REPUBLIC OF SLOVENIA
MINISTRY OF THE ENVIRONMENT AND SPATIAL PLANNING
SLOVENIAN NUCLEAR SAFETY ADMINISTRATION

Slovenian Report on Nuclear Safety

Slovenian 4th National Report as Referred in Article 5 of the Convention on Nuclear Safety

July 2007

Publisher:
Slovenian Nuclear Safety Administration
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Ljubljana, July 2007

URSJV/RP-069/2007
ISSN 1580-7215

Keywords:
Convention on Nuclear Safety, emergency preparedness, exercises, human factors, initial authorisation, Krško NPP, operating experience, operational limits, priority to safety, radiation protection, quality assurance, regulatory framework, regulatory surveillance, siting, training, verification of safety,

Note:
On a CD-ROM, which accompanies this publication, are:
- Slovenian 4th National Report as Referred in Article 5 of the Convention on Nuclear Safety,
- Annual Reports for the years 2004, 2005 and 2006 on Nuclear and Radiation Safety in Slovenia.

EXECUTIVE SUMMARY

In the period 2004-2007 the safety of the only Slovenian nuclear power plant Krško was assessed by the SNSA as satisfactory in relation to the regulatory requirements, which was also pointed out in the annual Reports on Nuclear and Radiation Safety prepared by the SNSA.

Besides the continuous regulatory safety assessment, since 2004 the Krško NPP has experienced a number of reviews and assessments of its safety. In November 2005 the IAEA Operational Safety Review Team (OSART) Follow-up mission was in the Krško NPP. A new Seismic Probabilistic Safety Analysis and an updated Fire Hazard Analysis were produced. The first periodic safety review of the plant was completed and approved by the SNSA in 2005.

The elements of risk informed inspection have been partially incorporated into the current annual inspection program, such as inspection assessment of the activities and events in the light of Probabilistic Safety Assessment (PSA) review and tracking of shutdown safety during the outages with regard to the PSA of safety equipment taking into account the on-going activities status.

The Independent Safety Engineering Group of the Krško NPP maintains a Performance Indicators Program which is based on the document Operational Safety Performance Indicators for Nuclear Power Plants, IAEA TECDOC-1141 and WANO performance indicators.

Some of the important issues which were considered during the outage in 2006 are problems with ageing of the switchyard, leakage of the reactor vessel head vent path, overheating of the auxiliary feedwater pumps bearing, and the control program for heat exchangers of the component cooling system. The safety analysis and the safety assessment of plant changes with significant impact on radiation or nuclear safety shall be reviewed by the technical support organisations before the application is sent to the regulatory body.

With regard to financing the Supervisory Board of the Krško NPP annually approves the Long-term (five years) investment plan. The amount foreseen for investments and improvements is stable and gives the management proper flexibility for long term maintenance of nuclear safety.

Since the commissioning of the full-scope replica simulator in the Krško NPP training centre the licensed operator and shift engineer training program is completely implemented in-house. In 2002 the first group of operations personnel successfully finished their entire training program. In 2006 the third generation of operations personnel started initial training, which is due to be finished at the end of 2008.

In the years 2005 and 2006 a new analysis of the human factor according to IAEA standard was performed in the Krško NPP. The probabilistic safety analysis (PSA) model is comprehensive and gives due consideration to the human performance aspects. The Krško NPP PSA plays an important role in supporting the decision making process and it has been used in the implementation of plant modifications and changes during operation.

The SNSA management system is based on the process approach. The processes are divided into eight core processes and eight supporting processes, which are connected with different core processes. The processes are documented at five levels of management documentation.

In the Krško NPP an overall "Program on inspection of performance and equipment ageing" has been developed with the purpose to determine activities for ensuring long-term reliable plant operation and supervision over ageing of structures, systems and components. The program connects different plant programs and it

aims to determine qualitative guidelines for maintaining high availability and reliability of components.

During plant outages more strict inspections over the plant staff and subcontractors work are performed. Besides the regular supervision by the SNSA inspectors, additional inspections are performed by SNSA experts from the Nuclear Safety Department. As a result of supervision of the plant outage, the SNSA publishes a report "Analysis of outage at the Krško NPP", which includes a list of planned SNSA activities aimed to improve outage activities or to eliminate deficiencies found at the Krško NPP during the outage.

According to the Regulations on the use of radiation sources and radiation practices (OJ RS, 27/06) the role of an independent qualified expert in a nuclear power plant is strengthened. He prepares an overall assessment of radiation protection at the nuclear power plant and gives twice annually the opinion regarding the activities of the radiation protection unit of the nuclear power plant.

In 2006 the SNSA modified the discharge limits of liquid tritium effluents from the previous 20 TBq per year to 45 TBq per year. The main reasons for the increased tritium production at the Krško NPP were the power uprate for 6.3 % in 2000 and the fuel cycle extension to 18 months, which requires higher boron concentration. At the same time the SNSA reduced the limit for fission products in liquid discharges to a half of the previous value.

Reorganization of the Krško NPP on-site emergency response organisation was completed in 2006. In December 2006 the 24th revision of the Krško NPP Emergency Response Plan was issued, the previous one was dated back in September 2003. The latest revision reflects the changes made in the organisation, new equipment – including communications, changes in the plant procedures and other changes made.

An Operating Experience Feedback Program is in place, which includes the consideration of in-house as well as external operating events. The program has been expanded by developing a corrective actions program including low level events and near misses, all types of deviations, failures, malfunctions, and deficiencies.

In 2004 the SNSA introduced into its work systematic follow-up of foreign event reports. Since then 33 potentially interesting events were evaluated in detail for applicability in the Krško NPP.

The SNSA, as a regulatory body in the area of nuclear and radiation safety, is a functionally autonomous institution within the Ministry of the Environment and Spatial Planning. The budget of the SNSA is determined on the basis of the expenditures in the previous year, taking into account new needs which have to be well justified. The budget is the only source for financing the SNSA's basic activities. The operators of nuclear or radiation installations and other licensees do not pay any licensing or inspection fees.

Based on the 2002 Act on Radiation and Nuclear Safety, 22 decrees and regulations have been issued until mid 2007.

It can be concluded that the Slovenian regulations and practices are in compliance with the obligations of the Convention on Nuclear Safety.

CONTENTS

INTRODUCTION

On 20 September 1994, Slovenia signed the Convention on Nuclear Safety (hereinafter – the Convention) and ratified it in the Parliament in October 1996. The Convention entered into force for Slovenia in February 1997. The fulfilment of the obligations in the period from 2001 to 2004 is evaluated in this third report. The report presents the achievements and contributions to the safety of the only nuclear power plant in Slovenia in the recent years, focusing on major projects, programs and modifications, and explaining the impact of the new nuclear and radiation safety act, which was adopted in 2002. The report addresses the areas which were identified during previous evaluation and during the Second Review Meeting. Also presented are the results of the international missions which were undertaken in the given period.

Slovenia has one operating nuclear power plant, one research reactor, one central radioactive waste storage for low and intermediate level solid radioactive waste from non-power users of nuclear energy, and one uranium mine and mill in a decommissioning stage.

The Krško Nuclear Power Plant, situated in the south-eastern part of Slovenia, is the only nuclear installation according to this Convention. It is a Westinghouse two-loop pressurised water reactor with originally installed capacity of 632 MWe net electrical output power. The plant has constantly been modernised. The modernisation resulted not only in improved safety but also the output power was increased. After steam generator replacement the power was uprated to 707/676 MWe (gross electrical power/net electrical power). During the outage in 2006 the low pressure turbines were replaced and the nominal output power reached 727/696 MWe. The basic safety features of the plant are typical for a two-loop Westinghouse plant. The construction started in 1974; on the basis of a special permit, the first fuel loading was accomplished in May 1981 and the plant was synchronised to the grid in October of the same year. After an authorised trial operation, full power was reached in August 1982, and the first full year of commercial operation was 1983.

As stated in the previous two Slovenian Reports, the Krško NPP was constructed as a joint project of the electric utilities of Slovenia and those of the neighbouring Croatia on an equal, 50:50 basis.

To avoid legal uncertainty and to adjust the legal status of joint investments of both Slovenia and Croatia to the new reality (market economy, two sovereign and independent states) the Government of Slovenia and the Government of Croatia signed in December 2001 the Agreement on Settlement of Statutory and Other Legal Relations Regarding the Investments into NPP Krško, its Exploitation and Decommissioning. The Agreement, which was first ratified by the Croatian Parliament, entered into force on March 11, 2003, after being ratified also by Slovenian Parliament (February 25, 2003) and after the notification of the completion of Slovenian internal legal requirements for its entry into force was sent to the Croatian side.

The Agreement actually reaffirms the basic philosophy and provisions set out in the agreements and arrangements stipulated and adopted in early 70's and 80's between the two Yugoslav federal entities and their electric utilities; on the other hand it also stipulates new provisions which were not dealt with before, as for example decommissioning, for which two separate funds are to be established and maintained both in Slovenia and Croatia.

Based on the Agreement, the Krško NPP is registered as a company for production of electrical energy, engineering design, technical expertise, testing, analyses, and research with experimental development in the area of nuclear technology. Since the Krško NPP is located in Slovenia it is subject of Slovenian law and Slovenian nuclear safety regulations.

The NPP Krško operates as a non-profit organisation, but the potential company's profit could be put in the reserve assets.

The safety features of the Krško NPP design are based on the requirements of the US Atomic Energy Commission of 1973. Westinghouse as the main contractor was responsible for the implementation of these requirements during the design, construction and testing phases. The Krško NPP has been the subject of IAEA scrutiny since the very beginning of the project. The commitment of the plant and of the regulatory body, the Slovenian Nuclear Safety Administration (SNSA), has been to follow international experience in the field of nuclear safety and to fulfil western safety standards. Several software and hardware modifications and improvements of the plant have been implemented. These were based on the experience from the Three Mile Island accident, recommendations of different international missions, United States Nuclear Regulatory Commission requirements, experience of the nuclear industry Institute of Nuclear Power Operations (INPO), World Association of Nuclear Operators (WANO), the Westinghouse Owners Group, experience gained from the Phare – Regulatory Assistance Management Group program of the EC and from bilateral co-operation of the regulators.

Solid radioactive waste and spent nuclear fuel are stored within the plant area. The major project in 2003 was expanding the capacity of the spent fuel pit, which has now enough capacity to store spent fuel until year 2023, with the possibility for further expansion of the capacity. Solid radioactive waste is treated and then packed into steel drums, which are then stored in the Solid Waste Storage. In recent years there has been a lot of effort put into minimization of low and intermediate level radioactive waste (LILW) in the Krško NPP (i.e. supercompaction, incineration, in-drum drying system). The main goal is to store the LILW in the existing storage location without expanding it, while waiting for the national LILW repository to be put into operation in 2013.

The Research Reactor TRIGA Mark II of the Jožef Stefan Institute is situated in the vicinity of Ljubljana and has a 250 kWth General Atomic pool reactor. TRIGA was initially licensed in 1966 as an IAEA project and was re-licensed for steady state and pulse operation after refurbishment and reconstruction in 1992. A decision has been adopted that the reactor will operate at least until 2016. In this year the research reactor has to be shut down to start with the fuel cooling and preparations for shipment to meet the deadline to send spent fuel to the United States in 2019.

The Žirovski Vrh Uranium Mine and Mill was in operation in the period from 1985 to 1990. Its lifetime production was 607,700 tons of ore corresponding to 452.5 tons (U_3O_8 equivalent) of yellow cake. Both the mine and the mill are undergoing decommissioning and re-mediation of surface disposal of 1,548,000 tons of mine waste and red mud, and 593,000 tons of mill tailings respectively. In 2005 the activities in the mine were finished, the ventilation station was dismantled and access to the mine is no longer possible. Currently the main activities are related to decommissioning of ore and mill tailings.

The Central Radioactive Waste Storage at the Jožef Stefan Institute in Brinje is used for storage of Low and Intermediate Level solid radioactive waste from the reactor centre and other small waste producers such as medical, research, and industrial applications of ionising radiation. In recent years the Central Radioactive

Waste Storage was refurbished and in 2006 the waste characterisation campaign was performed.

The governmental energy policy is outlined in the National Energy Program, which also addresses nuclear power. The main principles of this Program are sustainability, ecological acceptability and reliability of supply.

In October 2005 the Government of the Republic of Slovenia approved the proposal of the Resolution on the National Programme on Radioactive Waste and Spent Nuclear Fuel Management, which was adopted by the Parliament in February 2006.

In the following section, the fulfilment of each of the articles 4 - 19 of the Convention is evaluated separately. The specific issues which require more detail, together with a comprehensive list of legal documents, are given in the Appendices. The topics which were extensively covered in the previous national reports are only mentioned and reference is given to the previous reports. In Appendix I there is a complete list of the nuclear related legislation which is in force in Slovenia. Slovenia attaches the utmost importance to the review process, therefore it was decided that all the issues raised in the rapporteur's report and in the review meeting summary report are discussed in one section, i.e. Appendix II. Appendix II also contains information concerning the Periodic Safety Review, which is presented in a concise manner.

It can be concluded that the Slovenian regulations and practices are in compliance with the obligations of the Convention.

