whether the appropriate processes are implemented or available in the SMS? Does the regulatory body check whether and to which extent the applicable criteria for a safety management system are fulfilled? Is the authority entitled to inspect the results of the SMS assessment and if so, to which extent?) 5. How is an external review process performed? 6. What are the key elements of an SMS? (Indicators, Integrated or stand alone system, Continuous improvement and treatment of deviations (Are there regulations how to handle deviations from the specified process?); Participation on benchmarks exercises of licensees
Answer	1. The implementation is planned at EMO in 2008 including the certification. 2. OHSAS 18001:2007, legislation of SR (the Act No.124 on safety and protection of health at work) /EU. 3. The implementation of SMS is voluntary, but the top management of SE declared its commitment to build quality management system in accordance with legislative requirements, international standards (including OHSAS 18001:2007) and IAEA recommendations so the SMS became obligatoty from the internal point of view. 4. Processes are implemented through the IMS documentation - SE/2/ZSM- 011 Occupational Health & Safety 5. Inspections, and independent internal audits. 6. SMS will be implemented as a part of the Integrated Management System (see chapter 4.4 of the National Report).

Q.No	Country	Article	Ref. in National Report
42	Germany	Article 10	

Question/ Comment	The following question is of special interest for Germany for the further development in this field. As this item may already be covered by your report or by other questions posted by Germany, we do not expect repetitions of information already delivered. Please just give additional information as appropriate. It was decided at the Third Review Meeting to discuss this topic at the Fourth Review Meeting. Is the principle of priority to safety laid down explicitly in any binding national law or is this principle met by a sum of regulatory requirements?
Answer	Yes, there exists Article 23 (1) of the Atomic Act No. 541/2004 Coll., which explicitly laid down the principle of the prime and exclusive responsibility for the

safety of nuclear installations resting with the licensee.
However, also implicit provisions of Article 10 (1) (a) of the Atomic Act should be mentioned, which laid down an obligation of the licensee to ensure nuclear safety, physical protection, emergency preparadness including verification thereof within the scope of the licence. Moreover, priority given to the safety aspects is underlined in Article 3 (4) of the Atomic Act, upon which "...in using nuclear energy, priority emphasis shall be given to safety over any other aspects of such activities..." Details on requirements for nuclear safety obliging licensee are specified in the UJD´ subordinated legislation, mostly in the regulation No. 50/2006 Coll. on requirements for nuclear safety.

Q.No	Country	Article	Ref. in National Report
94	Germany	Article 19.4	5.3, 106 ff.

Question/ Comment: It is said on p.110 that regarding SAMG the preparation of activities to put the management of severe accidents into practice is currently taking place. Does this preparation process comprise the update of existing PSA-1 and -2 including SAMG, taking into account also the plant modifications at Bohunice V-2, to be completed by 2008?

Answer: The PSA Level 1 and 2 have been updated at the beginning of 2008 for all units in operation. Because the SAMG have been developed for the anticipated status of the units – after the installation of necessary modifications – the models do not include these modifications. The PSA Level 2 will be updated as necessary during the SAM hardware installation period which will include also updating of SAMGs and optimisation for the actually installed hardware. The completion deadline of SAMG implementation for Bohunice units is the end of 2013.

Q.No	Country	Article	Ref. in National Report
99	Germany	Article 19.7	

Question/ Comment: Reference to the Summary Report of the 3rd Review Meeting, item 36, 38, 42 and 43

The following set of questions is of special interest for Germany for the further development in this field. As some of these items may already be covered by your report or by other questions posted by Germany, we do not expect repetitions of information already delivered. Please just give additional information as appropriate. It was decided at the Third Review Meeting to discuss this topic at the Fourth Review Meeting.

1. Which are the screening criteria for the internal and external experiences to be considered? (Are audits and reviews performed by external experts for controlling the effectiveness of OEF? Which procedures, committees etc. are established for the review and exchange of operating experience at the plant operator level and the supervisory level?)
2. How is the implementation of lessons learned from operational experience monitored?
3. How are operating experiences handled that are below the statutory reporting threshold?

Answer: 1. Plant screening criteria for industrial experience are based on WANO documents for operating experience programmes.
The OEF process from events has been established in accordance with IAEA and WANO expectations (ref.: PROSPER guidelines, NS-G-2.11, IAEA TECDOCs,

WANO GL 2003-1 etc). Effectiveness of OEF is periodically reviewed internally (quarter and annual self-assessment reports – trending of OE indicators, internal audits) as well as externally (WANO, OSART, National Regulatory Body inspections).
The priority goal of SE, a. s. in the OEF area is to minimise the number of events which meet the statutory reporting threshold (i.e. events with consequences). The organisation's preventive attitude is based on the use of opportunities to learn lessons by means of analyses and dealing with operational event precursors – low level events and near misses. Management of OEF from operational events defined by the Act No. 541/2004 Coll. (§27) and their precursors at SE, a. s. is performed in compliance with the internal procedures „Use of External Operating Experience" and „Feedback from operating events and their precursors". The procedures define organisation for reporting, screening and following processing of information about events – criteria for decision on the scope of investigation, taking corrective measures and monitoring of their fulfilment, as well as evaluation of effectiveness of the OEF system.

2. There is a committee established to approve the results of event investigations and to take corrective actions – a Committee of Operating Events and Selected Precursors. The Committee is a plant director's advisory body, it is a multi-profession group of staff members (heads of departments). Corrective measures based on external experience have the same level of importance as measures from our own events. The implementation of corrective measures from external sources is reviewed monthly.
The implementation of lessons learned is monitored through:
- The committee of operating events and selected precursor - fulfilment of taken corrective actions to all events
- Self-assessments – trending results (repetition of events due to deficiencies in implementation of previous lessons learned)

3. All operational events which meet the statutory reporting threshold as well as selected precursors (risk-significant precursors) are investigated into root causes. Other precursors (low or acceptable risk) are investigated into apparent causes. Corrective measures based on low level events and near misses have the same level of importance as measures resulting from significant events (see also Q No. 78).

See attached table

OVERVIEW OF THE SAFETY ISSUES IMPLEMENTATION AT BOHUNICE NPP V2 - UNIT 3 AND UNIT 4

2008

Issue No.	Issues Title	Issue Rank (EBP03)	*Status of the Implementation at NPP V2*	
			UNIT 3	UNIT 4
G	**General**			
G01	Classification of components	II	Completed/2002	
G02	Qualification of equipment	III	Completed/2007	Will be completed/2008 *
G03	Reliability analysis of safety class 1 and 2 systems	II	Completed/2003	
RC	**Reactor core**			
RC01	Prevention of uncontrolled boron dilution	II	Completed/2006	
CI	**Component integrity**			
CI01	Reactor pressure vessel integrity	II	Completed/2006	
CI02	Non-destructive testing	III	Completed/2004	
CI03	Primary pipe whip restraints	II	Completed/2006	
CI04	Steam generator collector integrity	II	Completed/2006	
CI05	Steam generator tubes integrity	II	Completed/2006	
CI06	Steam generator feedwater distribution pipe	I	Completed/2002	
S	**Systems**			
S01	Primary circuit cold overpressure protection	II	Completed/2006	
S02	Mitigation of steam generator primary collector break	II	Completed/2006	

Issue No.	Issues Title	Issue Rank (EBP03)	*Status of the Implementation at NPP V2*	
S03	Reactor coolant pump seal cooling system	II	Completed/2006	
S04	Pressurizer safety and relief valves qualification for water flow	II	Completed/2006	
S05	Emergency core cooling system (ECCS) sump screen blocking	III	Completed/2000	
S06	ECCS suction line integrity	II	Completed/2004	Completed/2005
S07	ECCS heat exchanger integrity	II	Completed/2004	Completed/2005
S08	Power operated valves on the ECCS injection lines	I	Completed/2004	Completed/2005
S09	Steam generator safety and relief valves qualification for water flow	II	Completed/2003	
S10	Steam generator safety and relief valves performance at low pressure	II	Completed/2003	
S11	Steam generator level control valves	I	Completed/2007	
S12	Emergency feedwater make-up procedures	I	Completed/2002	
S13	Feedwater supply vulnerability	III	Completed/2003	Completed/2004
S14	Main control room ventilation system	II	Completed/2004	Completed/2005
S15	Hydrogen removal system	II	Completed/2006	
S16	Primary circuit venting under accident conditions	II	Completed/2005	
S17	Essential service water system	II	Completed/2006	
I&C	**Instrumentation and Control**			
I&C01	I&C reliability	II	Completed/2006	
I&C02	Safety system actuation design	I	Completed/2007	Completed/2008
I&C03	Review of reactor scram initiating signals	II	Completed/2006	

Issue No.	Issues Title	Issue Rank (EBP03)	*Status of the Implementation at NPP V2*	
I&C04	Human engineering of control rooms	II	Completed/2006	
I&C05	Physical and functional separation between the main and emerg. co. ro.	II	Completed/2003	
I&C06	Condition monitoring for the mechanical equipment	I	Completed/2004	
I&C07	Primary circuit diagnostic systems	II	Completed/2006	
I&C08	Reactor vessel head leak monitoring system	II	Completed/2006	
I&C09	Accident monitoring instrumentation	II	Completed/2006	
I&C10	Technical support centre	II	Completed/2006	
I&C11	Water chemistry control and monitoring equipment (primary and sec.)	I	Completed/2007	Will be completed/2008 *
EL	**Electric Power Supply**			
EL01	Start-up logic for the emergency diesels	I	Completed/2005	Completed/2006
EL02	Diesel Generators reliability	I	Completed/2005	Completed/2006
EL03	Protection signals for emergency diesel generators	I	Completed/2005	Completed/2006
EL04	On-site power supply for incident and accident management	II	Completed/2006	
EL05	Emergency battery discharge time	II	Completed/2006	
C	**Containment**			
C01	Bubbler condenser strength behaviour at max. pressure difference possible under LOCA	III	Completed/2003	
C02	Bubbler condenser thermodynamic behaviour	II	Completed/2003	
C03	Containment leak rates	II	Completed/1997	Completed/1999

Issue No.	Issues Title	Issue Rank (EBP03)	*Status of the Implementation at NPP V2*	
C04	Maximum pressure differences on walls between compartments of hermetic boxes	II	Completed/2003	
C05	Peak pressure in containment and activation of subatmospheric pressure after blowdown	I	Completed/2003	
IH	**Internal Hazards**			
IH01	Systematic fire hazards analysis	II	Completed/2002	
IH02	Fire prevention	III	Completed/2004	
IH03	Fire detection and extinguishing	II	Completed/2005	
IH04	Mitigation of fire effects	II	Completed/2006	
IH05	Systematic flooding analysis	I	Completed/2002	
IH06	Turbine missiles	I	Completed/2002	
IH07	Internal hazards due to high energy pipe breaks	III	Completed/2004	
IH08	Heavy load drop	I	Completed/2002	
EH	**External Hazards**			
EH01	Seismic design	III	Completed/2007	Will be completed/2008 *
EH02	Analyses of plant specific natural external conditions	I	Completed/2002	
EH03	Man induced external events	II	Completed/2002	
AA	**Accident Analysis**			
AA01	Scope and methodology of accident analysis	II	Completed/2002	
AA02	Quality assurance of plant data used in accident analysis	I	Completed/2002	
AA03	Computer code and plant model validation	II	Completed/2002	
AA04	Availability of accident analysis results for supporting plant operation	I	Completed/2002	

Issue No.	Issues Title	Issue Rank (EBP03)	*Status of the Implementation at NPP V2*
AA05	Main streamline break accident analysis	I	Completed/2002
AA06	Overcooling transients related to pressurized thermal shock	II	Completed/2002
AA07	Steam generator collector rupture	II	Completed/2002
AA08	Accidents under low power and shutdown (LPS) conditions	II	Completed/2002
AA09	Severe accidents	I	Completed/2002
AA10	Probabilistic safety assessment (PSA)	I	Completed/2002
AA11	Boron dilution accidents	I	Completed/2002
AA12	Spent fuel cask drop accidents	I	Completed/2002
AA13	Anticipated transients without scram	I	Completed/2002
AA14	Total loss of electrical power	I	Completed/2002
AA15	Total loss of heat sink	I	Completed/2002

* Based on regulatory assessment significant progress has been made in their implementation. At unit 3 all issues are completed. However, outstanding regulatory requirements are going to be implemented at the 4th unit during outages.