COMPLIANCE WITH ARTICLES 4 AND 6 TO 19

ARTICLE 4. IMPLEMENTING MEASURES

Each Contracting Party shall take, within the framework of its national law, the legislative, regulatory and administrative measures, and other steps necessary for implementing under this Convention.

The legislative, regulatory, administrative and other steps necessary for implementing Slovenian obligations under the Convention on Nuclear Safety are discussed in this report. It was concluded that the approach taken in Slovenia provides for continuous fulfilment of the requirements presented in the articles of the Convention.

ARTICLE 6. EXISTING NUCLEAR INSTALLATIONS

Each Contracting Party shall take the appropriate steps to ensure that the safety of nuclear installations existing at the time the Convention enters into force for that Contracting Party is reviewed as soon as possible. When necessary in the context of this Convention, the Contracting Party shall ensure that all reasonable practicable improvements are made as a matter of urgency to upgrade the safety of the nuclear installation. If such upgrading cannot be achieved, plans should be implemented to shut down the nuclear installation as soon as practically possible. The timing of the shut-down may take into account the whole energy context and possible alternatives as well as the social, environmental and economic impact.

In the period 2004-2007 the safety of the only Slovenian nuclear power plant Krško was assessed by the SNSA as satisfactory in relation to the requirements, which was pointed out in the annual Reports on Nuclear and Radiation Safety prepared by the SNSA.

Besides the continuous regulatory safety assessment, since 2004 the Krško NPP has experienced a number of reviews and assessments of its safety. The important activities in the area of safety reviews and assessments were the following:

1. An international mission: IAEA Operational Safety Review Team (OSART) Follow-up mission in November 2005.
2. A new Seismic Probabilistic Safety Analysis (SPSA) and an updated Fire Hazard Analysis.
3. The first periodic safety review of the plant was completed and approved by the SNSA in 2005.

The Government of Slovenia invited the IAEA Operational Safety Review Team (OSART) to perform the Follow-up mission, i.e. to discuss the actions taken in response to the findings of the OSART mission in November 2003. Every activity was assessed regarding adequacy and level of progress.

The OSART team received excellent support from the Krško NPP staff and was satisfied with the actions taken to resolve the findings of the original OSART mission. The team established that the plant completed several different programmes that support the resolution of most of the issues.

The overall impression of the OSART team was that the plant has considerably moved forward in addressing the issues addressed in the initial report. The team recognized that:

- The majority of the issues were fully resolved.
- Senior plant management sustains its commitment in improving the operational safety and reliability of the plant.
- Priority remains on nuclear safety at all levels of the organization.
- The plant pursues its effective use of computer technology to plan work, track activities, trend results, train the staff and communicate within the plant.

However, although the Krško NPP has many good operational safety features, the team observed some areas for improvement. The most significant were:

- The industrial safety policy, practice and management involvement should be improved.
- The plant should further address the volume and storage of low level waste.
- The plant should enhance the use and adherence to procedures in the field.

The final statistical analysis of the status of the recommendations and suggestions identified during the OSART mission showed that 68% of these were resolved and 32% were making satisfactory progress.

As a part of the first periodic safety review of the Krško NPP a new seismic probabilistic hazard analysis (SPHA) was conducted in the 2002 to 2004 time period taking into account more recent geologic, seismologic, geophysical and geodetic investigations. It was suggested in PSR that the most feasible approach to address all seismic issues was to completely update the existing seismic PSA originally performed in 1996 as a part of the individual plant examination of external events. The update was to include the effects of the new seismic hazard and to include additional evaluations of upgraded structures, systems and components that could alter the calculated seismic risk. A new seismic PSA study was conducted in 2004. The Level 1 and Level 2 seismic PSA conducted is considered to meet the requirements of the ANS Standard for Capability Category II.

At the end of 2003 an updated Fire Hazard Analysis (FHA) was performed. The first FHA was performed in 1991, which indicated inconsistencies with the regulatory requirements. In 1995 the Krško NPP issued the Fire Protection Action Plan, on the basis of which fire protection modifications were implemented. The updated FHA included modifications implemented between 1995 and 2003 and thus achieved greater compliance with the regulatory requirements. Still, some issues remained open and will be treated as part of the Fire Protection Action Plan until completion. The new Fire Hazard Analysis has been already included in the Krško NPP PSA model.

For the implementation of the Periodic Safety Review recommendations an action plan was approved by SNSA. The action plan includes issues from PSR findings, Westinghouse Owners Group recommendations, issues from the Regulatory Conformance Program (Compliance with NRC requirements), as well as some specific SNSA requirements.

PSR tasks are arranged into several groups:
- Ageing management program (AMP),
- Krško Individual Plant Examination (IPE) and IPE for External Event (IPEEE) supporting activities,
- Krško operational problems closure activities,
- Krško IAEA RAMP mission recommendations closure activities,
- Accident analyses closure activities,
- Krško Standard Technical Specifications (STS) closure activities,
- Krško Regulatory Conformance Program (RCP) closure activities,
- Potential maintenance problems closure activities,
- Potential Environmental Qualification problems closure activities,
- Potential design problems closure activities,
- Potential seismic design problems closure activities (PSHA),
- Krško plant specific mechanical analyses closure activities (MA).

The issues were evaluated and ranked according to the risk associated with them. Most of the issues are to be resolved by the end of 2008. The PSR Action Plan will be completed by the end of 2010.

In 2004 the fuel cycle was extended to 18 months. No additional safety analyses were needed since fuel cycle extension was already evaluated and approved by the SNSA during the plant modernisation and uprate in 2000. The only related licensing process performed was due to using more effective burnable poisons (discussed in detail in Article 14).

In 2006 both low pressure turbines were replaced. Besides a longer maintenance interval the benefit of the new turbines is higher efficiency and thus secondary power uprate by 20 MWe (discussed in detail in Article 14).

The planning and construction of several new hydroelectric power plants upstream and downstream of the Krško NPP is under way. That is why several studies about the Krško NPP safety are being prepared, such as "Assuring the necessary cooling capability for the Krško NPP after the construction of hydroelectric plants Brežice and Mokrice", "Determination of synthetic flood waves for a long return period", "The model of the Sava river – High water waves", "The model of the Sava river – Determination of a Probable Maximum Flood", "The model of the Sava river – The Breach waves", "Possible solutions for flood protection improvement of the Krško NPP". The results of the studies will show if and how the new hydro power plants would impact the Krško NPP safety with regard to flood protection and what measures shall be taken to assure the adequate level of nuclear safety. The plant has also started the process of inclusion of new hydrological data into the plant's Updated Safety Analysis Report as part of the PSR action plan.

The Krško NPP operates with the operating license issued in 1984 and new revisions of Technical Specifications and updates of the Final Safety Analysis Report approved by the SNSA. The lifetime of the plant, as provided by the design, is forty years, i.e. until 2023. The designed lifetime was also repeated in the Agreement between Slovenia and Croatia on Krško NPP adopted in 2003, where there is also a provision considering lifetime extension.

Article 111 of the Act on Ionising Radiation Protection and Nuclear Safety (2002 Act) stipulates that the operating licence of a nuclear installation can be extended for a 10-year period when the facility fulfils the prescribed conditions. Article 82 defines that an approved report of the Periodic Safety Review is the condition for an extension of the operating licence.

In conclusion, the Slovenian regulations and practices are in compliance with the obligations of Article 6.

ARTICLE 7. LEGISLATIVE AND REGULATORY FRAMEWORK

1. Each Contracting Party shall establish and maintain a legislative and regulatory framework to govern the safety of nuclear installations.

2. The legislative and regulatory framework shall provide for:

(I) the establishment of applicable national safety requirements and regulations;

(II) a system of licensing with regard to nuclear installations and the prohibition of the operation of a nuclear installation without a license;

(III) a system of regulatory inspection and assessment of nuclear installations to ascertain compliance with applicable regulations and the terms of licenses;

(IV) the enforcement of applicable regulations and of the terms of licenses, including suspension, modification or revocation.

7.1 Description of the Legislative and Regulatory Framework

In the Republic of Slovenia the main act in the area of nuclear and radiation safety is the Act on Ionising Radiation Protection and Nuclear Safety (Off. Gaz. RS, 67/2002 – hereinafter referred to as »2002 Act«). As defined in the first Article of this act, its main purpose is »to regulate ionising radiation protection, with the aim of reducing the detrimental effects on health and reducing to the lowest possible level radioactive contamination of the environment due to ionising radiation resulting from the use of radiation sources, while at the same time enabling the development, production and use of radiation sources and performing radiation practices.«

The 2002 Act entered into force on October 1, 2002. From that day two previous Acts ceased to apply, namely:

- Act on Radiation Protection and the Safe Use of Nuclear Energy (1984 Act), and
- Act on Implementing Protection Against Ionising Radiation and Measures on the Safety of Nuclear Facilities (1980 Act).

The 2002 Act was amended in 2003 and 2004 as explained in our previous national report (in spite of the amendments the short name “the 2002 Act” remains unchanged, and applies to the latest version with the amendments included). The 2002 Act also allows for the regulations issued on the basis of the 1984 and 1980 Acts to apply until new regulations, which are to be adopted pursuant to provisions of the 2002 Act, are issued. Based on the 1984 Act, a few regulations for carrying into effect radiation protection and nuclear safety provisions are still in force.

The comprehensive legislative and regulatory framework which governs the areas related to nuclear and radiation safety is attached to this report (Appendix I). It consists of the national legal frame and of those international instruments (multilateral and bilateral treaties, conventions, agreements/arrangements) to which Slovenia is a party.

Based on the 2002 Act, 22 decrees and regulations have been issued.

All other decrees and regulations are expected to be adopted and issued in 2007 and early 2008.

7.2 Summary of Legislation

With regard to nuclear safety, the 2002 Act is the most important document, providing requirements for protection from the effects of ionising radiation and nuclear safety measures.

The definition of "nuclear safety" is given in paragraph 20 of Article 3:
"*Nuclear safety* shall mean technical and organisational measures which result in the safe operation of a nuclear facility, prevention of emergencies or mitigation of the consequences of emergencies, and which protect exposed workers, the population and the environment against ionising radiation."

Besides the main principles (among others also “primary responsibility for safety”, “the causer-pays principle”, “justification”, “optimisation”, “ALARA” and “the preparedness principle”) the 2002 Act includes, with respect to nuclear and radiation safety area, also provisions on:
- reporting an intention to carry out radiation practices or to use radiation source;
- licensing of the radiation practice or use of radiation source;
- classification of facilities (nuclear, radiation and less important radiation facilities);
- licensing procedures with respect to siting, construction, trial operation, operation and decommissioning of nuclear, radiation and less important radiation facilities;
- radioactive contamination and intervention measures;
- radioactive waste and spent fuel management;
- import, export and transit of nuclear and radioactive materials and radioactive waste and spent fuel;
- physical protection of nuclear materials and facilities;
- non-proliferation and safeguards;
- administrative tasks and inspection;
- penal provisions.

With regard to the prescribed measures on radiation protection or nuclear safety, facilities are classified into nuclear facilities, radiation facilities and less important radiation facilities. A basic selection of facilities classified as nuclear facilities has already been done by the Act itself, where in paragraph 22 of Article 3 a nuclear facility is defined as “a facility for the processing or enrichment of nuclear materials or the production of nuclear fuels; a nuclear reactor in critical or sub-critical assembly; a research reactor; a nuclear power plant and heating plant; a facility for storing, processing and depositing nuclear fuel or high radioactive waste; a facility for storing, processing or depositing low and medium radioactive waste. A nuclear facility shall also mean several of nuclear facilities when they are functionally linked in the same geographically confined territory and are managed by the same person.” Furthermore the Governmental Decree on radiation Practices (UV 1) determines the criteria for the classification of radiation facilities and less important radiation facilities.

The responsibilities for radiation protection are divided among two authorities. The responsibility for supervision of nuclear safety in nuclear facilities and radiation practices outside medicine and veterinary activities lies with the Slovenian Nuclear Safety Administration - SNSA, while the responsibility for supervision of radiation practices in medicine and veterinary activities lies with the Slovenian Radiation Protection Authority – SRPA (see more in the report under Article 8 – Regulatory Body).

The licensing system can be divided into four steps after the preliminary condition (the planning of the location of nuclear facilities in the national site development plan) is fulfilled:
- application for the license for the land use – the competent body is the Ministry of the Environment and Spatial Planning, with preliminary approval of radiation and nuclear safety - the competent body is the SNSA,

- application for the license to construct a facility – the competent body is the Ministry of Environment and Spatial Planning, with an approval from the SNSA,
- application for the license for trial operation – the competent body is the SNSA,
- application for the operation and the decommissioning – the competent body is the SNSA.

7.3 Inspection and Enforcement

In accordance with Article 138 of the 2002 Act, inspection and enforcement of nuclear and radiation safety rests with the Slovenian Nuclear Safety Administration (SNSA). On the other hand, the Slovenian Radiation Safety Administration (SRPA) is in charge of inspection and enforcement of radiation practices and use of radiation sources in health and veterinary care. Inspection includes control over the implementation of the provisions of the 2002 Act, the ordered measures and the regulations and decrees issued in accordance with the 2002 Act.