HUNGARY

Convention on Nuclear Safety
Questions Posted To Slovakia By Hungary in 2008

Q.No	Country	Article	Ref. in National Report
5	Hungary	Article 6	2.2.2.2, p.29-30

Question/ Comment: Please describe briefly the technical modernization carried out in unit V-2 based on the results of the level 1 PSA!

Answer: Based on the level 1 PSA study results following modifications were implemented:
EFS – emergency feedwater system (3 redundant trains, fully separated and seismic qualified)
LPSI – modification of the pump recirculation line (to avoid tank overflow)
XL – power supply of bubbling system motor operated valves changed to II. category (DG)
PZR - power supply of MOVs for opening PORV and SV PZR was changed to provide 3 independent lines for B&F.
Replacement of electrical parts of start-up and internal automatics for diesel-generators, 6kV and 0,4 kV breakers, and bus-bar automatics.
All implemented modifications in modernization process were verified by PSA calculations.

Q.No	Country	Article	Ref. in National Report
6	Hungary	Article 6	2.4.1, p.41

Question/ Comment: How is the interim storage of spent fuel of the Mochovce NPP planned?

Answer: The existing interim spent fuel storage at the Bohunice site (owned by the company JAVYS, a. s.) has sufficient storage capacity for spent fuel produced by Bohunice NPP Units 1-4 and Mochovce NPP Units 1-2 up to 2017. A new additional storage facility for NPP Mochovce is presently not needed and has been postponed.

Q.No	Country	Article	Ref. in National Report
82	Hungary	Article 16.1	4.7.6.1, p.99

Question/ Comment: What are the extreme situations when it is planned to use the Backup emergency centre (BEC)?

Answer: The reasons why to use the Backup emergency centre are an extremely severe radiation situation at NPP´s areas and their surroundings, or damaged entries into the on-site emergency response centre. In case when the emergency situation on NPP is declared, the emergency commission gathers in the emergency response centre. The emergency response centre is used as a working place of the emergency commission always during daily working time of the working days. During non working time and weekend days, the working place of the emergency commission is the back-up response centre. Depending on habitability conditions of the emergency response centre, the chairman of the commission may decide to move the commission into the back-up response centre. Both centres are permanently ready for use.

JAPAN

Convention on Nuclear Safety
Questions Posted To Slovakia By Japan in 2008

Q.No	Country	Article	Ref. in National Report
26	Japan	Article 7.2.1	Page 52, Fig.3.1.2

Question/ Comment: Figure 3.1.2 shows the public involvement in the nuclear installation authorization procedure. How are the public's opinions collected? How does the Nuclear Regulatory Authority consider the public's opinions?

Answer: UJD performs the activities of the civil construction authority in case of siting and construction of nuclear installation from December 1, 2004 when the new Act No.541/2004 Coll. on Peaceful use of nuclear energy (”Atomic Act”) and on amendment and alterations of several acts came into force. Since that time UJD has not issued any permission for siting of nuclear installation so it has not have any experience with involving public to the authorisation process.

Generally, environmental impact assessment of the nuclear installation is one of documents which is needed for issuing of permission for siting of nuclear installation based on Atomic Act. Report on environmental impact assessment of the nuclear installation is prepared by applicant under the Act on environmental impact assessment and should be open for public and stakeholders involved at least 21 days. Comments are collected and are taken into consideration by respective organ (Ministry of Environment) at the process of reviewing of report on environmental impact assessment. Recommendations made by respective organ together with collection of comments from public are sent to the Nuclear Regulatory Authority which evaluates them whether they are appropriate and acceptable or not.

Q.No	Country	Article	Ref. in National Report
31	Japan	Article 8.1	Page 53, 3.1.3.2

Question/ Comment: Page 53/130, "3.1.3.2 Regulatory Authority - UJD"
UJD has 82 employees, as of May 1, 2007. Does UJD have any technical support organization?

Answer: The regulator (UJD) does not have a technical support organisation for its own purposes. Within the structure of UJD there is a Division of Safety analyses and Technical Support which fullfils the task of a „technical support organisation“. Hovewer its cababilities are limited (7 experts). Therefor external technical support organisations are used without jeopardising the regulator´s independent technical opinions.

Q.No	Country	Article	Ref. in National Report
44	Japan	Article 11.1	P73, 7th line frm btm

Question/ Comment: Page 73/130, 7th line from the bottom.
Section 4.2.5 describes that the education, stabilization and care are important factors to ensure UJD's high performance. What kind of human resource development program does UJD have?

Answer: In the area education UJD utilizes all sorts of education. The management of the whole education process at UJD is realized by means of chairperson order, in which are planned education activities for relevant year. The education is divided according to themes to several parts -economy, legislation, informatics, language courses and special education for inspector positions.

As regards the stabilization of personnel an important step was done in the area of budgeting (see chapter 4.2.5 of the National Report and Question No. 30).

Q.No	Country	Article	Ref. in National Report
59	Japan	Article 12	P 75, 4th line

Question/ Comment: Page 75/130, the 4th line form the top.
Section 4.3 describes that one of the operator's activities to minimize negative influence of human factors is observance of principles of safety culture. Does UJD check the operator's safety culture as a part of its inspection? If UJD does it, how does it check the safety culture of the operators?

Answer: UJD checks the operator’s safety culture as a part of other routine and special inspections.

PAKISTAN

Convention on Nuclear Safety
Questions Posted To Slovakia By Pakistan in 2008

Q.No	Country	Article	Ref. in National Report
17	Pakistan	Article 7.1	Section 3.1.23, Page 47

Question/ Comment: Does the regulatory body utilize any independent advisory bodies for consultation and advise ?

Answer: Yes, UJD relatively frequently makes use of services of independent advisory bodies for consultation (mainly Technical support organizations and universities). Examples: In the cases of I&C we cooperate with VUJE as an independent advisory and consultant organization. For consultancy and advice concerning measurement problems we are in touch with Slovak institute of metrology.

Q.No	Country	Article	Ref. in National Report
18	Pakistan	Article 7.1	Section 3.12, Page 48

Question/ Comment: Have are the offences and the corresponding penalties defined?

Answer: The violations of law are defined as administrative delicts (for legal entities) or offences (for natural persons). Administrative delicts and offences and their sanctions are laid down in Article 34 of the Atomic Act No. 541/2004 Coll in such way that each provision specify subject matter of a delict or an offence by appealing to another provisions of the Act (defining obligations or basic principles), and, corresponding maximum inflictable amount of penalty, as well. For example, "...a fine of up to SKK 10.000.000 shall be imposed by the Authority upon authorization holder who has violated his responsibilities under Article 10..." and in Article 10, there are laid down the obligations of the authorisation holder explicitly.

Q.No	Country	Article	Ref. in National Report
19	Pakistan	Article 7.1	Section 3.1.2, Page 47

Question/ Comment: Define how the public and other bodies are involved in the regulatory process?

Answer: UJD as a central governmental body is obligated to fulfil the Freedom of Information Act, which came into effect in Slovakia on January 1, 2001. Act governs the procedure which ensures everyone free access to official documents possessed by central governmental bodies, local government bodies and other entities of public law. Everybody can ask for documents held by these bodies and can get information on their contents.
Most of the documents of the central administrations are open for public mainly on their websites. This includes also information about competencies and activities of central governmental bodies, including decision making process. Conceptual and strategic materials made by governmental bodies should be published and open for the public as well.
The Slovak government approved, besides the Freedom of Information Act, governmental decrees based on which central governmental bodies should publish drafts of all documents intended to be approved by the Slovak government on their website for comments of other govermental bodies and general public. Comments of governmental bodies or public coming from more than 300 (500 in case of legislative materials) natural or legal persons should be taken into consideration. Comments are collected and are taken into account by redrafting the document.
The main area where UJD may interact with the public are nuclear legislation

(laws, regulations, safety guides, existing or still in the drafting process), nuclear authorisation process (safety assessments related to siting of installation, operation, modification, decommissioning…) and nuclear supervision (regulatory inspections, inspection findings, regulatory assessments). Each administrative procedure maintained in UJD is open for public.
Since decisions are one of the most important result of a regulatory activities conducted in the field of regulation, assessment, supervision or enforcement, full texts of all decision are placed on its website and copy of them can be given to everybody at the request . However it is not possible to make available the licensee's supporting document, which are part of official decision making process or fall under other restrictions like proprietary, personal data, national security etc.
Operators, selected stakeholders and technicians are invited in drafting process of appropriate regulating documents to make comments. Comments are reviewed and their adequacy is evaluated.

Q.No	Country	Article	Ref. in National Report
20	Pakistan	Article 7.1	Section 3.2, Page 59

Question/ Comment: How does the operating organization as licensee retain prime responsibility for safety when it delegates authority to the plant management for the safe operation of the plant?
In such cases what resources and support does the operating organization provide for the plant management?

Answer: In relation to SE, a. s. the Board of Directors as the statutory body of the company has the basic responsibility for nuclear and radiation safety. The director of operation and maintenance division at the headquarter has the overall responsibility for meeting requirements for nuclear safety in accordance with the Atomic Act. It means that he is responsible for meeting and controlling principles of nuclear, radiation, industrial, fire and environment safety, stated in Safety Policy.
The plant director is liable for ensuring nuclear and radiation safety in operation of the plant, i.e. for controlling activities necessary for safe plant performance. The Board of Directors delegates to plant directors the right to request for needed resources (material, financial, human) to ensure nuclear and radiation safety.
Within the integrated management system mechanisms necessary for ensuring, checking and assessment of nuclear safety are established and competences and responsibility distribution among particular management levels are stated.
Monitoring and assessment of nuclear safety is performed also by the independent nuclear oversight department with right access to the general director.

Q.No	Country	Article	Ref. in National Report
21	Pakistan	Article 7.1	Section 2.1.2.4, Page 20, 21

Question/ Comment: Has UJD developed some requirements for the submission of Probabilistic Safety Assessment (PSA), Symptom based Emergency Operating Procedures (SEOPs) and Severe Accident Management Guidelines (SAMGs)?

Answer: Act No.541/2004 Coll. (Atomic Act) and set of Decrees according to the Atomic act define the legal framework for the PSA performance and its applications in Slovakia. The PSA study is required as an integral part of the documentation submitted to the UJD within the administrative proceedings. The PSA has to be regularly reviewed and updated as a part of the periodic safety review of the nuclear installations, and always if
(a) there has been a significant change in the design of the nuclear installation,
(b) there has been a significant change in the operating procedures,

(c) a new significant risk has been identified.
DECREE No . 50/2006 on laying down details of the requirements for nuclear safety of nuclear installations during siting, design, construction, commissioning, operation, decommissioning and closure of storage sites, and also the criteria for the categorisation of selected installations into safety classes contains requirements concerning beyond design basis accidents specifying:
• definitions of events including beyond design basis accidents
• requirements for control of the nuclear installation also for selected serious accident
• requirements for basic safety functions also during selected serious accidents
• needs to evaluate of combinations of individual random events which might result in abnormal operation or emergency conditions
• list of scenarios to be analysed for emergency conditions
• acceptability criteria of their analyses
• aspects to be used for selection of elected serious accidents
• requirements for emergency control centre
• requirements for qualified instruments in case of selected serious accidents
The UJD has issued the regulatory guidelines. These complete and specified the requirements of generally binding legal documents with regards to the regulatory body policy, used methods, criteria (goals), provided information, inputs, outputs, etc.

Q.No	Country	Article	Ref. in National Report
22	Pakistan	Article 7.1	Section 3.1.2.1,Page 47

Question/ Comment: What is the contribution of the regulatory authority in the preparation of Legal acts, Governmental ordinances, Regulations (decrees) and edicts etc. And how licensee and general public are involved in the preparation process? How is the licensee feed back incorporated in the revision/amendments of acts, ordinances, regulations etc.

Answer: UJD is a central administrative agency. All ministries and other central administrative agencies are governed by the general Competence Act No. 575/2001 Coll. on organization of the Government activities and on organization of the central State Administration, upon which they are oblige to prepare an appropriate draft legislative proposal of relevant matters falling within their competence. Therefore, also UJD prepares and submits to the Government draft laws and introduces them in the parliament. Upon the provisions providing a legal authorisation, UJD is entitled to issue regulations as subordinated legislation. All of the above-mentioned legislation is prepared by UJD itself based upon its competence, and, is introduced and promoted by UJD at the Government Legislative Council, in the Government itself and in the parliament. When preparing new legislation, UJD is in close cooperation with the research institutes, as well as, the authorisation holders are consulted on a regular basis. Even the public is allowed to participate in preparation of new legislation during official notification procedure that is held at inter-ministerial level and when the drafted legislation must be published at UJD´ and Government Office´ web page, as well. Licensees provide UJD usually with the feedback from their own implementation praxis where comments, identification of some unexpected implications, observations and proposals to improve legislation are usually received in regard to the new legislation under preparation.

Q.No	Country	Article	Ref. in National Report
23	Pakistan	Article 7.1	Section 3.1.2,Page 47

Question/ Comment: Has a procedure been establish for the review of, and appeal against, regulatory decisions (without compromising safety)?

Answer: UJD issues decisions within the framework laid down by the general Administrative Procedure Act No. 71/1967 Coll. as amended. The first instance administrative decision is appealable by a remonstrance, upon which the UJD´ chairperson shall decide. Chairperson´ second instance decision is final and it is not possible to use any further ordinary administrative remedy. Final UJD decision is reviewable by an administrative court upon basis of lodging an administrative action at the regional court (exceptionally at the Supreme Court) pursuant to Civil Proceedings Order No. 99/1963 Coll. (administrative jurisdiction provisions). As UJD is a central state agency, the regional court is the competent first instance court. The regional court is entitled only to review the lawfullness of final decision issued by the UJD, and, at any time, it is not authorized to modify or change the decision´s substance of matter. In the last resort, it may only uphold the UJD decision by dismissing an action, or, revoke an earlier UJD´s final decision only.

Q.No	Country	Article	Ref. in National Report
32	Pakistan	Article 8.1	Section 3.1.3.3,Page 53

Question/ Comment: Is the Regulatory Body self-sufficient in all technical and functional expertise? If not, how does it seek advice or assistance that is independent of the license holder?

Answer: Te UJD has about 82 employees. Most of them represent experts within the specific technical and/or functional fields corresponding to their position within the organizational structure (e.g. Division of Evaluation and Control of Nuclear Safety, Division of Nuclear Materials, Division of Emergency Preparedness, Informatics and Personal Training, etc.). Seven experts of the Division of Safety Analyses and Technical Support are involved in the specific tasks related to performing of independent safety analyses and review (both deterministic and probabilistic analyses). The current number experts and UJD capabilities to perform technical and functional expertise is considered sufficient. For specific topics for which the corresponding expert is not available at UJD, an external technical support is arranged through co-operation and contracts with technical organizations and/or universities from Slovakia or other countries. In some cases a support from the IAEA, OECD/NEA, EK or regulatory bodies of the countries operated WWER reactors is arranged.

Q.No	Country	Article	Ref. in National Report
33	Pakistan	Article 8.1	Section 3.1.3.2,Page 53

Question/ Comment: How does the Regulatory Body ensure that it employs a sufficient number of personnel with the necessary skills to undertake its functions and responsibilities?

Answer: As regards the Nuclear Regulatory Authority – UJD, this very important aspect is described in para 4.2.5 of the National Report. As in many situations the financial resources are the key to the success. ÚJD is by its incomes and expenditures connected to the state budget. „Draft model of alternative financing of the Nuclear Regulatory Authority of the Slovak Republic involving partial use of sources other than the state budget“ was submitted to the Slovak Government and was approved by the Slovak Government on the 1st of March 2006 by its Resolution No. 204/2006. The Act on Alternative Financing was passed by National Council of SR on 7. 2. 2007 and entered into force on 1. 1. 2008. The merit of the proposal is that the holders of authorizations, issued according to the Atomic Act, pay prescribed contributions to the state budget, which will be within the activity of UJD divided for purposes of the regulation execution. The sum of annual contribution is dependant upon the type of nuclear facility and type of issued authorization. This

budgetary measure should assure a sufficient number of personnel with the necessary skills to undertake UJD´s functions and responsibilities.

Q.No	Country	Article	Ref. in National Report
38	Pakistan	Article 9	Section 3.1.1

Question/ Comment: How is it ensured that there are no responsibilities assigned to the regulatory body that may jeopardize or conflict with its responsibility for regulating safety?

Answer: Chapter 3 of the National Report describes in detail this question. For example Act No. 575/2001 Coll. on Organization of Governmental Activities and of Central State Administration as amended (so called Competence Act) defines the framework of tasks and responsibilities of central state administration authorities. The provision on UJD is in § 29 of the valid Competence Act. UJD (Nuclear Regulatory Authority) is a central state administration authority. It provides the execution of state regulatory activities in the field of nuclear safety of nuclear installations, including regulation of management of radioactive waste, spent fuel and other parts of the fuel cycle, as well as transport and management of nuclear materials including their control and record keeping system. It is responsible for the assessment of goals of nuclear energy program and of quality of the classified equipment, as well as for commitments of the Slovak Republic under international agreements and treaties in the said field.
Para 3.1.3.2 of the National Report: UJD is an independent state regulatory authority that reports directly to the Government and is headed by a Chairman appointed by the Government. The regulatory authority's independence of any other authority or organization engaged in the development and utilization of nuclear energy applies in all relevant areas (legislation, human and financial resources, technical support, international cooperation, enforcement instruments). Pursuant to the Act No. 541/2004 Coll., UJD is authorized to draft generally binding legal provisions in the field of nuclear safety (acts, decrees). Besides that, ÚJD issues safety guidelines. UJD´s budget comprises a part of the state's budget. ÚJD has financial and human resources capacities for independent safety analyses and technical support.

Q.No	Country	Article	Ref. in National Report
43	Pakistan	Article 10	Section 4.1.2 ,Page 64

Question/ Comment: What are the means to assess the adequacy of material and financial resources to deliver safety goals, safety requirements, fundaments & principles and to improve staff education and skills?

Answer: The provision of adequate material and financial resources in connection with the enhancement of the level of personnel education and skills means that the company management guarantees needed resources (namely financial, human and material) in compliance with declared strategies and policies in particular areas (safety, quality, management of human resources, training) so that personnel training can be performed without problems from the point of view of planned educational activities and so that it is always ensured that the personnel received necessary education and training for competent performance of position/function (basic as well as periodic training). The personnel educational and training plan is checked from time to time within calendar year and its fulfilment from the subject and financial point of view is audited by the company management as well as plant management.

Q.No	Country	Article	Ref. in National Report
45	Pakistan	Article 11.1	Section 4.1,Page 63

Question/ Comment: How is it ensured that all activities that may affect safety are performed by suitably qualified and experienced persons?

Answer: The check of the fulfilment of required qualification and working skills for individual working functions/positions, performed by superiors of their subordinate workers, ensures that all activities which can influence nuclear safety and industrial safety are performed by qualified and experienced personnel. Simultaneously, this check is done also by the human resources development and education department. That ensures that every employee of the company is competent to fulfil his/her mission. At the same time, the competence of the personnel is checked by internal audits (once every three years in the human resources development and education department and within every internal audit in other units) and by regular yearly inspection made the regulator in the are of training and qualification of personnel of the licence holder, i.e. SE, a. s. (see chapter 4.2.3 of the National Report).

Q.No	Country	Article	Ref. in National Report
46	Pakistan	Article 11.1	Section 4.2.3 ,Page 67

Question/ Comment: How is operating experience of events at the plant and relevant events at other plants factored into the training programme?

Answer: Training programs are regularly amended and training includes recommendations from the feed-back group, events from the homesters and from other nuclear power plants, requirements of operational division and nuclear safety department as well as requirements of staff to add, e.g simulator training.
Training programs are being maintained in the up-to-date state.
The information from external databases (WANO, IRS) are screened and distributed to the relevant specialists for analysis. The results of analysis are handled according to prescribed process. Shift staff is regularly trained every quarter from selected events (WANO, another plants).
SE - The human resources development and education department regularly includes all significant operating events (but also near misses), in which human factor took share, into training of shift as well as daily personnel, based on recommendations of the Committee of operating events and selected precursors. Significant operating events which occurred at external NPP operators or other fields of industry (non-nuclear) are also included in training. The “Operating Experience Feedback unit” requires and control the use of these events (including events marked as SE, a. s. and SOER in WANO, INPO or IAEA recommendations).

Q.No	Country	Article	Ref. in National Report
47	Pakistan	Article 11.1	Section 4.6, Page 87

Question/ Comment: How does the operating organization ensure that the radiation protection function in its organization has sufficient independence and resources to enforce radiation protection regulations, standards and procedures, and safe working practices?

Answer: The operators has ensured sufficient independence and resources for enforcing radiation protection regulations, standards and procedures, and safe working practices by creating in the radiation protection units in the safety departments in both NPPs. Thus the radiation protection units are independent from operation and maintenance. Radiation protection findings are taken into account in decision making process and are weighted against production and operation (ALARA decision). Health physicists are closely connected to and cooperate with Public Health Authority of the Slovak Republic.

Q.No	Country	Article	Ref. in National Report
48	Pakistan	Article 11.1	Section 4.3.2,Page 75

Question/ Comment: It is stated in the report "Operating and Maintenance staff performs activities according to the approved documentation.." Please explain how this activity is verified / monitored and how the general result of this activity is analyzed?

Answer: The question need to considered in two aspects:
Operational activities – performed by operators according to the operational documents. These are recorded in Log books. The records are checked by:
- foreman
- process engineer
- head of the operator
- system engineer
- Above persons analyse consistency of the records with operating documentation.