The elements of risk informed inspection are already partially incorporated into the current annual inspection program, such as inspection assessment of the activities and events in the light of Probabilistic Safety Assessment (PSA) review and tracking of shutdown safety during the outages with regard to PSA of safety equipment taking into account the on-going activities status.

Within the scope of inspection an inspector may:
- issue decisions, conclusions and/or orders within the framework of administrative proceedings,
- order measures for radiation protection and measures for radiation and nuclear safety,
- order cessation of a radiation practice or use of a radiation source when it is established that an applicable license has not been issued or if the prescribed methods of handling a radiation source or radioactive waste have not been followed. Appeal against such a decision of an inspector does not prevent its execution.

The 2002 Act has indeed only one article on inspection since there is a general Act on Inspection (Official Gazette of the RS, 56/02) which stipulates the general principles of inspection: its organisation, status, rights and duties of inspectors, inspection measures and other issues in relation with inspection, and which is to be followed also by nuclear and radiation safety inspectors.

For each inspection a separate administrative procedure (case) has to be open. Such “inspection case” may be closed /terminated by the decision/conclusion if there is no evidence of non-compliances with the regulations, violations of the provisions of the legislation or if the inspector does not require corrective measures. In all other situations the inspector has to issue a written decision/conclusion to the licensee to remedy the errors and/or violations found. While performing inspection the inspector may order, for example, material sampling, temporary or permanent seizure of any means, documents check, searching of premises, examinations, hearings, etc.

The enforcement of applicable regulations and of the terms of the licenses is ensured by the application of penal provisions, inspection provision and provisions related to suspending of the operation of a nuclear facility, as provided for in Articles 115 and 116 of the 2002 Act.

The SNSA may order the suspension of the operation of a nuclear facility on the initiative of a competent inspector or ex officio.

The SNSA orders the suspension of the operation of a nuclear facility on the initiative of a competent inspector when it can be concluded that the prescribed conditions for radiation or nuclear safety are not fulfilled and the licensee has not ensured their fulfilment within a reasonable period of time in spite of the request from the inspector to remedy the deficiencies.

The SNSA orders the suspension of the operation of a nuclear facility ex officio if the licensee did not submit for approval the changes and amendments of the evaluation of the protection of exposed workers against radiation within the prescribed period of time, or if the licensee has started maintenance work, testing or introducing modifications, which are significant for the radiation or nuclear safety of a facility, without the SNSA having given prior approval for this.

There is no right of appeal against the decision on suspension of the operation of a nuclear facility.

In addition, the inspector must apply also the provisions of the general Act on Minor Offences (Official Gazette No.3/2007 – official consolidated text). Based on this act minor offences are divided into two main categories: for the first one the inspector may charge a fine (penalty payment) directly, while for the second the inspector may only initiate the administrative offence prosecution to the competent court. The same applies when an inspector finds more serious unlawful activities, omissions or negligence, which the Penal Code qualifies as a criminal offence; also in these cases, defined by the Criminal Procedure Act, the inspector may only report and initiate the criminal offence to a public prosecutor.

In conclusion, the Slovenian regulations and practices are in compliance with the obligations of Article 7.

ARTICLE 8. REGULATORY BODY

1. Each Contracting Party shall establish or designate a regulatory body entrusted with the implementation of the legislative and regulatory framework referred to in Article 7, and provided with adequate authority, competence and financial and human resources to fulfil its assigned responsibilities.
2. Each Contracting Party shall take the appropriate steps to ensure an effective separation between the functions of the regulatory body and those of any other body or organisation concerned with the promotion or utilisation of nuclear energy.

The 2002 Act divided the competencies in nuclear and radiation safety among two regulatory bodies, namely the Slovenian Nuclear Safety Administration (SNSA) and the Radiation Protection Administration (SRPA). The SNSA is accountable for nuclear safety and safety of industrial radiation sources, while the SRPA is accountable for radiation protection of patients, medical surveillance of exposed workers, surveillance of workplaces, dosimetry and dose registers and education in the area of radiation protection. Besides this general division there are some parts of the legislative and regulatory framework referred to under Article 7 of this Report, which are entrusted to other institutions, i.e. the Administration for Civil Protection and Disaster Relief of the Ministry of Defence is accountable for emergency preparedness and planning, while the Ministry of Interior has the responsibility for physical protection.

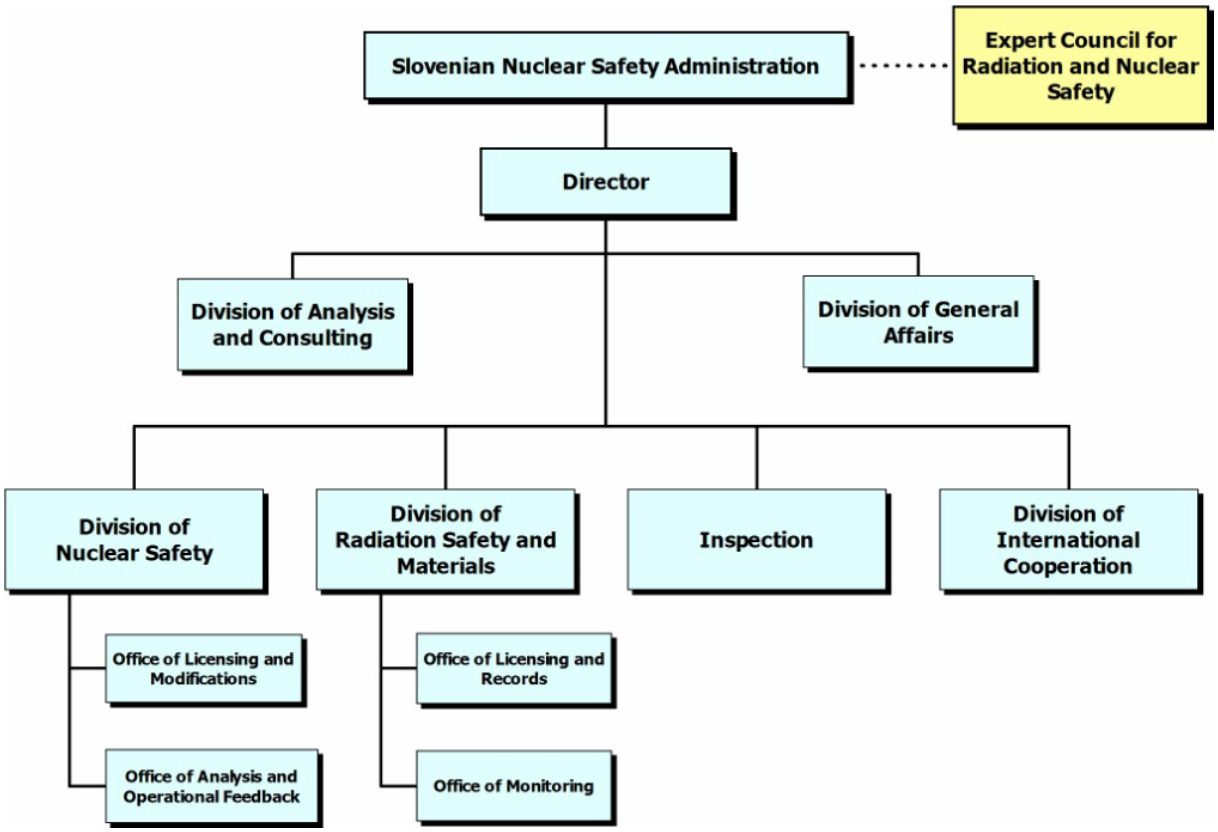
8.1 Slovenian Nuclear Safety Administration (SNSA)

The SNSA, as a regulatory body in the area of nuclear and radiation safety, is a functionally autonomous institution within the Ministry of the Environment and Spatial Planning (hereinafter Ministry). The SNSA's responsibilities and competencies are defined in the Decree on Administrative Authorities within Ministries: the SNSA performs specialised technical and developmental administrative tasks and tasks of inspection in the area of radiation and nuclear safety, radiation practices and use of radiation sources (except in health and veterinary care), protection of the environment against the ionising radiation, physical protection of nuclear materials and nuclear facilities, non-proliferation of nuclear weapons and safeguards of nuclear goods; the SNSA furthermore monitors the radioactivity in the environment and third party liability.

The precise competencies of the SNSA and other relevant administrations, which are entrusted with the implementation of the legislative framework, are prescribed in particular in the 2002 Act and other legislation listed in Appendix I.

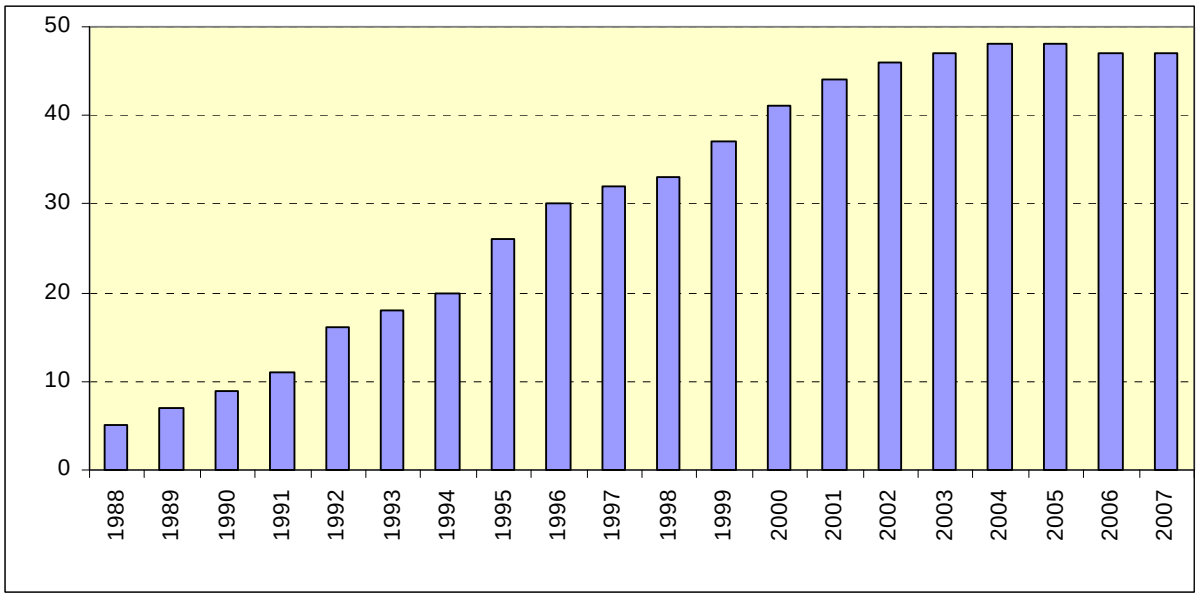
The SNSA is organised into six divisions: Division of Analysis and Consulting,
- Division of General Affairs,
- Division of Nuclear Safety,
- Division of Radiation Safety and Materials,
- Division of International Co-operation,
- Inspection.

Current organisational chart approved by the Government in 2003, is shown in the figure.



Organisational Chart of the SNSA

According to the Establishment Plan, approved by the Government in 2006, 47 permanent staff positions are foreseen for the SNSA for the years 2006, 2007 and 2008. The manpower development is shown in the figure.



Manpower Development of the SNSA

The budget of the SNSA is determined on the basis of the realisation of the previous year, taking into account new needs which have to be well justified. The budget is the only source for financing the SNSA's basic activities. The operators of

nuclear or radiation installations and other licensees do not pay any licensing or inspection fees. The only fee, which is envisaged by the general Act on Administrative Fees, is the so-called administrative tax for the licensing (administrative) procedure, which is of symbolic value. Such fee is paid to the state budget and not to the SNSA account. Furthermore, if the SNSA determines that some expertise is needed within the licensing (administrative) procedure the costs are, by the provision of the Act on General Administrative Procedure, borne by the applicant.

Although the SNSA is within the Ministry, it still has its own share in the Ministry's budget and is independent in allocating the programs, projects and other expenses from the budget. The State budget is prepared for biennium cycle. The composition of the SNSA's budget for 2007 and 2008 is shown in Table 8.1. This budget comprises all activities within the SNSA competences.

The SNSA's Budget for 2007 and 2008

STRUCTURE		2007 (in EUR)	2008 (in EUR)
Salaries/wages		1,597,160	1,610,573
Material expenditures		211,083	293,192
Investments and maintenance costs		29,211	29,211
Goal-oriented research programme: assuring support to nuclear safety		104,323	104,323
Membership fees (IAEA, OECD/NEA membership, USNRC programs)		355,533	297,112
Outsourcing	Nuclear safety	171,994	133,487
	Radiation safety	191,278	139,560
Euratom research funds (FP 6): EURANOS project F16R		8,346	8,763
Total		2,668,928	2,616,221

8.2 Other Regulatory Bodies

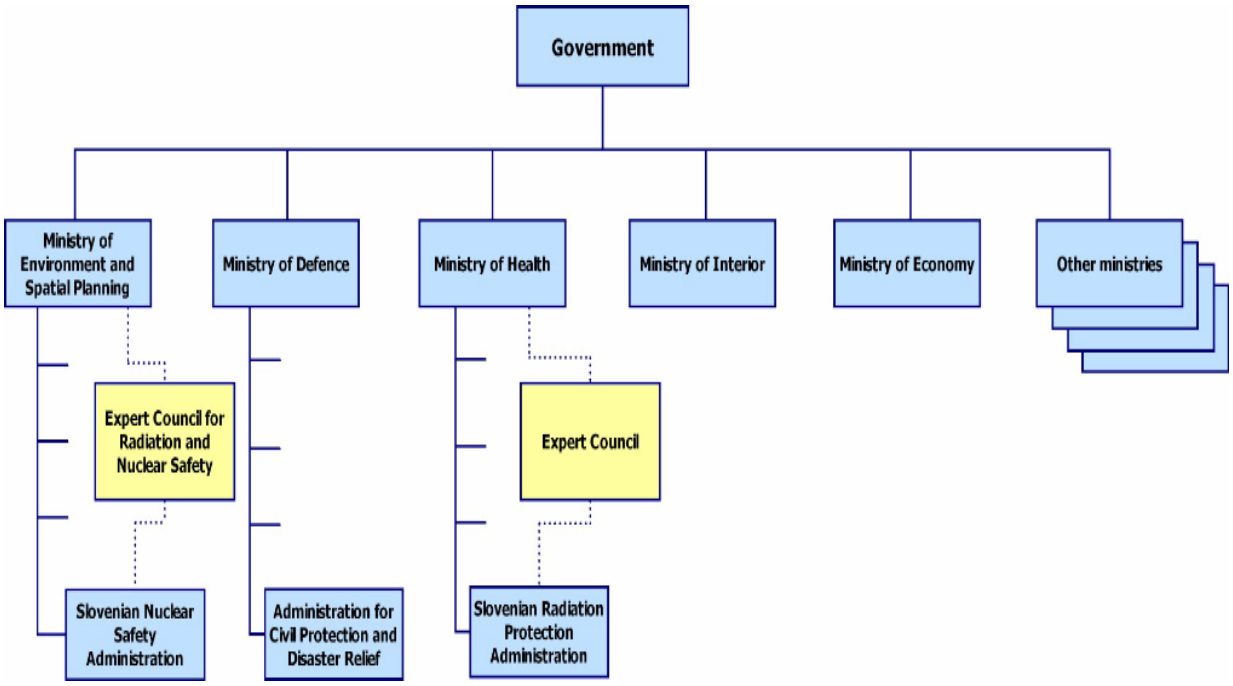
The 2002 Act gives the competence in the area of radiation practices and use of radioactive sources in heath and veterinary care to the Slovenian Radiation Protection Administration (SRPA), which was established in March 2003 within the Ministry of Health. The SRPA responsibilities and competencies are also generally defined in the above mentioned Decree on Administrative Authorities within Ministries.

The SRPA performs technical, administrative, inspection and development tasks in the area of radiation practices and use of radiation sources in health and veterinary care; health protection of people against detrimental effect of ionising radiation; systematic inspection of working and living premises due to exposure of people to the natural radiation sources; implementation of monitoring of radioactive contamination of foodstuffs and drinking water; reduction, restriction and prevention of health detrimental effects of non-ionising radiation and assessment of compliance and authorisation of radiation protection experts.

Besides the SNSA and the SRPA, also some other administrations, ministries and organisations are entrusted with the implementation of the legislative frame which governs the safety of nuclear installations, in particular:

- The Civil Protection and Disaster Relief Administration (within the Ministry of Defence), as the operator of the National Notification Centre, is responsible for notification procedures in the event of radiological emergency and for the off-site emergency planning.
- Ministry of Interior, inter-alia, has competencies in the area of physical protection of nuclear materials and nuclear facilities in general (while the SNSA only approves the safety analysis report – to which the plan of physical protection is attached as a separate and restricted document).
- The Agency for Radwaste Management
- The Fund for Decommissioning of the Krško NPP
- the Nuclear Insurance and Reinsurance Pool
- Technical Support Organisations.

The position of the SNSA and the SRPA, as well as Civil Protection and Disaster Relief Administration and Ministry of Interior, in the governmental structure is shown in the figure.



The SNSA and SRPA within the governmental structure

Based on the 2002 Act, the Expert Council for Radiation and Nuclear Safety was appointed in mid 2003 as an advisory body to the Ministry of Environment and the SNSA, and the Expert Council for the Protection of the People against the Ionising Radiation, for radiological procedures and use of radiological sources in health and veterinary care, as an advisory body to the Ministry of Health and SRPA.

8.3 Effective separation of functions

The Slovenian Nuclear Safety Administration (SNSA) is an administrative body in the structure of the Ministry of the Environment and Spatial Planning, which was established to perform administrative, inspection and other control tasks. Although the following was pointed out already in our answers to the questions relating to the Slovenian report within the 2005 review process, it is worth mentioning again

that pursuant to the Act on Public Administration, as amended in 2004, the energy sector has been re-transferred from the Ministry of Environment to the Ministry of Economy. The SNSA is independent in its professional decisions. Licensees may appeal to the Ministry of Environment, but the 2002 Act prevents appeals to the Ministry for some decisions (as for example, decision on the prohibition or temporary suspension of the use of a radiation source; decision on the withdrawal of the licence or on the suspension of the operation of a radiation /nuclear facility; decision on rejection of the changes, significant for the radiation/nuclear safety and proposed by the operator, etc.). While the SNSA may only draft general regulations or decrees which are later adopted and passed either by the Minister or the Government, the SNSA issues individual legal acts, i.e. decisions to the licensees. The Inspection for Nuclear Safety is independent and is not part of the Inspectorate for the Environment and Spatial Planning, which comprises all other inspections within the same Ministry. The SNSA has its own budget, which is part of the budget of the Ministry of the Environment and Spatial Planning. Independent technical expertise in the relevant areas is available in the SNSA. The 2002 Act also enables independent financing of technical support organisations. The SNSA has the authority to communicate independently its regulatory requirements, decisions and opinions to the public; it may independently liaise with regulatory bodies of other countries and with international organisations to promote co-operation and exchange of regulatory information.

A similar arrangement applies to the Slovenian Radiation Safety Administration (SRPA), except that it is a part of the Ministry of Health.

In conclusion, the Slovenian regulations and practices are in compliance with the obligations of Article 8.

ARTICLE 9. RESPONSIBILITY OF THE LICENCE HOLDER

Each Contracting Party shall ensure that prime responsibility for the safety of a nuclear installation rests with the holder of the relevant licence and shall take the appropriate steps to ensure that each such licence holder meets its responsibility.

Article 4 (the main principles) of the 2002 Act provides, in paragraph 6:
"The user of a radiation source shall be responsible for radiation protection and the facility operator shall be responsible for the nuclear safety of a nuclear facility (the principle of prime responsibility)."

Throughout the 2002 Act there are several provisions designed for the execution of the above stated principle. For example, the 2002 Act provides that the operator of a radiation or nuclear facility must:

- ensure the safety of a concerned facility, including the safety of radioactive substances, radioactive waste or spent fuel management, which are found or produced in a facility (Art. 57),
- ensure that programs of recording and analysing operational experience at nuclear facilities are implemented ; in the assessment, examination and improvement of radiation and nuclear safety the operator must take into account the conclusions of such programs (Art.60),
- have sufficient financial resources guaranteed throughout the operating lifetime of a facility for implementing the prescribed measures of radiation and nuclear safety (Art.61),
- ensure throughout the operating lifetime of a facility a sufficient number of qualified workers with suitable education, additionally trained for the work activities related to radiation and nuclear safety (Art. 62),
- set up and implement a quality assurance programme (Art.63).

The above stated and generally prescribed requirements and obligations of the operator are elaborated in detail in the existing regulations and decrees.

In conclusion, the Slovenian regulations and practices are in compliance with the obligations of Article 9.

ARTICLE 10. PRIORITY TO SAFETY

Each Contracting Party shall take the appropriate steps to ensure that all organisations engaged in activities directly related to nuclear installations shall establish policies that give due priority to nuclear safety.

10.1 General Approach to Safety

The priority to nuclear safety is given in the general principles of the 2002 Act, which regulates the protection against ionising radiation in order to reduce the detrimental effects on health and reducing to the lowest possible level radioactive contamination of the environment, the implementation of nuclear safety measures and also, in the case of use of nuclear materials, special protection measures. The Act defines nuclear safety as "technical and organisational measures which result in safe operation of a nuclear facility, prevention of emergency events or alleviation of the consequences of emergency events, and which protect exposed workers, the population and the environment against ionising radiation". The principles and priorities of nuclear safety remained the same since the Second Review Meeting.

Safety culture at the Krško NPP was extensively described during the Second Review Meeting. The plant policy on safety culture is defined in documents such as: Quality Assurance Plan, Plant Management Manual, Krško NPP Policies and Goals, Company General Employee Training Handbook, Operating Experience Assessment Program, Codex on Safety and Business Ethics etc.

The Agreement between Slovenia and Croatia on the Krško NPP in 2003 has defined that operation of the Krško NPP is directed by a management team consisting of two members, where the president is a Slovenian and the other member is a Croatian. In case of a disagreement between the two members, the president holds a decisive vote to implement his decision if such disagreement could jeopardise the safety of operation of the plant.

Monitoring of the routine plant operation is achieved by the line management through daily meetings. A nuclear safety overview is achieved through the function of different committees and departments, such as the Krško Operating Committee, the Krško Safety Committee and the Independent Safety Engineering Group (ISEG). Members of ISEG are experts from different areas, the majority have operational background and are trained in human performance areas, analysis techniques, etc. ISEG's independence is achieved and assured through its reporting channel to the plant senior management and the plant management supervisory board. The ISEG maintains a Performance Indicators Program which is based on the document Operational Safety Performance Indicators for Nuclear Power Plants, IAEA TECDOC-1141 and WANO performance indicators. Establishing such a program of monitoring and assessing operational plant safety performance indicators represents an effective safety culture of the plant personnel by itself. The results of these performance indicators reviews identify weak points and define corrective actions for the adverse trend indicators.

Independent reviews of outage activities and surveillance tests are performed by the Technical Support Organisations (TSO). The TSOs are engaged for the inspection, witnessing and safety evaluation of refuelling, surveillance and modifications activities. Some of the important issues which were considered during the outage in 2006 are problems with ageing of the switchyard, leakage of the reactor vessel head vent path, overheating of the auxiliary feedwater pumps bearing, and the control program for heat exchangers of the component cooling system according to NRC GL 89-13. The safety analysis and the safety assessment

of plant changes with significant impact on radiation or nuclear safety shall also be reviewed by the TSOs, for example the Replacement of the NEK Alarm System, the new Low Pressure Turbine Missile Probability Report, Changes of the Rod Insertion Limit and Rod Bank Overlap, BEACON-TSM NEK Core Monitoring and Operations Support System, and the Radial Peaking Factor Limit Report.

The plant operation is carefully controlled by trained personnel who operate it in accordance with approved procedures. A maintenance, test or modification requirement is processed through a detailed planning and scheduling system. Throughout this process all nuclear safety activities receive careful consideration based on Standard Technical Specification parameters, supported by the Probabilistic Safety Analysis. During the outage, the PARAGON computer code is used. The success of the PARAGON methodology is the capability to provide plant and management personnel with understandable results from both deterministic evaluations of plant safety and quantitative risk assessments. The NEK use of PARAGON involves both of these approaches. The deterministic portion of PARAGON is used to model the NPP Krško Shutdown Technical Specifications and administrative considerations. The probabilistic portion of PARAGON uses industry and NEK specific initiating events and other risk elements pertaining to shutdown to derive a quantitative risk assessment for various end states, including core damage and RCS boiling.

In the area of Severe Accident, important steps have been taken with respect to mitigation of severe accidents. Plant-specific Severe Accident Management Guidelines (SAMGs) are in use, based on the Westinghouse Owners Group's SAMG and a plant-specific Probabilistic Safety Analysis Level 2 study.

Permanent safety improvements are made by a number of modifications. All changes are evaluated for licensing applicability in accordance with the criteria defined in the United States 10 CFR 50.59. For that purpose an administrative procedure, the Authorisation of Changes, Tests and Experiments, was developed.

The role of training has been fully recognised by the Krško NPP management and is reflected by the number of training programs. The Systematic Approach to Training is accepted as the best currently available method. From similar power plants in the United States the Job and Task Analysis is being used as a basis to determine many of the training requirements for the personnel at the Krško NPP.

In conclusion, the Slovenian regulations and practices are in compliance with the obligations of Article 10.

ARTICLE 11. FINANCIAL AND HUMAN RESOURCES

1. Each Contracting Party shall take the appropriate steps to ensure that adequate financial resources are available to support the safety of each nuclear installation throughout its life.
2. Each Contracting Party shall take the appropriate steps to ensure that sufficient numbers of qualified staff with appropriate education, training and retraining are available for all safety-related activities in or for each nuclear installation, throughout its life.

The licensee has the prime responsibility for the safety of the nuclear power plant. This responsibility includes providing both adequate financial and human resources to support the safety of the power plant throughout its lifetime.