Maintenance activities – they are performed according to the requirements of the system engineers. Basis for all activities is the relevant order (R-order, B-order, etc.)
In the case of non standard actions, they are performed according to Operative programmes, which need to be approved before action. After performance of such activities all programmes are evaluated, including analysis of the effectiveness of the action.

Q.No	Country	Article	Ref. in National Report
68	Pakistan	Article 14.1	Section 4.3.2,Page 76

Question/ Comment: It is stated that "B-Order is issued in addition to S-order for work on electrical equipment of high and extra high voltage". Please explain that how other industrial safety issues are handled?

Answer: Other industrial safety issues, i.e. safety and protection of health at work, are covered by S-order. Moreover, in cases when risk of fire is expected, fire protection order is issued and if there is a risk of actuation of safeguard systems, "A" order is issued.
Before starting works, the supervisor of works performs briefing in which he warns of risks, work safety and he gives instructions concerning safety and health protection at work and use of protective means (see Q No. 48).

Q.No	Country	Article	Ref. in National Report
69	Pakistan	Article 14.1	Section 4.5.8,Page 86

Question/ Comment: Reference Section 4.5.8, SPI activities are discussed but Self-assessment (SA) activity is not discussed , only TECDOC 1125 is referred. Please elaborate SA activities ?

Answer: Self-assessment (SA) activity are performed in line with TECDOC 1125 and WANO GL2001-07 at several levels :
- Independent internal assessment (QA department audits)
- Management& Supervision (NPP weekly performance indicators, Event committee, Nuclear safety committee)
- Group Self-assessment (performance criteria of departments)
- Individual & Work Group (STAR, pre job briefings, JIT applications, Job task observations)

Processes described in the Phase Programme of Quality Assurance are regularly assessed (monthly, quarterly, yearly) with the aim to examine the effectiveness and efficiency of approved measures on the basis of determined criteria. Moreover, there are supporting assessments as reports on feedback, surveillance programmes, reports on general overhauls, reports on staff training, safety culture etc.

Q.No	Country	Article	Ref. in National Report
83	Pakistan	Article 16.1	Section 4.7,Page 91

Question/ Comment: What arrangements have been made to provide a response to a nuclear or radiological emergency for which detailed plans could not be formulated in advance?

Answer: All protective measures are defined beforehand and described in On-site and Off-site Emergency Plans. There are mainly:
- warning and notification (NPP personal and public in the emergency planning zone))
- providing iodine prophylaxis, individual protective means
- sheltering and evacuation
- on-site and off-site monitoring of the installation and the environment
- decontamination of persons and subjects
- prohibition to consume unprotected food, water etc.

Q.No	Country	Article	Ref. in National Report
86	Pakistan	Article 17.1	Section 4.5.1,Page 82

Question/ Comment: How in modernizing, seismic resistance can be enhanced?

Answer: Seismic resistance of SCC was enhanced during Modernisation Programme MOD NPP-V2 in following steps:
1. issuing seismic input data for the V2 NPP site (confirmed by the IAEA mission)
2. creation of the seismic scenario for NPP V2
3. elaboration of SSEL list of the components and equipment
4. the particular designs were elaborated with follow-up realisation under the Modernisation Programme MOD NPP V2 (2002-2007)
5. after the implementation of particular realisation tasks, visual inspections were performed subsequently.

Q.No	Country	Article	Ref. in National Report
91	Pakistan	Article 19.1	Section 5.3.5.3,Page 116/117

Question/ Comment: Reference: 5.3.5.3 , Pict. 5.3.2 shows a significant improvement with an overall decreasing trend, however Pict 5.3.1 shows an increasing trend. Why is the trend increasing for Brochure (V-1 & V-2) and what steps are being taken to arrest this increasing trend?

Answer: Picture 5.3.1 shows the number of events reported at Bohunice 1,2 (V-1 plant) and Bohunice 3,4 (V-2 plant) since 1999. Significant events are marked by yellow colour (trend is decreasing), low level events are red. The increasing trend of low level events means that NPP has an effort to prevent occurrence of significant events by solving low level events. This is general expectation of plant management to report all low level events and near misses and solve their causes. As a result of this is a positive trend (decreasing) of significant events.

POLAND

Convention on Nuclear Safety
Questions Posted To Slovakia By Poland in 2008

Q.No	Country	Article	Ref. in National Report
7	Poland	Article 6	1.2 page 12
Question/ Comment	Figure No. 1.2.2 Development of consumption and structure of electric power production in the Slovak (page 12) presents two columns of shares adding up to 100% marked with different colours, but there is no explanation of the meaning of those shares. Could you please add explanation to the picture?		
Answer	The share of power sources in 2006 is as follows: Industrial (green) 2 832 GWh Hydro (blue) 4 447 GWh Thermal (Brown) 5935 GWh Nuclear (yellow) 18 013 GWh Exports (red) – 1603 GWh		
Q.No	Country	Article	Ref. in National Report
8	Poland	Article 6	1.2 page 14
Question/ Comment	The project Restructuralisation of the company SE, a. s. is described in page 14, but no details concerning “integration of the company SE, a. s. to the company Enel S.p.A” are given. Could you clarify the actual situation in this respect?		
Answer	On 28 April 2006, the privatization of the Slovenské elektrárne, a.s., i.e. of 66% stake, was finally completed. In accordance with the contract completed in February 2005, assets relating to the management of spent fuel, the Nuclear Power Plants V-1 Jaslovské Bohunice and the Gabèíkovo Water Work power plants were spun off of SE, a. s. In 2006 the “Central Function Turnaround” project has started with the goal to reduce the number of management levels and set-up the processes. In 2007 Company implemented the software product SAP (Systems, Applications and Products in Data Processing) for enterprise software applications.		
Q.No	Country	Article	Ref. in National Report
9	Poland	Article 6	2.2.2 page 28
Question/ Comment	WENRA stated in its report “Nuclear safety in EU candidate countries”, October 2000 that: “…Once the ongoing upgrading measures have been implemented, i.e. around 2002, the safety level of these units is expected to be comparable to that of the Western European reactors of the same vintage." Which upgrading measures are still to be implemented?		
Answer	All planned upgrading measures from the Bohunice V-2 Modernisation Programme (MOD V2) will have been implemented by 2008. Next activities at NPP V2 are connected with the implementation of measures concerning SAMG, power uprating and lifetime extension.		
Q.No	Country	Article	Ref. in National Report
10	Poland	Article 6	page 28
Question/ Comment	A project aimed to apply the in-vessel retention strategy using reactor pit flooding under SAMG´s is implemented by the company IVS Trnava and VÚEZ Levice during 2003 – 2004. (page 28)… This project was implemented by company VUJE, a. s. Trnava during the period 2005 – 2006. •Has it been finished and fully implemented? •If yes, it means a significant safety improvement in WWER 440/213 units. After		

Loviisa, which was the first NPP with WWER 440 unit to introduce this idea, this would be the case of implementing external reactor pressure vessel cooling in WWER 440/213 in units provided with bubbler condenser containment. Does Slovak Republic intend to propose sharing its experience in this area with other countries, in particular those that operate WWER 440 units?

Answer The analytical part of the project has been completed. The preparation of the detailed design of the necessary hardware provisions is underway. The installation of the hardware provisions (modifications) is a component of stepwise implementation of the SAM which is planned to be completed by the end of 2013 at Bohunice V-2 units. The experience gained in the analytical activities performed so far can be partially shared in a proper form, not compromising the legal restrictions related to intellectual property of the authors.

Q.No	Country	Article	Ref. in National Report
11	Poland	Article 6	2.3.2.2 page 36

Question/ Comment It is inevitable to perform hardware modifications, especially in the field of hydrogen control and control of extern cooling of reactor pressure vessel and others. In view of the significant improvement of plant resistance to severe accidents that will be achieved after introducing external cooling of the reactor pressure vessel, this project seems to be most important for the upgrading of Mochovce safety. What is the planned timetable of its implementation?

Answer The implementation of SAM will be an integral project for four units in operation. The timing of the installations of individual modifications in Bohunice V-2 Units and Mochovce Units 1,2 has not been established yet. The completion deadline for Bohunice V-2 has been defined in the frame of Periodic Safety Review (in the Integral plan of improvement measures) as end of 2013. The completion date for Mochovce Units 1,2 has not been determined yet.

Q.No	Country	Article	Ref. in National Report
49	Poland	Article 11.1	4.2.2 page 66

Question/ Comment The report says that "In accordance with the provisions of the Act, the authorization holder for operation of a nuclear installation is obliged to pay a sum of SKK 350,000 a year to the NNF´s account for every megawatt of installed electricity capacity of the operated nuclear installation and 5.95 % of the purchase price of electricity generated at that nuclear installation in the passed year. (page 66)… In years 2005 – 2006 Slovenské elektrárne has paid contributions in total sum of SKK 4,111 billions to the fund."
Comment:
Alongside with Mexico, this is another report which clearly states how much the nuclear operator pays into the decommissioning fund. This is most valuable for the countries which are going to start their own nuclear power development programmes.

Answer Indeed, the introduction of nuclear energy is a vety complex matter in particular in the area of human and financial resources.

Q.No	Country	Article	Ref. in National Report
76	Poland	Article 14.2	4.5.1. page 82

Question/ Comment "Unit 3. and 4. of NPP Mochovce are in construction. … In years 2003-2005 a safety concept was devised in relation to completion of Units 3. and 4., with the effort to reflect the measures for project safety, performed at Unit 1. and 2. … In March 2007, a resolution on completion of Units 3. and 4. of NPP Mochovce with time horizon until 2012 has been passed"

Questions:
•Will the new units include from the very start all the safety improvements being introduced into units 1 and 2?
•Will they also be provided with external reactor pressure vessel flooding system?

Answer This NPP is by definition not subject of the CNS. However Slovakia is ready to provide the following information:
Licensee submitted to UJD for information list of all safety improvements that intends to realize on Mochovce unit 3 and 4. UJD assessed and compared this safety improvements with those that were implemented on Mochovce unit 1 a 2 and can confirm that all these safety improvements will be realized also on Mochovce unit 3 and 4. In addition on Mochovce unit 3 and 4 also safety improvements needed for control of severe accident under procedure SAMG will be implemented. One of the new safety improvements is the realization of system for external reactor pressure vessel flooding.

ROMANIA

Convention on Nuclear Safety
Questions Posted To Slovakia By Romania in 2008

Q.No	Country	Article	Ref. in National Report
55	Romania	Article 11.2	

Question/ Comment: Could you please describe the measures, if any, taken at national level for knowledge management and preservation in the nuclear field.

Answer: There is no special legal provision concerning knowledge managementand conservation at present on state level. In spite of this the Electrotechnical Faculty of Slovak Technical University initiated, on international level, a project concerning the maintenance of know-how of nuclear power use for further generations in individual states which use or plan to use nuclear energy. Know-how maintenance touches not only nuclear energy but it deal also with all relevant industry branches supporting design, construction, operation and decommissioning of nuclear installations. This initiative started approximately two years ago and since that time several expert meetings have been held.

Q.No	Country	Article	Ref. in National Report
62	Romania	Article 13	

Question/ Comment: Could you please describe the principles followed by the NRA (UJD) in the review of organizational changes that were made as part of the restructuralisation of Slovenské Elektrárne company.