11.1 Financial Resources

The 2002 Act introduced as one of the main principles the »causer pays« principle (paragraph 7 of Article 4):

» the user of a radiation source shall cover all costs related to the radiation protection measures in accordance with this Act, the preparedness for emergencies and intervention measures, as well as the costs of mitigation of the consequences of an emergency.«

Based on this principle the 2002 Act introduced a provision (Article 61) which relates strictly to the obligation of the operator of a radiation or nuclear facility to ensure sufficient financial resources guaranteed throughout the operating lifetime of a facility for implementing the prescribed measures of radiation and/or nuclear safety.

Such financial resources must be guaranteed to the operator by the current owner of the facility, to the level of all operational costs as well as costs of maintenance investments, including investments in technological renewals relating to the measures of radiation or nuclear safety.

For the time being the Krško NPP operator has allotted enough financial resources for maintaining the appropriate level of nuclear safety by their owners, the Slovenian state owned electrical utility and the Croatian state owned electrical utility. The price of a kWh of electricity produced by the Krško NPP is set out by the NPP management and approved by the Supervisory Board, based on the yearly business plan. Such price covers all gross operating expenses, i.e. electricity generation costs as well as necessary investments. Besides this the Supervisory Board annually approves the Long-term (five years) Investment Plan. The amount foreseen for investments and improvements is stable and gives the management proper flexibility for long term maintenance of nuclear safety. Both owners are obliged to settle their respective obligations towards the Krško NPP within 15 days of issuing an invoice. In recent years there have been no problems with any delayed payments.

The suitability of ensuring financial resources, the amount thereof and the forms of warranties, as well as the method to be used for the enforcement of warranties are assessed by the SNSA during the procedure for issuing the operation license for a radiation or nuclear facility.

Financing of measures for the protection against ionising radiation and nuclear safety is prescribed in Chapter 12 of the 2002 Act, where division between the regular (and extra) costs of the user of a radiation source (Article 132) and the public expenses (Article 133,134) is defined.

Besides other explicitly itemised tasks and measures, the operator of a radiation source must cover also the costs of ensuring the sufficient number of qualified workers involved in the operation of a radiation or nuclear facility.

In accordance with the provisions of the Treaty between the Government of the Republic of Slovenia and the Government of the Republic of Croatia on Regulating the Status and Other Legal Relations with regard to Investment in the Krško Nuclear Power Plant, Its Exploitation and Decommissioning, which entered into force in March 2003, Slovenia and Croatia are obliged to meet the obligations relating to the management and exploitation of the joint power plant as well as one half of the radioactive waste and spent fuel which result from the operation of the Krško NPP and which will result from its decommissioning. On the basis of the treaty, Slovenia and Croatia have also assumed equal obligations relating to the radioactive waste and spent fuel management. The treaty envisages that both contracting parties shall prepare a joint Programme of disposal of radioactive waste and spent nuclear fuel as well as a joint Decommissioning programme. Both programmes were prepared and adopted by the authorities in Slovenia and in Croatia, as provided by the treaty. The treaty stipulates that Slovenia and Croatia shall each establish a special fund in a period of twelve months at the latest after the entry into force of the treaty to collect financial resources for their half of the expenses to cover radioactive waste and spent nuclear fuel management and final plant decommissioning.

For the Slovenian share adequate financial resources for the decommissioning of the Krško NPP and for the construction of a repository are ensured by the provisions of the Act on the Fund for Financing Decommission of the Krško NPP and Disposal of Radioactive Waste from the Krško NPP (adopted in 1994). The levy for every kWh of the Slovenian share of electric energy produced by the Krško NPP is regularly contributed to the Slovenian fund for decommissioning. On the other hand Croatia has not yet established an independent fund to collect financial resources for the decommissioning. In April 2006 Croatia adopted the Decree on the payment of funds for the decommissioning and for the storage of radioactive waste and spent nuclear fuel of the Krško Nuclear Power Plant. The decree, however, only represents the first step towards the fulfilment of Croatia's obligations, and does not fully meet the provisions of the treaty.

In the case of a nuclear accident financial resources to compensate the claim are provided through the Slovenian third party liability legislation and through Nuclear Insurance and Reinsurance Pool, taking into account that in 2001 Slovenia became a party to the Paris Convention on Third Party Liability in the Field of Nuclear Energy, and in 2003 also a Party to the Brussels Supplementary Convention.

11.2 Human Resources, Training and Qualification

11.2.1 Krško NPP

The total number of the Krško NPP staff at the end of the year 2006 was 573, adequately covering all necessary functions for the technical operation, including

QA, training and engineering. There are 6 operations shifts with a minimum shift composition of 5 licensed operators per shift, including an on-duty shift engineer.

Training and qualification activities at the Krško NPP are governed by:

- the 2002 Act,
- the new Regulation, "Regulation on qualification requirements to be met by workers performing duties and tasks of safety significance in nuclear and radiation installations", adopted in August 2005, entering into force on January 1, 2006,
- the plant Updated Safety Analysis Report, applicable plant procedures,
- the annual training program, approved by the SNSA.

The education and training requirements are outlined in the Updated Safety Analysis Report, Chapter 13.2 "Training". The process is further detailed in the administrative procedure Training and Qualification of the Krško NPP Personnel. Further training procedures cover specific areas, such as the Licensed Operator Training Program, the Licensed Shift Engineer Training Program, the Non-licensed Operator Training Program, the Health Physics Training Program, etc. In addition to this, the Krško NPP personnel are trained and examined using other relevant standard industry guides in areas like safety at work, hazardous chemicals, welding, non-destructive testing, specific equipment and machinery operation, and safety at work.

In general, training programs are divided into initial and continuous training. In addition to the training of the Krško NPP personnel, specific training courses are conducted for subcontractors, specifically in the area of General Employee and Radiation Protection training, and specific Work practices. Systematic Approach to Training principles, including Job and Task Analyses, were applied for developing technical training programs.

Since the commissioning of the full-scope replica simulator in the Krško NPP training centre the licensed operator and shift engineer training program is completely implemented in-house. The continuing training for licensed personnel consists of multiple weekly training segments (typically 4 per year) which comprise a two-year cycle of requalification training. Each day of training consists of classroom lecture topics and practical simulator exercises. Initial licences and their renewals are obtained based on examinations conducted by the SNSA's Expert Commission for the Examination of the Operator's Qualifications.

In 2002 the first group of operations personnel successfully finished their entire training program for reactor operator on the Krško NPP full scope simulator. The second generation has completed initial training in 2004, while the new generation of operations personnel started initial training in 2006. The initial training program for 16 new candidates is planned to be finished at the end of 2008.

In addition to training the full scope simulator is used also for other purposes. The new revision of the translated Abnormal Operating Procedures was validated on the Krško full scope simulator in 2005. Some unusual events were analysed and corrective actions were proposed with emphasis on human performance. Identification of procedures shortcomings and their improvement is a continuous process. Validation of some simulator scenarios in the scope of the Periodic Safety Review recommendations was performed on the simulator in 2006.

The Krško NPP will continuously update the full-scope simulator configuration commensurate to plant changes (model improvements), and maintain and develop training programs in compliance with international practice, regulation and trends,

as well as plant specific needs and situations. In parallel, also the level of knowledge and skills of the simulator instructors is constantly being maintained and improved.

There are other types of training courses that are conducted for specific areas like Refuelling Operations training, Maintenance training, Engineering training, Radiation Protection training, Chemistry training, Security training, Emergency Preparedness training, etc.

Maintenance personnel training is conducted in a dedicated maintenance training centre by using the Krško NPP own resources (instructors and subject matter experts), or by contracting such services from certified institutions or equipment vendors. Supervisory and technician level personnel are also specialised at various equipment vendor training facilities. The maintenance training centre houses classrooms and laboratories that are designed for various maintenance groups and is equipped with practical tools needed to conduct hands-on training. One of them, the simulator flow loop, was completed in the beginning of 2007.

11.2.2 Slovenian Nuclear Safety Administration and Technical Support Organisations

The Slovenian Nuclear Safety Administration (SNSA) recruits mainly experienced staff, with several years of adequate experience in other institutions. In addition, the SNSA makes sure that every employee goes through at least two months of initial training relating to nuclear technology at the Nuclear Training Centre in Ljubljana or at the US NRC Training Center in Chattanooga, USA. SNSA employees take part in international workshops and courses on topics related to their areas of work several times per year. In the past few years (between 2003 and 2006), special training was also conducted for the SNSA personnel involved with the Krško NPP - classroom training and simulator training with an emphasis on plant design transients and accidents. One SNSA employee successfully completed initial licensed operator training at the Krško NPP. The training of personnel of the Technical Support Organisations is organised according to the type of each institution. They also have access to international workshops, to training courses at the Nuclear Training Centre in Ljubljana and similar events. Furthermore, the 2002 Act stipulates that the training of the TSO's shall be funded from the national budget.

The Programme of long-term assurance of supporting activities in the field of nuclear and radiation safety, adopted by the Government in 2005, is described in Appendix II (Chapter A.vi).

In conclusion, the Slovenian regulations and practices are in compliance with the obligations of Article 11.

ARTICLE 12. HUMAN FACTORS

Each Contracting Party shall take the appropriate steps to ensure that the capabilities and limitations of human performance are taken into account throughout the life of a nuclear installation.

12.1 Legal Requirements

Slovenian legislation covers the human factor issue in Article 62 of the 2002 Act, which defines workers' qualifications and physical as well as psychological requirements. Workers' conditions must be regularly checked. The employer must also ensure regular updating of the workers' professional knowledge. Regulation JV4 further elaborates these requirements. For the work in a radiation or nuclear facility a permit is issued to the workers for a maximum of 5 years according to regulation SV8. Health surveillance of exposed workers is dealt with in Article 39 and review of the assessment of fitness to work in Article 42 of the 2002 Act.

12.2 Licensee Methods and Programs at the Krško NPP

The methods of dealing with human factor issues at the Krško NPP were extensively described at the Second Review Meeting. The methods which are used to prevent, detect and correct human errors are covered by the Operating experience assessment program, which is supported by procedures such as the Use Of Corrective Action Program, the Root Cause Analysis etc. Analysis of human errors is performed mainly by the Independent Safety Evaluation Group. Man-machine interface issues are covered by the Human factors engineering design guidelines, based on ANSI/HFS 100-1988, NUREG-0700, and other documents.

In 2003 there was a detailed review of human factor issues in the scope of the Periodic Safety Review (PSR). PSR established that in the area of human factor the Krško NPP practice is generally consistent with the basic requirements provided in the IAEA guidelines and the current good practice.

The treatment of the human factor in the existing plant specific PSA model is assessed to be adequate. In the years 2005 and 2006 a new analysis of the human factor according to IAEA standard was performed. The PSA model is comprehensive and gives due consideration to the human performance aspects. The NEK PSA plays an important role in supporting the decisions making process relating to the implementation of plant modifications and changes in operating conditions.

The current status of man machine interface features is compliant with the current industry practice of the United States Nuclear Regulatory Commission and the American Nuclear Society, through the plant procedures (e.g. Human Factor Engineering Guidelines, Process Control and Process Information Systems Man Machine Interface). The Main Control Room, the Remote Shutdown Panel, and other important locations are designed according to human factor engineering principles. The man machine interface related upgrading programmes conducted recently were comprehensive. Regular inspections and periodic reviews of these features are conducted and corrective action requests are issued in case where human error may be a contributing factor. Operator's performance trends are evaluated and monitored. The human error trending analysis is performed by the Independent Safety Engineering Group; so far no concerns relating to this have been indicated.
There is a systematic, well defined, and properly documented approach to job and task analysis that covers all safety related tasks performed at the plant. The process focuses on the establishing/enhancement of training requirements relating

to the task; the use of insights in other areas such as physical, psychological and cognitive demands, potential consequences of failure to perform and other is limited. The Periodic Safety Review of the human factor concluded that this limitation may have influence on the potential use of the task analysis results.

Human performance aspects are taken into consideration in setting up the organisation and management of the plant. There are arrangements such as: Quality Assurance Plan, Plant Management Manual, Krško NPP Policies and Goals, Company General Employee Training Handbook, Operating Experience Assessment Program, and others, which focus on developing, communicating, understanding, and monitoring of the strategy to improve safety. These arrangements also cover reporting and analysis of human induced events at the NEK and feedback on the lessons learnt regarding plant operation procedures and training programmes.

Staff workload is strictly regulated for the control room personnel. Workload for the other staff members is regulated by the Slovenian legislation, and overtime is limited to 8 h/week, 20 h/month, and 180 h/year. Two plant procedures deal with working time and salaries. Responsibilities for controlling the workload of the personnel according to the procedures are with the Heads of Departments Heads. Overall monitoring of actual workload for the plant personnel is performed by the Division of Administration on a monthly basis. The staff turnover is rather low and is mostly due to retirement.

Also the SNSA performs a number of activities related to the human factors. Qualification of the licensed personnel is controlled by the SNSA operating staff and by the Ministry of Health (radiation protection staff). The training is normally concluded by examination tests and the results assessed by the examination committee, which is nominated by the regulatory body. As part of event analyses The SNSA performs independently also root cause analyses and determines the human factors that lead to the events. Refuelling outages are supervised by the SNSA and an analysis of the outage activities was performed, which included also the review of organizational deficiencies and human factors found by SNSA inspectors. Based on the NEA system of safety performance indicators, the regulator established a new, safety-oriented system of performance indicators for plant supervision that includes several indicators to monitor human errors, organizational deficiencies and weak safety culture.

At the request of the SNSA a review of the NPP Krško safety culture was performed in 2006 and guidelines for a regulatory evaluation of the safety culture at the plant were prepared by the University Medical Center Ljubljana and the Institute for Occupational Health, Transport and Sport, Ljubljana. This study is described in more detail in Appendix II (chapter A.ii).

In conclusion, the Slovenian regulations and practices are in compliance with the obligations of Article 12.

ARTICLE 13. QUALITY ASSURANCE

Each Contracting Party shall take the appropriate steps to ensure that quality assurance programmes are established and implemented with a view to providing confidence that the specified requirements for all activities important for nuclear safety are satisfied throughout the life of a nuclear installation.

13.1 SNSA Quality Management System

In the year 2001 the SNSA decided to introduce an internal quality management (QM) system mainly due to two basic reasons. Firstly, in order to fulfil its mission as a regulatory body for nuclear and radiation safety, the SNSA should have an adequate quality management system and secondly, the Slovenian Government stimulated the initiation of a quality system in public authorities. With the implementation of QM system the SNSA strives for improving efficiency and effectiveness of the performed tasks in accordance with contemporary lines of international institutions e.g. IAEA.

In the year 2005 the management of the SNSA decided to redefine the management system according to the new IAEA Safety Standards Series No. GS-R-3 “The Management System for Facilities and Activities”. The main objective was:
- to adopt an integrated management system approach which covers all the requirements that are essential for fulfilling the mission of the SNSA,
- to make the management system friendly to those performing the work and those assessing the work,
- to increase employees’ satisfaction
- to increase clients’ satisfaction and public confidence,
- to increase effectiveness and efficiency,
- to increase public reputation and recognition.

The SNSA management system is based on the process approach. The processes are divided into eight core processes and eight supporting processes. The processes are documented at five levels of management documentation:

Level 0 provides a framework for establishing and reviewing quality objectives. It consists of:
- mission,
- vision,
- values and
- management policy and management objectives.

Level 1 includes:
- the management manual, which describes the SNSA management system
- the SNSA annual workplan

Level 2 includes:
- procedures which document core processes and supporting processes

Level 3 includes:
- work instructions which prescribe in detail the performance of a particular process activity

Level 4 includes:
- the required records which provide an evidence of conformity to requirements of the quality management system.

The SNSA is in the final phase of documenting processes and the appurtenant third level documentation. The processes and their implementation have been simultaneously improved according to experience.

In 2005 the SNSA issued its internal Management Manual, which is the top level document describing the mission, vision, values and the main processes within the SNSA, reporting requirements, etc. In 2007 the first internal audit was preformed within the SNSA. The Inspection Division was audited and the audit results were reported at the regular monthly meeting of the SNSA staff. The goal of the SNSA is to acquire the ISO 9001 accreditation in the nearest future.

13.2 The Krško NPP Quality Assurance System

The 2002 Act requires explicitly that the operator of a radiation or nuclear facility must, with a view to quality assurance, set up and implement a quality assurance programme.

The Krško NPP as the license holder is responsible for the overall quality of the design, construction, operation, maintenance and modification of the NPP. The quality assurance programme was implemented already for the design and construction of the plant, and was in full compliance with: the Appendix B to 10 CFR 50 Quality Assurance Criteria for NPP and Fuel Reprocessing Plant, and the QA guidance provided in WASH 12833 Guidance on QA Requirements During Design and Procurement Phase of Nuclear Power Plants and in WASH 1309 Guidance on QA Requirements During the Construction Phase of Nuclear Power Plants, both issued in 1974.

The Krško NPP Quality Assurance Programme is implemented and maintained to comply with the following codes and standards:
- 10CFR50, Appendix B,
- ANSI N 18.7-1976,
- ASME B&PV Code, Section III, NCA-4000;
- ANSI/ASME NQA-1,
- Regulation E-1 (Off. J. SFRJ No. 52/88)
- IAEA 50-C/SG-Q

It consists of the Statement of Policy and Authority, the QA Plan, and associated procedures. The Statement of Policy and Authority, issued by the Krško NPP Management Board, declares the overall policy for the Krško NPP, i.e. “to operate the Krško NPP in a manner which ensures the safety and health of the public, and the personnel on site”. This policy includes also a commitment that the Krško NPP shall comply with all the relevant codes, standards and guides applicable to the operation of the Krško NPP.

NPP Krško developed the following Quality Systems Manuals/directives:
- Krško NPP Quality Assurance Plan (QD-1),
- Quality Control Plan (QD-2),
- Training Programme of the Krško NPP Personnel in the Area of Quality Assurance (QD-3),
- Programme of Inspection of the Secondary Systems - Erosion/Corrosion (QD-4),
- Programme of Inspection of the Fire Protection System (QD-5)
- Quality Assurance Manual – Laboratory for dosimetry (QD-6)
- Inspection Programme for Pressure Vessels (QD-7).

The Quality Assurance Programme includes all planned and systematic actions taken by the Krško NPP, including the suppliers, contractors and consultants, which provide adequate confidence that the structures, systems and components shall

perform the intended safety function in a satisfactorily manner. The programme consists of the Quality Assurance Plan and applicable procedures, and is mandatory for all activities affecting safety-related functions of the nuclear power plant structures, systems and equipment. This can also be applied to non-safety-related items as deemed appropriate by the plant management.

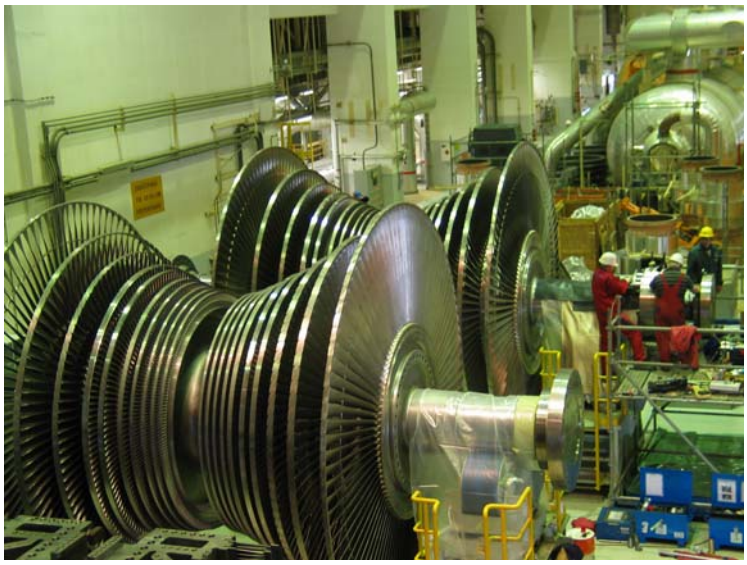
The QA Plan is a top-level quality document for operational phase activities. The requirements, identified by the QA Plan, are implemented according to management directives, programs, plans, procedures or instructions, grouped in plant level manuals, division level manuals and department level manuals and programs. The QA Plan contains eighteen sections, relating to the eighteen criteria of 10CFR50, Appendix B and the intent of the fourteen criteria of 50-C/SG-Q. As cross-referenced in the Quality Assurance Plan, the subject of each section of the plan relates to the criterion on that subject found in 10CFR50, Appendix B and 50-C/SG-Q.

Changes to the description of the QA Programme in section 17 of FSAR and to the QA programme as a separate document are subject to notification of and review by the SNSA prior to implementation.

Revision 4 of the Quality Assurance Plan of 1 April 1999 was the basis for the review within the scope of the Periodic Safety Review (PSR) project. Besides updating the Plan so as to be in compliance with the new organisation, the issues identified by an independent review of the PSR Chapter 4.2. Quality Assurance was also taken into account. The Krško Quality Committee, with the responsibility of advising the Management Board by providing an independent review and audit of QA implementing practices, and the Krško Safety Committee auditing of the QA Program were introduced. New Revision 5 was prepared and approved by the Management Board with the effective date 15 August 2003.

During the OSART mission at the Krško NPP in 2003, one recommendation was issued in the area of quality assurance which aims at plant senior management and requests them to take actions to ensure that the quality assurance functions provide an effective barrier to a potential decline in plant performance. IAEA carried out a follow-up visit to the Krško OSART mission from 7 to 11 November 2005 and stated in the report that recommendation related to Quality Assurance (QA) has been resolved. The Quality System Division has been reorganized. For this purpose the plant has established a Quality and Nuclear Oversight Division. The new division has been formed by integrating the activities of quality assurance, quality control and nuclear oversight. The Quality and Nuclear Oversight Division is also responsible for executing and reporting on the effectiveness of the QA Program implementation to the Management Board.

The Quality and Nuclear Oversight Division is responsible for:
- Design Modification Control,
- Procurement documents control,
- QA review of Plant Procedures,
- Document Control,
- Procurement control,
- Control of special processes,
- Inspection control,
- Audits,
- Self-assessment program,
- Safety culture oversight,
- Human performance oversight,
- Operating experience oversight,
- Corrective Action Program oversight.



The quality management system, which includes quality assurance activities, is built in the established »Plant Corrective Action Program (CAP)«. The Plant CAP, besides the requested corrective actions and analysis, is spread on the non-conformances, audits and observation findings with different codes used for trending issues. Internal audits cover the functional and the cross-functional area in accordance with WANO Guidelines. The Krško NPP implementing procedures are in compliance with the intent of the new IAEA safety standards, such as GS-R-3, GS-G-3.1, etc.

In conclusion, the Slovenian regulations and practices are in compliance with the obligations of Article 13.

ARTICLE 14. ASSESSMENT AND VERIFICATION OF SAFETY

Each Contracting Party shall take the appropriate steps to ensure that:

(I) comprehensive and systematic safety assessments are carried out before the construction and commissioning of a nuclear installation and throughout its life. Such assessments shall be well documented, subsequently updated in the light of operating experience and significant new safety information, and reviewed under the authority of the regulatory body;

(II) verification by analysis, surveillance, testing and inspection is carried out to ensure that the physical state and the operation of a nuclear installation continue to be in accordance with its design, applicable national safety requirements, and operational limits and conditions.

14.1 Comprehensive and Systematic Safety Assessment

14.1.1 Regulatory requirements

Assessment of safety before the construction of a nuclear facility is assured through provisions of the 2002 Act. It is ensured through the provision that an application for license shall contain project documentation, Safety Analysis Report and opinion of an appointed expert for radiation and nuclear safety.

The safety analysis report must include as a minimum the following topics: safety basis and project concepts, an analysis of the location, object technical characteristics, programs for quality assurance, the evaluation of the protection of exposed workers against radiation, programs for pre-operating tests and programs for trial operation, training programs, the assessment of the exposure of the population and the environment, a safety analysis, the anticipated discharge of radioactive substances into the environment, and emergency planning.

The Safety Analysis Report must be amended when changes of the situation arise during the construction or decommissioning of the facility or during the period of trial operation.

Although the 2002 Act was adopted, the secondary legislation regulating the licensing has not changed yet therefore all provisions of secondary legislation in relation to licensing remained the same as was reported during the First, Second and Third Review Meeting.

In addition the 2002 Act requires the licensee of a nuclear facility must ensure regular, full and systematic assessment and examination of radiation or nuclear safety of a facility by the periodic safety review.

The operator must draw up a report on the periodic safety review and hand it over to the SNSA for approval. If the findings of a periodic safety review require changing of the conditions of operation or the limitations from the safety analysis report in order to improve radiation or nuclear safety, the licensee must draw up a proposal for the required changes. The report on the periodic safety review, approved by the SNSA, shall be a condition for the operating license renewal.

Regarding modifications, the 2002 Act requires that for each intended change relating to the facility or to the management method used or to the operation, including maintenance work, inspection, testing or the introduction of a technical, organizational or any other change which affects or could indirectly affect the content of the safety analysis report, the licensee must evaluate the change in relation to its significance for radiation or nuclear safety.

Changes are classified into three categories with regard to their importance to radiation or nuclear safety:

- 1st category modifications, for which it shall be necessary to notify only the SNSA,

- 2nd category modifications, for which the intention of their implementation must be reported to the SNSA; the licensee may commence the implementation of the proposed changes after the SNSA confirms in writing that it is not necessary to obtain approval for the changes,

- 3rd category modifications of significance for radiation or nuclear safety, for the implementation of which a license from the SNSA must be obtained; the licensee must attach a proposal for the amendments to the safety analysis report and an expert assessment from an authorized expert for radiation and nuclear safety,

14.1.2 Implementation

At the Krško NPP, a comprehensive program is established for design modification control, which defines roles and responsibilities of the site organizational units involved in the Plant Modification Process. Guidance is provided on the steps to be taken in performing plant modifications; this guidance is provided to the contractors as well. Screening criteria for determining the need for safety evaluations, guidance for performance of these safety evaluations and requirements for documentation review and approval are specified in accordance with United States 10 CFR 50.59.