Answer: The main principles followed by UJD are laid down in Act 541/2004, § 10 Duties of the authorization which inter alia:

(1) Within the scope of the permission or authorization, the authorization holder shall be liable to
a) ensure nuclear safety, physical protection, emergency preparedness, including verification thereof,
b) observe documentation reviewed or approved by the Authority; any deviations from the documentation is allowed after preceding re-assessment or approval by the Authority,
c) continuously and comprehensively evaluate the compliance with the principles mentioned in § 3 Sec. 3 through 5 and to ensure the practical implementation of the evaluation results,
d) adhere to the conditions of the permission or authorization, to investigate without any delay any violation of the these conditions and to take remedial measures and to prevent such violations from their repeating,
e) observe with the limits and conditions of safe operation or limits and conditions of safe decommissioning; the Authority shall be notified, without any delay, of their violation, failure to adhere to them or their exceeding,
f) observe with the technical and organizational requirements laid down by the generally binding legal regulations,
g) render, upon the Authority carrying out inspection activities, Authority inspectors the necessary assistance pursuant to the specific regulation) to provide inspectors with personal protective means to be able to carry out inspection activities, to render necessary assistance to persons invited by the Authority for evaluation of issues related to the performance of the inspection activities, allow access to the necessary documentation or provide other information under Authority's competence at Authority's request, even if they do not relate to the

inspection activities,
h) enable management of nuclear material, radioactive waste and spent fuel only to authorization holders for management thereof pursuant to this Act,
i) appoint only persons who meet the requirements mentioned in § 24, to perform working activities; and in case of persons performing activities pursuant to the special regulation6) to ensure the verification of their competency in accordance with this special regulation,
j) reimburse the Authority costs connected with the verification of special professional competency,
k) notify the Authority without any delay of any modification as mentioned in § 2 letter v),
l) submit to the Authority any modification as mentioned in § 2 letter u) for permission or approval , at least one month prior to its foreseen implementation,
m) inform the public about the nuclear safety assessment status,
n) inform the Authority without any delay of the declaration of insolvency or rejection of insolvency proceedings because of lack of assets,
o) submit to the Authority classification of nuclear installation and nuclear material into the respective categories concerning the physical protection,
p) work out preliminary on-site on site emergency plan, on-site on site emergency plan as well as source documents for off-site emergency plan and emergency transport order,
q) notify the Authority demonstrably and without any delay, about interventions taken with the aim of averting incident, accident or remediation of their consequences,
r) notify, in accordance with the approved physical protection plan, the Authority in writing of any aviation activities at nuclear installation premises and in their immediate vicinity.
(2) The authorization holder pursuant to § 5 Sec. 3 letters b) through e) shall be liable to submit to the Authority sufficiently ahead of time prior to the expiration date of authorization, while taking into account the deadlines pursuant to the § 8 Sec. 6 and 7, the application and relevant documentation for issue of authorization for the relevant activity to be continued. …..
(3) The authorization holder shall be liable to notify the Authority in writing of any changes in facts on the basis of which permission or authorization were issued and of any facts which might result in modification or cancellation of the permission or authorization. Such notification shall be made within 15 days of the occurrence of such change.
(4) The authorization holder shall be liable to also comply with additional duties as specified in this Act.

Q.No	Country	Article	Ref. in National Report
70	Romania	Article 14.1	

Question/ Comment: What evaluation does the NRA request to satisfy itself that the equipment of Mohovce Units 3 and 4 was/is adequately conserved and that its status allows the safe commissioning and operation of the units?

Answer: This NPP is by definition not subject of the CNS. However Slovakia is ready to provide the following information:
The licensee has to submit under Atomic act to UJD before commissioning of Mochovce units 3 and 4 an actual safety analyses report (SAR). This report will be assessed by UJD itself and other independent support organizations that will be contracted by UJD for assessment of SAR. This report has to prove that requirements for safety during commissioning and operation of Mochovce unit 3

and 4 are adequately addressed. During assessment of SAR UJD will assess the fulfillment of all legislative requirements specified in Atomic law No. 541/2004 and relevant Regulations issued by UJD. Also UJD will assess fulfillment of conclusions of document IAEA Safety Issues and Their Ranking for NPP WWER 440/213 model, WWER-EBP-03 issued in April 1996 by IAEA and missions that were done before restart of completion works on Mochovce unit 1 and 2 and other relevant safety standards of IAEA.

Q.No	Country	Article	Ref. in National Report
71	Romania	Article 14.1	

Question/ Comment: Please describe the NRA requirements and envisaged process for licensing and control of activities during commissioning of Mohovce Units 3 and 4.

Answer: This NPP is by definition not subject of the CNS. However Slovakia is ready to provide the following information:
Requirements for licensing and control activities are specified in Atomic law 541/2004. Before start up of commissioning of NPP licensee has to submit to UJD following documents for assessment or approval:
a) limits and conditions of safe operation,
b) list of classified equipment as classified into safety classes,
c) testing programs of classified equipment as determined by the Authority,
d) nuclear installation commissioning programme, divided into stages,
e) operational control programme of classified equipment,
f) quality system documentation and requirements on the quality of the nuclear installation, and their evaluation,
g) operating regulations set by the Authority,
h) on-site emergency plan,
i) pre-operation safety analyses report
j) for nuclear installation comprising nuclear reactor, probability assessment of operation safety of shut-down reactor and for low output levels, as well as for full reactor output,
k) physical protection plan, including contract with the Police Corps, as well as description of the method of aviation activities at premises or in the vicinity of the nuclear installation,
l) radioactive waste and spent fuel management plan, including their transport,
m) plan concept of decommissioning of the nuclear installation,
n) document providing evidence for financial coverage of liability for nuclear damage, except repository,
o) professional training systems for employees,
p) training programmes for licensed employees,
q) training programmes for professionally qualified employees,
r) documents providing evidence for the meeting of the qualification criteria by licensed employees and professionally qualified employees,
s) documents providing evidence for the preparedness of nuclear installation to be commissioned, for trial operation evaluation report on the commissioning of nuclear installation, and for permanent operation evaluation report on trial operation,
t) off-site emergency plan for regions within the emergency zone,
u) definition of boundaries of nuclear installation,
v) definition of the size of the emergency planning zone of nuclear installation,
w) documents evidencing the numbers of the permanent staff including staff qualifications.
UJD issues permission for commissioning of NPP after assessment or approval

above mentioned documents and own inspection activities directly performed on NPP.
UJD approves commissioning programs of NPP that are divided into several stages, where for each of stage are specified criteria. UJD issues permissions for subsequent stages of commissioning of NPP upon a submission to UJD of a written application by the licensee and upon affirmative reviews the evaluation report of the preceding stage of the commissioning of the NPP. Subsequent stage is successfully finished only when are fulfilled specified criteria. UJD controls commissioning process of NPP of each subsequent stage by own inspectors, adherence of approved programs and fulfillment of specified criteria.

Q.No	Country	Article	Ref. in National Report
77	Romania	Article 14.2	

Question/ Comment: Please describe the provisions in place in the operating organizations to ensure safety assessment and control of temporary modifications.

Answer: The initiated modifications are categorised according to various criteria stated in the procedure “Project Administration and Change Management”.
From the duration point of view there are permanent and temporary modifications. The procedure to be followed while implementing temporary modifications is the guideline ”Control of Temporary Modification and Temporary Changes” and it is governed by the Operation Management Department. The guideline applies legislative requirements. Temporary changes during maintenance activities are managed according to the procedure “Economic Evaluation of Maintenance”.

SLOVENIA

Convention on Nuclear Safety
Questions Posted To Slovakia By Slovenia in 2008

Q.No	Country	Article	Ref. in National Report
39	Slovenia	Article 9	Art. 9/3.22.1/p. 60
Question/ Comment	You reported on different kind of inspectionc: (1) planned and (2) non- planned and within those two basic categories (a) routine; (b) special and (c) team inspections. Could you provide us with some statistics, based on division of inspection as reported (for the year 2006)		
Answer	See support document		
Support Documents	» Answers to the Question No. 39		

Q.No	Country	Article	Ref. in National Report
50	Slovenia	Article 11.1	Art. 11/4.2.1/p. 65
Question/ Comment	You mentioned that financial strategies of the operators have been developed as a commitment to spend necessary financial means to meet nuclear and radiation safety…. Does the applicant have to prove that sufficient financial resources are guaranteed throughout the operating life time of a facility (i.e. for the case of bankruptcy or winding up of the licensee) as a condition to get / extend) the operation licence; if YES, is this a »financial strategy« or something else?		
Answer	According to § 23 of the Atomic Act "…The authorisation holder shall be liable to provide for adequate funds and human resources to ensure nuclear safety, including the necessary engineering and technical support activities in all areas related to nuclear safety. The authorisation holder shall pay attention to the safety issues prior over any other aspects of the authorised activity". Financial resources are of course planned in the financial budget for several years in advance.		

Q.No	Country	Article	Ref. in National Report
79	Slovenia	Article 15	Art.15/4.6.2/88
Question/ Comment	The operator is obliged to send regularly reports on monitoring results to the state administration bodies according to the conditions set in the authorisation and provide them to the inspectors. The report does not contain anything on implementation of ALARA principle. Could you provide some essential information? Could you provide the data on the occupational exposure in the NPPs, such as collective dose, average individual dose, maximal exposure? The public exposure due to radioactive discharges is limited with dose constraints of 250 ìSv a year. Are there any dose assessment for a particular power plant? Could you provide some figures?		
Answer	See support document		
Support Documents	» Answers to the Question No. 79		

Overview of inspections conducted in 2006

Object of inspection	Planed			Unplaned			Total
	Team work	Special	Routine	Team work	Special	Routine	
JAVYS,a.s. AE V-1	3	13	4	-	1	-	**21**
SE, a. s.AE V-2	7	11	4	1	2	-	**25**
SE,a.s AE Mochovce.	5	13	4	2	-	-	**24**
JAVYS, a.s. – VYZ	3	11	4	1	1	1	**21**
VUJE a.s.	-	2	-	-	-	-	**2**
Shipment of RW	-	3	-	-	4	-	**7**
Accounting & control of nuclear materials	-	28	-	-	18	-	**46**
Other inspections	-	3	-	1	-	-	**4**
Total	18	84	16	5	26	1	**150**

The ALARA principle is one of the basic principles of radiation protection and is, of course, implemented in nuclear power plants. It was implemented in the design process, it is being implemented in design changes and has been implemented in daily activities of plant operation. ALARA is required by the Regulation No.345/2006 on Protection of Workers and Inhabitants against Ionising Radiation and it is also implemented into the NPP QA documentation. Specific responsibilities, dose constraints, and ALARA committee are defined in the plant guidelines.
The data is regularly provided to the Public Health Authority of the Slovak Republic, to the State Dose Register and published in annual report.
ALARA is applied in following cases:
a, Before performing planned activities leading to irradiation, before using new sources of radiation , or before applying a new method of using of sources of radiation. It is performed by an analysis and comparison of appropriate alternatives for the analysed activity. Quantitative methods are used mainly for this purpose, where expenses are compared with collective and individual doses of workers and/or inhabitants in the relevant critical groups.
b, During operation a regular analysis of doses (collective and individual) is performed in relation to performed activities, taking into account whether additional protective measures are needed, and also their comparison with the similar already performed activities and best available technology and methods is done.
For example:
In year 2007 doses at Bohunice V2 NPP were as follows – collective dose/NPP V-2/ = 608,215 man mSv

– average individual dose = 0,393 man mSv

– max. individual dose = 15,249 mSv

At Mochovce NPP: – collective dose/NPP V-2/ = 159,30 man mSv

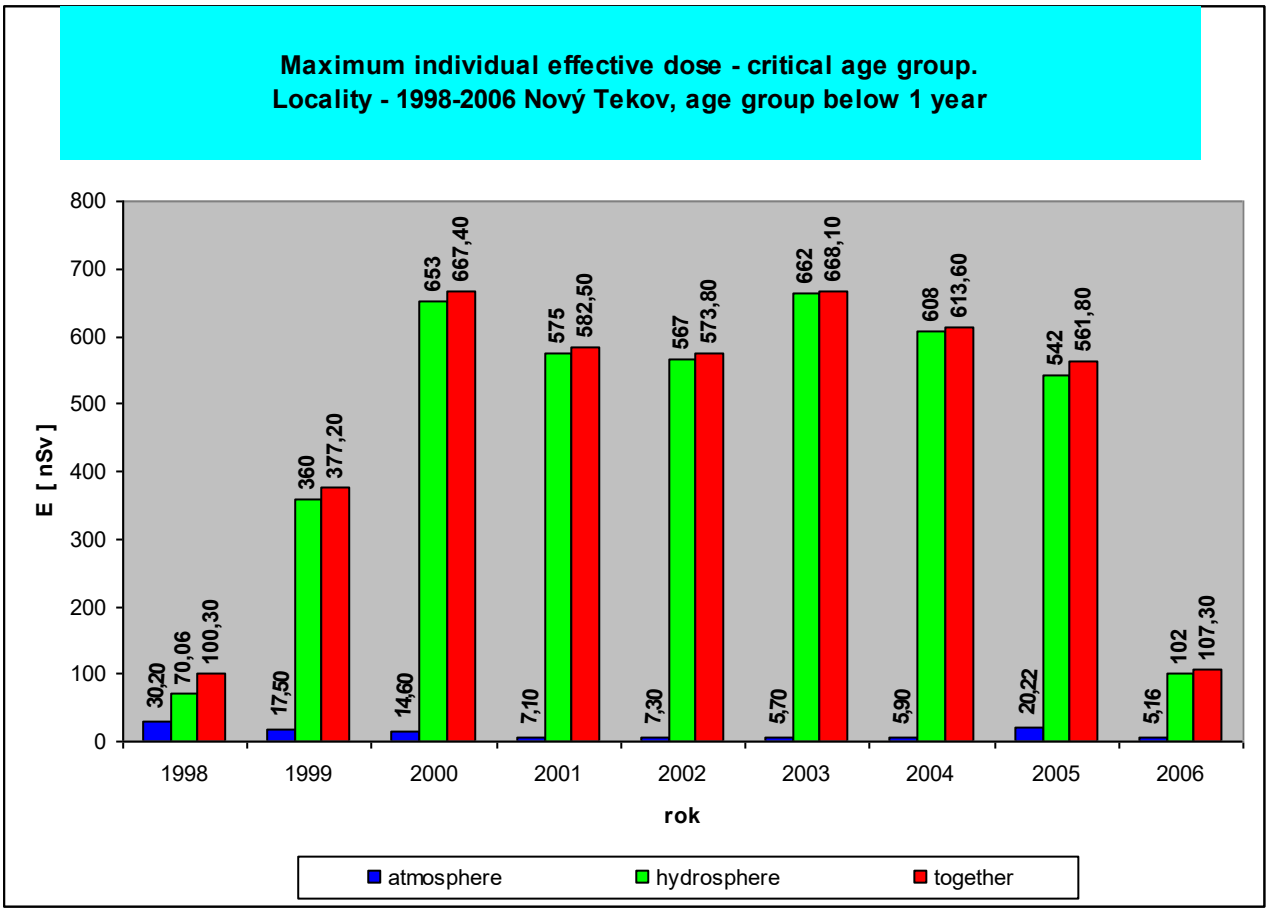
– average individual dose = 0,196 man mSv

– max. individual dose = 4,70 mSv (for employees)

The NPP operator is obliged to calculate doses of inhabitants around NPP in the nuclear installation annual report in order to show the impact of NPP operation on the environment and to prove that it is ALARA. The dose assessment can be performed for each particular nuclear installation as well as for all installations at the site.

For Bohunice site: in year 2006 – 0,14430 μSv ($1,443 * 10^{-7}$ Sv).

.
For Mochovce NPP the calculated values were as follows (release from both reactor units):


Maximum individual effective dose - critical age group.
Locality - 1998-2006 Nový Tekov, age group below 1 year
E [nSv]
800
700
600
500
400
300
200
100
0
30,20
70,06
100,30
17,50
360
377,20
14,60
653
667,40
7,10
575
582,50
7,30
567
573,80
5,70
662
668,10
5,90
608
613,60
20,22
542
561,80
5,16
102
107,30
1998
1999
2000
2001
2002
2003
2004
2005
2006
rok
atmosphere
hydrosphere
together

SPAIN

Convention on Nuclear Safety
Questions Posted To Slovakia By Spain in 2008

Q.No	Country	Article	Ref. in National Report
2	Spain	General	Section 1.2. page 11

Question/ Comment	Regarding the restructuring process of the company Joint-stock Company Slovenske elektrárne. Has been performed any analysis on the organizational changes from the safety point of view?
Answer	From 2004 a guide for assessing organisational changes from the safety point of you had been valid so all changes regarding the restructuring process were reviewed according to it and no additional special analysis of organisational changes from the safety point of view was done when SE, a. s. was restructured. But as two new legal entities were established (SE, a. s. and JAVYS), they had to apply for the license for operation and provide the regulator with all necessary documents for review and approval. Joint-stock Company Slovenske elektrárne started to perform deep analysis of organizational structure in 2006. An independent company to perform such analysis was also invited to recommend to the management on changes regarding increasing efficiency and effectiveness of processes. Concerning nuclear part of the company main changes were in centralization of selected supportive functions. In 2007 aintroduced new internal procedure “Management of organizational changes in SE, a.s.” which is in line with the IAEA TECDOC in this area. At present all organizational changes are reviewed by independent Committee from the point of view of a potential impact on nuclear safety. All organizational changes are implemented in accordance with the following series of steps: • identification of the need for change, • processing of the change request, • categorization of the change, • change proposal (if required), • independent assessment of the change proposal, • recommendation and internal approval of the change proposal, • approval of the change by a regulatory authority (if required), • verification before implementation of the change, and change implementation and evaluation.

Q.No	Country	Article	Ref. in National Report
24	Spain	Article 7.1	SECTION 3.2.2.1 PAGE 60

Question/ Comment	Regarding the inspection plan mentioned in section 3.2.2.1, Could you describe more detailed the content of the inspection plant, and the structure of the inspection manual?.
Answer	See support document
Support Documents	» Answers to the Question No. 24

Q.No	Country	Article	Ref. in National Report
25	Spain	Article 7.1	Page 62 of the national Report

Question/ Comment	In the page 62 of the report it is said “a trend analysis of the inspection findings is carried out”. Could you explain in more detail how you group together the different findings in the analysis?.
Answer	See support document
Support Documents	» Answers to the Question No. 25

Inspection plan looks like the table below (only one row wxample):

Num.	Locality/ permit holder	Plant	Area	Name, description of inspection	Inspection type	Department	Cooperation with	Scheduled	Inspector
101.	JAVYS	EBO 1,2	OP FP	Inspection of operation and fire protection	R	310	320	1Q	Black

For the complete annual inspection plan is available on our web site www.ujd.gov.sk (available in English as well).
The inspection manual has the following structure:

1) Objectives of inspection
2) Requirements for inspection

Inspection guidelines

UKRAINE

Convention on Nuclear Safety
Questions Posted To Slovakia By Ukraine in 2008

Q.No	Country	Article	Ref. in National Report
12	Ukraine	Article 6	Para 2.1.2.4, page 20

Question/ Comment: From the presented PSA results, implementation of the modernization measures allowed to reduce essentially the core damage frequency. How the main CDF contributors and dominant emergency consequences were redistributed?

Answer: The modifications in NPP Bohunice V-1 configuration significantly reduced the core damage frequency. The initial level of core damage frequency (before the "Small Reconstruction" status of the plant) was 1.70E-3 per year. Within the "Small Reconstruction" this value was decreased by a factor of 1.9 to 8.86E-4 per year. The "Gradual Upgrading" decreased the core damage frequency by a factor of 66, e.g. to 2.56E-5 per year and implementation of symptom based emergency procedures at control room reduced CDF to 2.09E-5 per year (see page 20 at the National Report).

PSA study concludes that the large, medium and small LOCA inside confinement are the most dominant contributors to the post-reconstruction risk. They account about 52 % of the core damage frequency. This result is partially due to failure rate to run of High Pressure Safety Injection (HPSI) pumps which are required to compensate losses from Reactor Cooling System (RCS) and spray pumps. However, the importance of these accident groups is greatly reduced, in comparison with pre-gradual reconstruction status. This is due to these factors: (1) Low Pressure Safety Injection (LPSI) system was installed to mitigate the large LOCA, (2) aggressive depressurization of RCS to the LPSI pump shut-off head pressure can prevent core damage in case of medium and small LOCA if all HPSI pumps are lost, and (3) improved confinement spray systems.

Loss of coolant accidents in interfacing systems outside the confinement (SGTM, IFL and SGTR) represent a moderate contribution to core damage, at about 14 percent of the total, but are important contributors to risk because they may represent a direct release path to the environment.

The reactor transients (including loss of off-site power) account about 7 percent of core damage frequency. These categories were more dominant contributors in the former plant PSA studies. However, the plant reconstruction decreased their impact on the plant safety.

The internal fire represent 10 percent of the total CDF and external events contribution to the total risk is about 2 percent (limited fire, flood and seismic analysis are involved).

Q.No	Country	Article	Ref. in National Report
13	Ukraine	Article 6	Para. 2.1.3.1, page 22

Question/ Comment: How the issues on equipment ageing were considered in development of the "Gradual reconstruction project"?

Answer: Conditions and criteria for the classification of components and requirements for equipment qualification according to the "Gradual reconstruction project" were applied to equipment and components which were repeatedly used in the "Gradual reconstruction project".

Q.No	Country	Article	Ref. in National Report
51	Ukraine	Article 11.1	Para. 4.2.2, page 66

Question/ Comment: It is mentioned that penalties, which are imposed by the regulatory authority (UJD) are transferred to National Nuclear Fund, aimed at radwaste management and decommissioning.
1. Are all the penalties imposed by the UJD transferred only to this fund?
2. What is the participation of the State in the decision-making by the Fund? What is the participation of the regulatory authority in the decision-making by the Fund?

Answer: 1. All of the financial penalties imposed by UJD are exclusively revenues of the State Nuclear Decommissioning Fund in accordance with Article 34 (1) of the Atomic Act No. 541/2004 Coll. and Article 7 (1) (c) of the Act No. 238/2006 Coll.
2. As far as the State Nuclear Decommissioning Fundconcerns is independent legal entity on sui generis basis, participation of the State itself in decision-making process carried out by the Fund is only mediated one e. g. through nominating the members of the Board of Trustees, which is the highest executive and decision-making body of the Fund. The Government appoints all members of the Board of Trustees including its chairperson and vice-chairperson. The Minister of Economy, Minister of Finance and Chairperson of UJD make nominations for members, chairperson and vice-chairperson to the Government based upon the results of the selection procedure. Another possible instrument of the State influence is through casting-up the Board of Supervisors that is entitled to supervise the financing and activities of the Fund throughout the year. Upon the law basis, the State Secretary of the Ministry of Finance is a chairperson of the Board of Supervisors. State Secretary of the Ministry of Economy as well as the representatives of the Ministry of Environment, Ministry of Health and vice-chairperson of the UJD are the other members of the Board of Supervisors.
Therefore to sum up, there do not exists direct participation of UJD in decision-making process of the Fund itself. Implicitly, there is only participation through the membership in the Board of Supervisors and submission of nomination for the vice-chairman position in the Board of Trustees.
In addition, UJD is enabled to provide his opinion to the Strategy of the Back–End Fuel Cycle that, in principle, is the basic document for decision-making process concerning the Fund expenditures.