A set of about 20 procedures cover all aspects of design modifications, from the request, prioritization, safety screening, preparation of the design package, review, preparation of installation package, to the evaluation of impact, testing/commissioning requirements, documentation revision and modification hand over.

Control of temporary modifications is done through a specific procedure which requires safety screening and evaluation similarly to the one for permanent modifications.

The adequacy of the Krško NPP design modification process has been proven in practice through several major modifications.

Following proper administrative procedures, since the Third Review Meeting the SNSA has approved 34 modifications on the facility (category 3), and agreed to 70 other modifications (category 2).

Some of the major licensing activities in the period since the Third Review Meeting were:

- In the frame of two licensing processes usage of “1.4X Integrated Fuel Burnable Absorber Standard” and “PAD 4.0 Code” were approved. In the year 2004 the Krško NPP extended the fuel cycle length to 18 months. This required a reactor core design with a large share of fresh fuel. For reactivity control a large number of IFBA (Integral Fuel Burnable Absorber, consisting of a boron layer on fuel pellets) fuel rods were employed. The new fuel rods with a thicker layer of IFBA were analyzed by the PAD 4.0 code (Performance analysis and design), which is used for the design of fuel rods. This new version of PAD 4.0 has been

introduced to replace PAD 3.4 which was not appropriate for fuel analysis at high burnup. Safety analyses for the design basis accidents in the USAR have been performed by PAD 3.4 and were not re-evaluated by PAD 4.0, since the PAD 3.4 results are more conservative. The fuel cycle length as defined in the Krško NPP Technical specifications was extended from 500 EFPD to 540 EFPD. Reload safety evaluation is performed for each fuel cycle core to confirm that the core parameters are not exceeding the limitations and to confirm the validity of the analyses performed at the Krško NPP in the year 2000.

- During the outage at the Krško NPP in 2006, due to their wear, rotors of both low-pressure turbines were replaced by new ones from more resistant material and with longer required maintenance intervals. As a consequence, the plant's electrical power was increased by 20 MWe without any change at primary side. On the basis of analysis and expert opinion, the SNSA approved the change before the outage in 2006.
- In 2006 the SNSA modified the discharge limits of liquid tritium effluents from the previous 20 TBq per year to 45 TBq per year. The main reasons for the increased tritium production at the Krško NPP were the power uprate for 6.3 % in 2000, the fuel cycle extension to 18 months, which requires higher boron concentration, and more IFBA fuel. The SNSA extensively studied all the aspects of this issue and summarized all the findings in the report "Liquid effluents of tritium from the Krško NPP". The main conclusions were that the radiological influence of liquid tritium discharges to the most exposed member of population downstream the Sava river is negligible (8.1 nSv per year). On the other hand, in the frame of the same licensing process, the SNSA compensated for this relaxation by reducing the limit for activation and fission products to one half, and therefore the overall effect to the public and environment is even more restrictive.
- SNSA approved the usage of the new Westinghouse program "BEACON-TSM", which will substitute most of the previous measurements with movable in-core detectors (MIDS), and usage of the new method of PDMS (Power Distribution Monitoring System) for online calculation of core power distribution, which can serve for the control of Technical Specification parameters as well as prediction of these parameters. PDMS uses as input the power distribution calculations core outlet temperature, data from off-core power-range nuclear instrumentation, control rods position and cold leg temperature. Calibration of the program is performed in 6-month intervals by MIDS.

14.2 Verification of Safety

The activities related to verification of safety, including the surveillance program stipulated by the Technical Specifications, were extensively described in the Second and Third Review Meeting Report.

The Krško NPP follows the United States regulations and other international practices. An overall "Program on inspection of performance and equipment ageing" has been developed with the purpose to determine activities for ensuring long-term reliable plant operation and supervision over ageing of structures, systems and components. The program connects different plant programs (In-Service Inspection (ISI) Program, Containment Inspection Program, MOV program, Snubber Program, Erosion Corrosion Monitoring Program, Steam Generators Program, AOV Program, Ageing Management Program, etc.) to determine qualitative guidelines for maintaining high availability and reliability of components and:

- to improve existing preventive maintenance programs,
- to improve existing inspection programs,
- for planning timely, appropriate and effective maintenance activities,
- for timely and effective equipment replacement on the basis of ageing evaluation,

- for long-term planning of major replacements and special replacements, maintenance and inspection activities.

To prepare a specific and effective action plan for the inspection or maintenance of a particular component good collaboration and information exchange between engineers from different inspection areas is needed. At the Krško NPP the following processes are designed for the connection of different inspection programs:
- Corrective Maintenance Program,
- Program on Reporting of Systems Condition and Control of Maintenance Effectiveness (Maintenance Rule Program),
- Preventive Maintenance Program,
- Predictive Maintenance Program,
- Work Order Process,
- Long-Term Planning Process.

Periodical verification of efficient connection of activities from different programs is required with regard to components failure, trends of components and systems performance, corrective actions prioritization and verifying of status of long-term investment plan and maintenance activities.

In-Service Inspection, Corrosion and Erosion Monitoring programs are created by plant specialists for the primary and secondary side and are performed by the plant's specialists and subcontractors. All programs are in compliance with the regulatory policy 10 CFR50.55 and ASME Code XI, Amendment 8. In Service Inspection results are reviewed and evaluated after each outage. The procedure for the correction of deviations has been established.

Monitoring the effectiveness of maintenance is implemented by the **Maintenance Rule** program. Performances or conditions of structures, systems and components are evaluated and reported quarterly by the Maintenance Rule Expert Panel since mid-2001. Maintenance rule scooping, performance criteria and implementation are performed according to updated procedures.

A common, integrated **"Ageing Management Program"** (AMP) has been developed in accordance with the NRC requirements from 10 CFR 50.54 (License Renewal Program). The objective of the AMP is to determine whether ageing processes are being effectively managed and required safety margins are maintained. The first phase of AMP (Screening and Scoping) has been already completed. 6385 mechanical components, 882 electrical components and 673 civil structures have been identified for evaluation in the Ageing Management Review (AMR). The AMR is planned to be completed by the end of 2008.

With the purpose to establish and to maintain evidence that structures, systems and components will perform their function under normal and accidental environment conditions, the **"Environmental Qualification Program"** (EQ) and appropriate procedures are being developed. In accordance with requirements from 10 CFR 50.49 and standard IEEE 323-1974 in the scope of the EQ program is safety related electrical equipment which is located in harsh environmental conditions.

The Krško NPP maintains a »living« Probabilistic Safety Assessment (PSA) model. The description of recent activities in the area of PSA is given in Chapter 6.

14.3 Regulatory Surveillance

The Slovenian Nuclear Safety Administration carries out its surveillance responsibilities with a combination of inspections, scrutiny of documents, approval of modifications to the license, approval of modifications to the plant, and regular monitoring and evaluation of the station's performance. During the refueling period, Technical Support Organisations are engaged to cover (inspect and evaluate) parts of plant maintenance and testing. The Slovenian Nuclear Safety Administration does not have resident inspectors on site. Inspectors, who are based at their headquarters in Ljubljana about 100 km from the plant, visit the facility about twice a week. Yearly there are about 100 inspections on site during non-outage years and there is an additional daily presence during outages.

During plant outages more strict inspections over the plant staff and subcontractors work are performed. Besides the regular supervision by the SNSA inspectors, additional inspections are performed by SNSA experts from the Nuclear Safety Department. As a result of supervision of the plant outage, the SNSA publishes a report "Analysis of outage at the Krško NPP", which includes a list of planned SNSA activities aimed to improve outage activities or to eliminate deficiencies found at the Krško NPP during the outage.

Independently from the Krško NPP, the SNSA analyses those operational events in the plant which could have safety significant root causes. The findings are extensively discussed with the plant personnel and the conclusions are presented to the Krško NPP staff.

In conclusion, the Slovenian regulations and practices are in compliance with the obligations of Article 14.

ARTICLE 15. RADIATION PROTECTION

Each Contracting Party shall take the appropriate steps to ensure that in all operational states the radiation exposure of the workers and the public caused by a nuclear installation shall be kept as low as reasonably achievable and that no individual shall be exposed to radiation doses which exceed prescribed national dose limits.

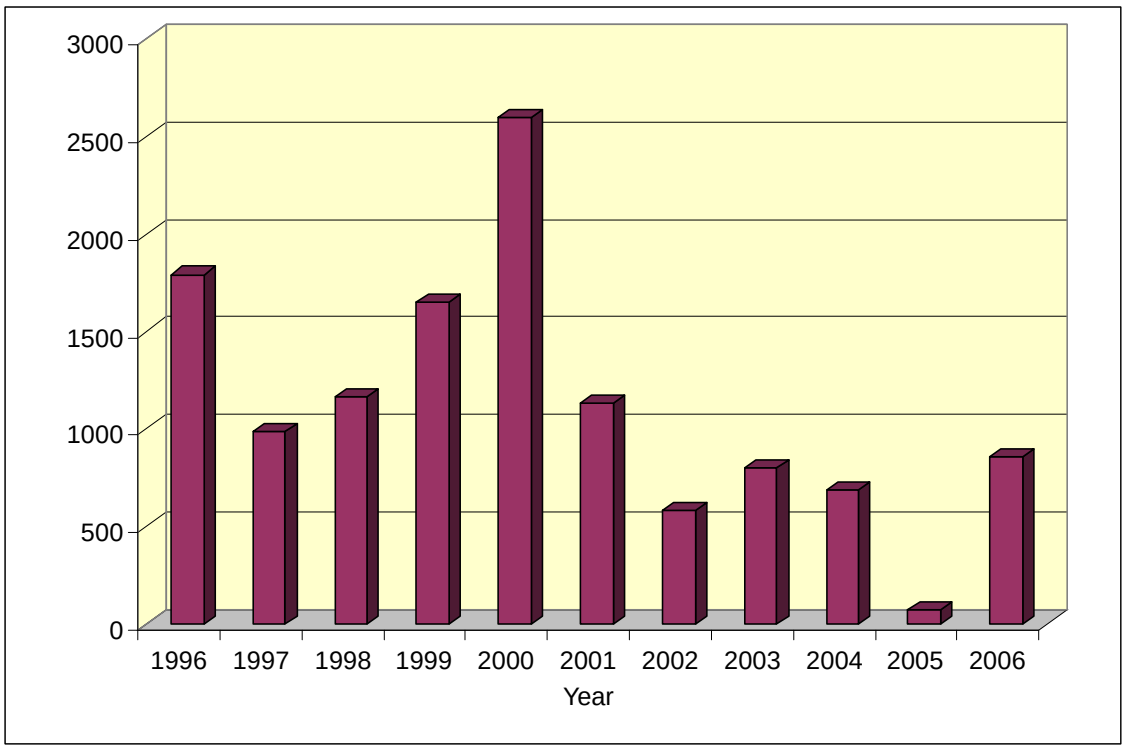
15.1 Dose Limits and Control of Occupational Exposure

Radiation exposure of workers and the public is limited according to the Decree on dose limits, radioactive contamination and intervention levels (Official Gazette No. 49/04) that follows the IAEA Standard Series No. 115. The occupational limit for effective dose is set to 20 mSv per year. For specially authorised exposures in exceptional circumstances, a higher limit can be allowed but not higher than 50 mSv per year and 100 mSv in five consecutive years. Special limits are set also for other groups such as apprentices and students, pregnant women (for an unborn child), and for intervention workers. Besides those, also an annual limit for equivalent dose for eye lenses is set to 150 mSv, and for both, skin and extremities, to 500 mSv.

Individual exposures are measured with thermoluminiscent dosimeters by approved service providers. The Krško Nuclear power plant has its own dosimetric service approved by the Slovenian Radiation Protection Administration (SRPA). The exposure data for plant workers include also neutron doses and internal exposures derived from the whole body counter measurements.

Figure shows the collective doses in the Krško NPP in the last decade (1996-2006). A substantial increase appeared during the period 1997-2000, when maintenance work and modernisation of the plant took place: the maximum value exceeded 2.5 man Sv in 2000, when both steam generators were replaced. In the recent years collective doses reached the values usually reported for pressurised water reactors. No cases with effective dose exceeding the limit of 20 mSv were detected.

Between 800 and 900 workers are under dosimetric control in the Krško NPP each year, including plant personnel and outside workers. About 70 % of the collective dose belongs to the outside workers (contractors).