Q.No	Country	Article	Ref. in National Report
60	Ukraine	Article 12	Para. 4.3, page 74

Question/ Comment: Is there a database of scenarios related to the abnormal events (accidents) occurred at NPPs in Slovakia (in other countries)? Are these scenarios subject to subsequent work during the training activities?

Answer: Existing database of the scenarios of abnormal events is based on the Safety Report.
Most probable events (accidents) resulting from the PSA study are included in the database of scenarios which are trained in periodical periods at full scale simulator so that personnel manage those events. Likewise, initiating events and near misses which happened at NPPs, are trained at the full scope simulator based on recommendations of the “Committee of Operating Events and Selected Precursors” or on desicin of the lecturer of the training at the full scope simulator.

Q.No	Country	Article	Ref. in National Report
63	Ukraine	Article 13	Para 4.4.1, page 78

Question/ Comment: It is mentioned that ÚJD Decree No. 56/2006 Coll, which regulates issues of quality management in the activities of licensee, entered into force on January 12th 2006, before the entry into force of the IAEA document GS-R-3. But page 79 (3-rd paragraph) says that licensee develops integrated management system in

accordance with IAEA document GS-R-3.
Are the regulatory requirements on introduction for licensee of Integrated management system and assessment procedures developed?

Answer Requirements for the licensee of Integrated management system (ISM) are determined in the Act No. 541/2004 Coll. and in UJD Decree No. 56/2006 Coll.
Act No. 541/2004 says: The operator is obliged to create necessary organizational structure, procedures and resources for nuclear installation quality assurance (further referred to as „quality system“).
Para 4.4.1 National Report says: Quality system of operators is built and implemented in a form of an Integrated Management System (ISM). It is a management system that meets requirements on safety management and environmental quality and protection, pursuant to the recommendation of IAEA No. GS-R-3.
Elaboration and implementation of ISM have to be in accordance with valid Slovak legislation. IAEA documents (e.g. GS-R-3) are recommended.
For assessment of quality assurance, UJD has been using four principal activities:
• Review and approval of quality system documentation
• Review and approval of quality requirements
• Review and approval of changes in quality system documentation and quality requirements of nuclear installations and classified equipments
• Inspections of implementation of quality system documentation and quality requirements according to the requirements of valid Slovak legislation.

Q.No	Country	Article	Ref. in National Report
72	Ukraine	Article 14.1	Para 4.5, page 82

Question/ Comment What work is performed on validation of the used computer codes? If in-house pilot installations were used or the validation was carried out within the international projects?

Answer For example the reconstruction of NPP V1 in 1998-2000 included the installation of new digital reactor protection system TELEPERM XS. In the frame of this pilot project TELEPERM was validated under supervision of SE, a. s. – AREVA (former Siemens) – VUJE.
Validation and verification of computing codes for analysis are not in responsibility of plant staff. There is such a policy at the plant that the supplier of accident analysis is fully responsible for proving own policy on best practises of developing computer codes, their developments, validations and verifications. And in addition, they have to prove sufficient knowledge and skill of their users. That responsibility is stated on the basis of a particular contract for an accident analysis.
All major suppliers of analyses are involved in international validation examinations of codes they use for safety analyses. This activity is considered as a precondition for cooperation and as a vital part of the QA of the suppliers. There are no in-house pilot installations that could be used for code validation.

Q.No	Country	Article	Ref. in National Report
73	Ukraine	Article 14.1	Para 4.5.8, page 86

Question/ Comment This Section describes the NPP operation assessment system with the help of safety performance indicators. Is there an access of publicity to these indicators such as for example US NRC – at the official Internet site?

Answer Internet web site of the company provides general information on company activities.
Outputs from the automated evaluation programme of operating safety indicators system are generated quarterly and yearly in the form of the Report on the Safety

Status Operation and after approving by the Nuclear Safety Committee and the plant manager it is submitted to the regulatory authority in the sense of the Regulation No.50/2006. The report of the regulatory authority (UJD) is on its website. Hovewer limitations are in place as regards security related information.

Q.No	Country	Article	Ref. in National Report
80	Ukraine	Article 15	Para 4.6, page 87

Question/ Comment: Whether tritium (Í3) and carbon (Ñ14) are measured in NPP releases into the air or not?

Answer: Tritium and carbon are measured in ventilation releases and data are presented in reports (see question No. 79).
The measurement is performed by sampling stack air continuously and samples are analysed in the laboratory (carbon C14 is sampled in anorganic and organic form).

Q.No	Country	Article	Ref. in National Report
84	Ukraine	Article 16.1	Para 4.7.3, p. 95, Para 4.7.4, p.96

Question/ Comment: Is the classification of accidents outlined in the IAEA safety requirements GS-R-2 applied in on-site and off-site emergency plans?

Answer: Yes, it is. The clasification of accident is one of basic prerequisites for the NPP operator to start relevant countermeasures in case of emergency. It is duty of NPP operator to provide all peaces of information for off-site emergency plan so that the off-site emergency structures could be appropriately prepared to face emergency situation.

Q.No	Country	Article	Ref. in National Report
92	Ukraine	Article 19.1	Para 5.3.5.3, page 116

Question/ Comment: Starting from 2000 for Bohunice V-1 and V-2 (Figure 5.3.1) a tendency to increase of operational events is observed (maximum in 2006). What it was related to (general causes)? And which measures were taken to reduce the number of the operational events?

Answer: See the answer to the question No.91.

UNITED KINGDOM

Convention on Nuclear Safety
Questions Posted To Slovakia By United Kingdom in 2008

Q.No	Country	Article	Ref. in National Report
27	United Kingdom	Article 7.2.4	Page 51

Question/ Comment: The report states that UJD may sanction failure to conform to obligations. What powers of enforcement does UJD have? Does UJD use a proportional enforcement system, with different actions for different levels of contravention? What enforcement actions were taken, during the period of the report?

Answer: UJD may impose several types of sanctions. The financial penalties pursuant to Art. 34 of the Atomic Act No. 541/2004 Coll. being imposed to the natural persons or legal entities are the most common type of sanction. The largest inflictable penalty available is up to SKK 50 mil. (approx. EUR 1,8 mil.), which may be impose upon the person for use of nuclear energy for other purpose than peaceful one. The lowest possible financial penalty may be imposed upon a natural person for the administrative infractions amounting to up to SKK 100.000 (approx. EUR 3.800). The financial penalties differ according to gravity of the violation of law, and as well, UJD may impose even an additionial penalty upon the person who failed to remedy insufficiencies for which a fine had been previously imposed. What is more, in accordance with the Article 9 (3) and Article 32 of the 2004 Atomic Act, there exists a competence of UJD to suspend or restrict the authorisation given, which, as well, may be considered as kind of a sanction. In general, UJD will impose these sanctions on exceptional basis, because usually, there is an intention of the regulator to reach the desired status rather smoothly through drawing licensee´s attention to insufficiences or through interpretations. In the previous period, UJD imposed 5 penalties in total.
The violations of law are defined as administrative delicts (for legal entities) and offences (for natural persons). Administrative delicts and offences and their sanctions are laid down in Article 34 of the Atomic Act No. 541/2004 Coll in such way that each provision specify subject matter of the delict or offence by appealing to another provisions of the Act (defining obligations or basic principles), and, corresponding maximum inflictable amount of penalty, as well. For example, "...a fine of up to SKK 10.000.000 shall be imposed by the Authority upon authorizatuion holder who has violated his responsibilities under Article 10..." and in Article 10, there are laid down the obligations of the authorisation holder explicitly.
Should the authorisation holder do not respect or comply with the sanctions imposed by the UJD, the UJD would file a bill at the court to carry decision into execution, and consecutively, request an executor to carry out enforcement.

Q.No	Country	Article	Ref. in National Report
40	United Kingdom	Article 9	Page 59

Question/ Comment: The report states that modifications to nuclear installations may be implemented only after approval or permission from UJD. Are modifications graded according to the hazard created by inadequate design or implementation so that UJD gives different levels of scrutiny to them and different levels of approval? How many modification approvals at each category have been given?

Answer: In accordance with the Atomic Law, following modifications and changes defined in the §2, letter u) of the Atomic Law have to be approved by the Regulatory Authority prior to their implementation:

- changes and modifications of classified equipment (classified systems, structures and components)
- changes and modifications of reviewed and/or of documentations approved by the regulatory Authority
- changes which have a consequence to the change of the technical specification (limits and conditions)

In a case of implementation of the safety upgrading measures at individual plants, proposed changes and modifications are ranked in the categories depending on an importance of the concrete safety issues to the nuclear safety. Categorisation of the safety issues is given in the IAEA publication „SAFETY ISSUES AND THEIR RANKING FOR WWER-440 MODEL 213 NUCLEAR POWER PLANTS“, report No.: IAEA-EBP-WWER-03. The safety issues are ranked into four categories I to IV, the category IV is of highest safety concern. It means the highest priority to implement adequate safety upgrading measures have safety issues of category IV.

As the example, NRA SR has isssued its decision No. 214/2000 of September 19, 2000 on implementation of the safety upgrading programme at Unit 3 and 4 of Bohunice. In accordance with this decision it was required to implement modification to the:
- safety issues of category III up to 2004
- safety issues of category II up to 2006, and
- safety issues of category I up to 2008
At unit 3 and 4 of Bohunice NPP there were identified no safety issues of category IV.

Total number of safety issues to be upgraded at this plant is:
- safety issues of category III – 8 issues
- safety issues of category II – 40 issues
- safety issues of category I – 26 issues

However the number of the Regulatory Authority decisions is rather higher than the number of safety issues due to a fact that a lot of modifications have been implemented in few stages (mostly during the refueling outages) and documentation was elaborated for these individual stages. Moreover there was needed to review and approve additional contiguous documentation, e. g. quality assurance plans, limits and conditions, etc.

Q.No	Country	Article	Ref. in National Report
52	United Kingdom	Article 11.1	Page 66

Question/ Comment: The report gives a description of the National Nuclear Fund. What are the “voluntary contributions from natural and legal entities”? The Enabling Act obliges the operators to pay into the fund according to a fixed formula. Does the Fund company have an obligation to estimate how much decommissioning and waste treatment will cost and whether the Fund will be able to provide for these costs when called upon to do so? What provisions are there to change the formula as circumstances change? What contingency is there for funding an unexpectedly early decommissioning?

Answer: Voluntary contributions from natural or legal entitites are enacted as one of the possible sources for the Fund revenues. The Act is not very detailed in this regard and obviously, in praxis, such contributions will occur rarely, when somebody is

willing to provide Fund with any financial contributions.Iin general, the Act enables such contributions.
In its decision making, the Board of Trustees usually follows the Strategy of the Back–End Fuel Cycle and the relevant Fund budget, where all applicants have to indicate their future financial needs well in advance in regard to the tasks specified in the Strategy. In the Act, there is no possibility to change the fixed formula for accounting the contributions, therefore, if necessary, only amendment to the law might change it.
In the case of unexpectedly early decommissioning, the Act on Nuclear Fund differs two situations:
First case is under Article 7 (3), when a holder of authorization for a nuclear installation operation generating electricity itself suspends such installation from operation upon his own decision before its planned operating time, then he would be obliged to reimburse the Nuclear Fund for the contributions accounting to the sum owing for the rest of the time concerning the previously planned operating time of the nuclear installation (it means sum of contributions which originally would be paid by the authorisation holder itself plus sum of tranfer payments which originally would be paid by the transmittion and distribution networks´ operators to the Nuclear Fund).
Second case is under Article 7 (7), if another body than UJD would take decision on suspension of nuclear installations´ operation and such decision would be made due to other reasons than reason of threatening the operation safety of installation itself, then such body would be obliged to reimburse the Nuclear Fund for the rest amount of the obligatory required contributions and transfer payments that would be normally paid by nuclear installation operator generating electricity and, as well, by the transmition and distribution networks´ operators.

Q.No	Country	Article	Ref. in National Report
56	United Kingdom	Article 11.2	Page 67

Question/ Comment: The report gives an extensive description of the training arrangements for site staff. Given that there are many staff with duties that can affect nuclear safety, at locations other than sites (such as corporate headquarters and design offices) and including corporate managers and executives who are not at site, do the same training arrangements and philosophy apply to these staff?

Answer: The preparation and training of personnel who is not right at the NPP is not fully the same as of the personnel who has influence and direct influence on nuclear safety. Training activities are intended, however, also for this group of employees who have to attend them in order that they can move, eventually perform activities at nuclear power plants (especially supervisory and control ones – not executive). The periodicity of those trainings is every two years and if they want to have an access to the controlled area, they have to meet all criteria as operating personnel (with other relevant qualifications, as healthy and psychic fitness). Special care is taken of the personnel of suppliers who takes part in the preparation for work performance at NPP with wider and deeper scope and more frequent periodicity like managerial and technical positions from the headquarters. The licensee elaborated control and executive documentation for the plant personnel preparation and the preparation is performed by special institutions for personnel training for works at NPP operating as well as by the NPP operator itself.

Q.No	Country	Article	Ref. in National Report
61	United Kingdom	Article 12	Page 77

Question/ Comment: The report refers to safety culture action plans and their evaluation and also mentions the use of safety culture indicators, which are used as part of the

assessment. Since safety culture assessment and improvement is not only brought about by evaluating incident feedback, what are the other elements of safety culture management that are used to evaluate and improve safety culture? What are the specific safety culture performance indicators used and how are they used to drive improvement?

Answer For example the level of nuclear safety at company JAVYS, a. s. including Safety culture indicators are evaluated by software code PPRC. Safety culture is evaluated by following indicators:
- Internally reported operating events
- Operational events caused due to improper documentation
- Operational events caused due to improper human action
- Operational events caused due to improper design
- The share of human inappropriate actions in operational events
- Short term modifications of Limit and Conditions
- Violation of Limits and Conditions
- Violations of internal limits for radiation exposure
- Radwaste production
- Number of preventive inspections on fire protection
- Near misses
- Walk downs of managers
- Participation of managers to the staff training
- Indicator of staff qualification
- Internal audits of nuclear safety
- Inconsistencies found during nuclear safety audits
- Analysis of operating experience from external nuclear installations (other experience)
- Following of the corrective actions resulted from operating events
- Reccurence of operating events
- Root cause analyses of operating events
- Practical skills of selected operating peronnel
- Theoretical skills of selected operating personnel

Safety culture indicators were developed in term of project DTI – NSP/04 (see 5.3.5.2).
Applicable indicators proposed by the project were included in the software PPRC. Analytical process of hadling of indicators is described in 4.5.8.

Q.No	Country	Article	Ref. in National Report
64	United Kingdom	Article 13	Page 80

Question/ Comment The report recognises that contractor's activities can have an influence on safety and refers to audits of Quality Management Systems of Contractors. In the case of work where engineering design and construction, assembly and operation are carried out by contractors and in some cases also involving sub-contractors, how does the hiring organisation ensure that it properly oversees the work? How does the hiring organisation ensure that it has the capability to understand advice and service given to it and the context, for safety, in which that advice sits: even when the advice is esoteric?
How does UJD ensure its Licensees have, and take steps to retain, adequate capability within its own organisation to understand the nuclear safety requirements of all of its activities relevant to safety, and those of contractors and not delegate to contractors responsibilities which are properly those of the licensee?

Answer A surveillance / control of work which is carried out by contractors:
• Quality plans have to be elaborated for all classified equipment (i.e. related to

nuclear safety) and for all changes and modifications of original design of nuclear installation. The quality plans provide for following the requirements of valid Slovak legislation and requirements of quality assurance. The quality plans are validated by the licensee and reviewed by Regulatory Authority. Decree No. 56/2006 Coll. lays down detailed requirements for all aforementioned documents and details on the scope of their approval.
• Audits of quality performed by the licensee at making contractors´ activities.
• Inspections conducted by Nuclear Regulatory Authority.

Answer to second part of the question:
Who is the hiring organisation? I suppose, that it is the relation between licensee and contractor. The licensee is always responsible for quality assurance and necessary level of management the nuclear safety. The licensee is responsible for contractors´ activities and servicies. The licensee may require for examination of contractors´ capability, for example efficient quality management system of the contractor´s organization.
The licensee has to observe the requirements of valid Slovak legislation. The professional competency / capability of the licensee is verified before authorization of the licence.
The care of professional competency is checked:
• System audits of quality of contractors performed by licensee.
• Inspection and review activities of the licencees conducted by Nuclear Regulatory Authority.

Q.No	Country	Article	Ref. in National Report
74	United Kingdom	Article 14.1	Page 85

Question/ Comment: PSA frequency is set at ten years. If UJD were of the opinion that a more frequent report was necessary, could this period be reduced?

Answer: According to the Decree No.49/2006 Coll. on Periodic safety review, the first periodic safety review (PSR) is required 8 years after the operating license has been issued. The following PSRs are carried out in 10 years intervals. This interval is recommended also with IAEA safety Guide No. NS-G-2.10.
One of main roles of PSR is to assess the cumulative effects of plant ageing, modifications, the feedback of operating experience against current safety standards, practices and developments in science. Correct consideration of the cumulative effects requires, that sufficiently long period of plant lifetime is evaluated and taken into account. Therefore, it seems that 10 years frequency for PSR is set correctly and it corresponds to the international practice. However, in case of a serious need for a shorter interval between individual PSRs in the future, the period could be reduced by issuing of an updated and/or new Decree.

Q.No	Country	Article	Ref. in National Report
78	United Kingdom	Article 14.2	Page 86

Question/ Comment: The report states that safety performance indicators are used to assess safety and are presented in the form of a report on operational safety status. It also refers to the self-assessment process as proposed by TECDOC 1125 and states that an objective is to identify degraded performance and prevent further degradation. Since self-assessment is generally regarded as one component of a self-improvement system, by what process are the outcomes of monitoring and self-assessment used to generate improvement? Have these processes been successful in generating improvement initiatives?

Answer: Outcomes of monitoring and self assessment are evaluated and corrective measures

in areas of degraded performance are taken with the aim to enhance effectiveness and performance of the process or subprocess at different levels:
1. Operation department daily meetings
2. NPP management weekly meetings
3. Operating event committee
4. NPP nuclear safety committee
Corrective measures are taken in appropriate extent in case if performance criteria or indicators are degraded.
Yes, these processes have been successful. Several SPI have been improved.
As it was written in the answer to the question No.69, there are some shortages in self-assessment, which were identified by WANO Peer Review of Bohunice NPP. The order of the plant manager was issued to relieve shortages, e.g. to define measurable objectives, to develop performance indicators of training, to determine rules, form and periodicity of the evaluation of the Programme of Plant Status Improvement.

Q.No	Country	Article	Ref. in National Report
81	United Kingdom	Article 15	Page 87

Question/ Comment: The report describes the obligation on the licensee to record and report radiation doses, but makes no mention of dose reduction or ALARA. Is there an obligation on the operator to reduce dose?

Answer: The optimization principle and the obligation to reduce doses is the part of the government radiation protection regulations, standards and the internal NPP guidelines concerning ALARA. Any activity to be performed in the radiation control area must be approved by the radiation protection unit. See response to question No. 79, too.

Q.No	Country	Article	Ref. in National Report
87	United Kingdom	Article 17.4	Page 101

Question/ Comment: The report describes the obligation to give open information to the public. Have there been any initiatives to engage stakeholders in dialogue, establishing whether their needs for information are being met?

Answer: The operator communicate with the common public according to legal obligations set by the Act No. 211/2000 on Free Access to Information. What is more, the operators communicate regularly with Civic Information Committees set by communities living in the vicinity of our Nuclear Power Plants at Bohunice or Mochovce.
In addition to the Act No. 211/2000 on Free Access to Information, the operators has developed a lot of efforts to provide qualified information to the public as well as to be a trustworthy partner. There are various information channels to facilitate communication with the public (e. g.):
• printed media, incl. corporate monthly Slovenska energetika and Atom plus for employees (the latter one being a special magazine for nuclear power plant employees), monthly atom.sk for the population in regions around the Mochovce and Bohunice NPPs (being distributed free of charge), information leaflets and brochures about NPPs, annual operational reports, etc.
• electronic media, incl. intranet and internet pages with regular updates, TV (ads & educational series, etc.)
• information centres in both Bohunice and Mochovce NPP (~15,000 visitors a year)
• local community relations, including regional associations of municipalities, civic information committees - well-known people in regions (regular information-

exchange meetings with utility management), local sponsorship, etc.
• media relations, press conferences, press releases
• participation at domestic and international exhibitions (e.g. "Science for Life" travelling through all large cities in Slovakia) and conferences/workshops (particularly the ones organised by ENS and IAEA)
• contests for schoolchidren (Young energy)
• international activities, especially at EU level (active involvement in numerous international organisations and working groups)
• public involvement/hearings in important projects (Mochovce NPP completion, power uprating of Mochovce and Bohunice NPP)
• company events with participation of regional public (Open plant, Children Day)
The results of the Company's public relations are monitored by public opinion polls (performed every two years), where strengths and weaknesses are clearly identified.

UNITED STATES OF AMERICA

Convention on Nuclear Safety
Questions Posted To Slovakia By United States of America in 2008

Q.No	Country	Article	Ref. in National Report
14	United States of America	Article 6	Section 2.3.1, Page 34

Question/ Comment	The national report states that there are two units at an advanced stage of construction at Mochovce, but no other information is provided about the status of these units. When is construction expected to be completed and when is it expected that these units will commence commercial operations?
Answer	Units 3, 4 are under construction, it means in the state of the elaboration of Preliminary Safety Analysis Report and Basic Design. The commissioning of the unit 3 is anticipated in 9/2012.

Q.No	Country	Article	Ref. in National Report
15	United States of America	Article 6	Section 2.3.1, Page 34

Question/ Comment	Besides the two units under construction at Mochovce, are there plans for any new nuclear power plants in the near future?
Answer	In long-term horizon new nuclear power plant is considered at the Bohunice site.