Collective dose in the Krško NPP; the low value for 2005 is due the absence of refuelling outage

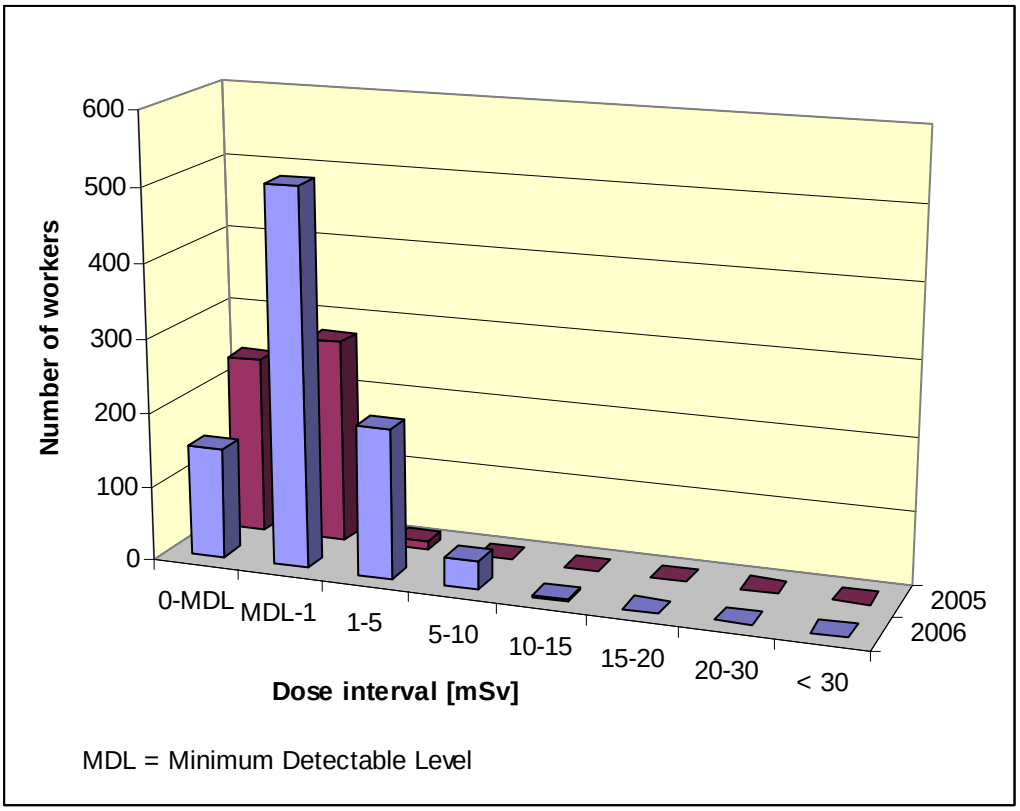
15.2 Radioactive Discharges and Environmental Monitoring

The authorised dose limit for the members of the reference group due to radioactive discharges from the Krško NPP during normal operation was set to 50 µSv per year. This figure shall be the sum of partial exposures, taking into account all pathways of radionuclide transfer. Additionally, the limit of 200 µSv/y was set for external radiation from the plant facilities at the fence.

The exposure of population is regulated also by the limitations of gaseous and liquid discharges. Environmental radioactivity monitoring of the nuclear installation was defined in the Regulations on Mode, Extent, and Frequencies of Monitoring of Radioactive Contamination in the Surroundings of Nuclear Facilities, OJ SFRY, 51/86, and was replaced recently by the Regulations on Radioactivity Monitoring (OJ RS, 20/07).

The annual limits of discharged activities into the environment are stipulated by the operation licence of the Krško NPP. The limits of annual liquid releases are given for the fission and activation products (without H-3) and for H-3 separately. Besides annual limits also the quarterly limits were set. The annual limits for gaseous releases are given for noble gases (in Xe-133 equivalent), radioiodine (in I-131 equivalent) and aerosols.

The SNSA annually reports to the European Commission on radioactive releases from nuclear installations according to the requirements of Art.37 of the Euratom Treaty.



Individual dose distributions in the Krško NPP in 2005 (no outage, average dose 0.14 mSv) and 2006 (outage, average dose 0.95 mSv)

The gaseous release activities for fission and activation products, iodine and aerosols in the period 2004-2006 were less than 2 % of the limiting values. A special problem was tritium production and its liquid releases in 2005 and 2006 when the NPP started to operate in a longer, 18-month fuel cycle. In the first quarter of 2006 the authorised release limit of 8 TBq was exceeded. The NPP applied for new limits: 45 TBq annually (the previous value was 20 TBq) with no quarterly limit. The SNSA approved the new values but at the same time decreased the limit for fission products in liquid discharges to a half of the previous value.

The monitoring programme includes measurements of radioactive discharges and radioactivity measurements in the environment. Measurements of radioactive discharges are performed by the nuclear power plant itself. These measurements are partly also a subject of regular intercomparison measurements, performed by technical support organisations. The monitoring programme of environmental radioactivity is preformed exclusively by the technical support organisations and comprises radioactivity measurements of surface and ground water, sediments and water biota, precipitation, air particulate and iodine, soil, crops and vegetation, and external radiation. Laboratories involved have to be accredited and approved for carrying out these measurements. Till now, the monitoring programme is directly contracted between the NPP and TSOs; according to the new regulations, issued in March 2007, also formally independent measurements are foreseen, financed by the SNSA.

The automatic radiation monitoring system was developed in Slovenia in the early nineties and firstly started with dose-rate measurements in the environment of the Krško NPP. Currently 13 stations are surrounding the plant; and besides those, two aerosol measuring stations were installed near the NPP. All incoming data, from the

NPP and from the national wide network are collected at the SNSA (altogether 75 stations for external radiation and 3 for airborne radioactivity).

The monitoring results and modelling of radioactive discharges of the Krško NPP showed that annual effective dose for a member of the reference group due to the plant operation was estimated to be less then 1 μSv. Most of this figure is due to the intake of the radionuclide ^{14}C discharged into the atmosphere and only a small part of annual public exposure belongs to the liquid discharges to the river Sava.

The Euratom Treaty requires from the Member States to establish a system for environmental monitoring of radioactivity on their territories and report on the monitoring results to the Commission. The Commission may verify if the system has been established and if it complies with the requirements. After the enlargement of the EU an intensive verification programme has focused primarily on the new member states.

The verification visit in Slovenia took place in the period of 12 -15 June 2006 and comprised a review of monitoring of radioactive discharges at the Krško NPP together with an operational monitoring of environmental radioactivity and a review of general environmental radioactivity monitoring on the territory of Slovenia. The final report of the mission was not ready by the time of preparation of this report; however, preliminarily the Commission found out that regular monitoring of discharges from nuclear installations has to be accompanied by an independent monitoring programme provided by the competent authority. The second important finding of the Commission was that all laboratories involved in analytical measurements should be accredited for the measuring methods they perform. Except for some lesser remarks the verification commission found that Slovenia fulfils the requirements from Art.35 of the EURATOM Treaty.

15.3 Implementation of the optimisation principle (ALARA)

Every radiation practice may cause exposure only up to the level which is as low as achievable with reasonable measures, taking into account economic and social factors (the principle of radiation protection optimisation). Radiation protection in the NNP is effectuated by the special radiation protection unit functioning separately from other organisational units. It has about twenty of well educated and trained technicians and engineers. The unit performs tasks based on the internal, written procedures.

According to the new Regulations on the use of radiation sources and radiation practices (OJ RS, 27/06) the role of an independent qualified expert in a nuclear power plant is strengthened. He prepares an overall assessment of radiation protection at the NPP site and gives twice annually the opinion regarding the activities of the radiation protection unit of the NPP. In those cases (e.g. during outages or some other works) when the planned collective dose is higher than 100 man mSv or when the planned individual dose is higher than 10 mSv, the qualified expert has to control such works.

Optimisation of radiation exposure covers aspects such as the nature of a job, configuration of the workplace, suitable tools, training, measures against radiation. In the Krško NPP the following ALARA measures were implemented for reducing the collective dose: careful ALARA planning, daily follow up doses/planning, dose-rate reduction, temporary use of shields, organisational changes: reduction of staying of the personnel in controlled areas, additional training of personnel to shorten the time for particular works, decontamination of equipment, use of electronic dosimeters with a preset alarm.

The internal procedures of the NPP related to the radiation protection programme were updated, including the procedures prescribing the work of the ALARA committee and ALARA plans. In addition, a new procedure was prepared, entitled “Radiation Protection Adviser”.

The Krško NPP officially participates in the ISOE programme of OECD/IAEA and follows operational experiences from other operators regarding source term reduction and managerial issues on radiation protection.

15.4 Regulatory Control Activities

According to the 2002 Act, the Krško NPP applied for additional licences, others than those covered by the operating licence; in 2004 the SNSA issued the licences for internal industrial radiography, for an X-ray device used in the internal control of received goods, and for radioactive sources for the calibration of radiation measurement equipment.

As regards the site inspections of the NPP concerning radiation protection, these were mostly oriented to the control of workers’ exposure. The inspections were effectuated by the Slovenian Radiation Protection Administration. They covered external and internal exposures, maximum individual exposures, overview of working procedures, classification of workers regarding categories A and B, medical surveillances of workers, organisational scheme during the outage, etc. In addition to exposure of internal and outside workers during the operation period and during outages, the inspections also included a review of the ALARA programme.

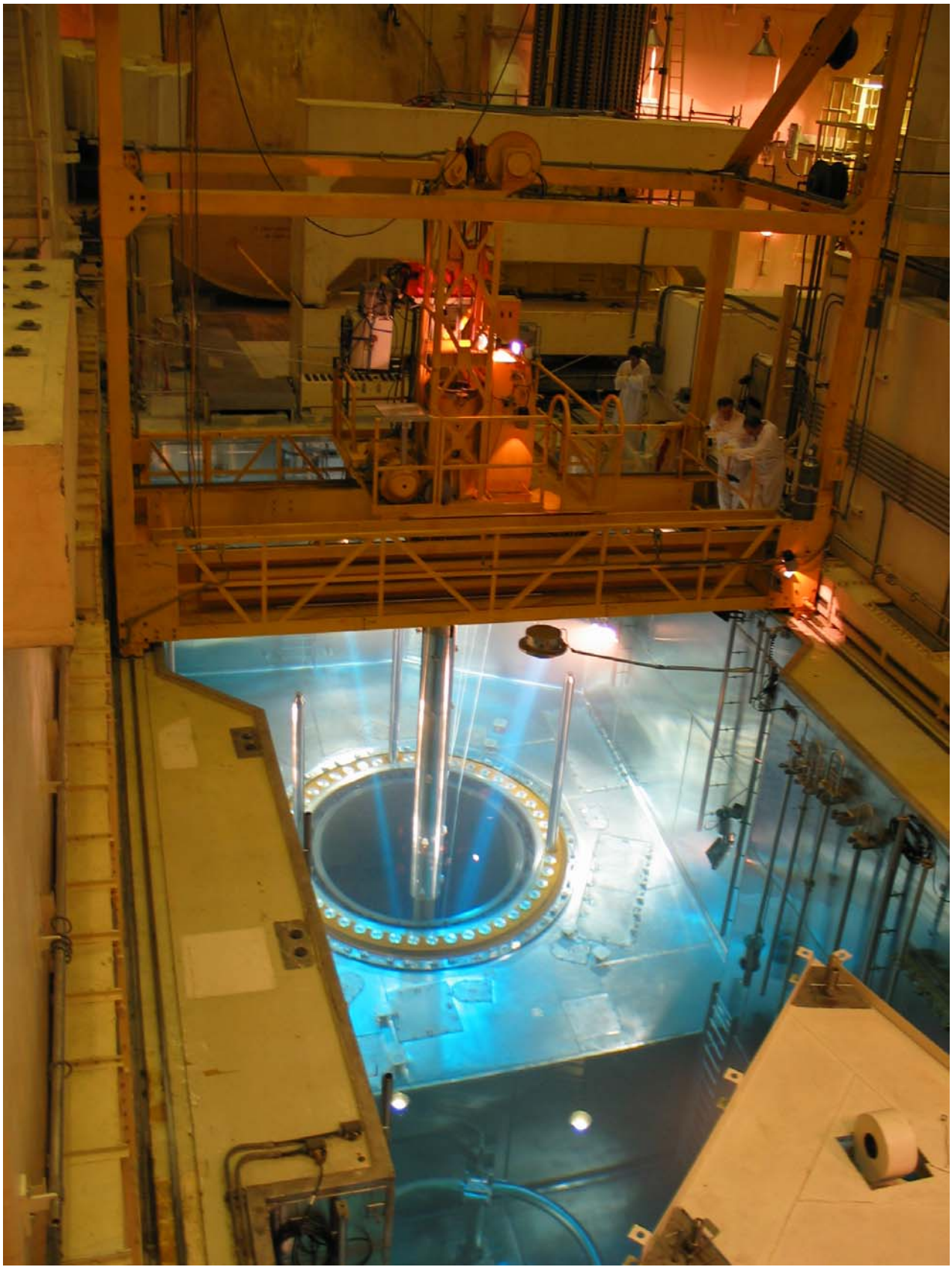
The inspections conducted by the SNSA inspectors were mainly focused on upgrading of the radiation protection measures at a site due to the fact that the legislation was in the process of very intensive changes in the last three years.

Extensive inspections were also related to the control of solid materials which were being released from the NPP site. Usage of clearance levels was inspected, as well as the process of decontamination at the site. The NPP updated clearance levels according to the legislation.

Inspections of radioactive effluents were carried out, focusing on the control of liquid and gaseous discharges and on their monitoring programmes. It was found that the limit of 8 TBq of H-3 in liquid discharges was exceeded in the first quarter of 2006 and a process related to this infringement started.

See also the Article 8. Regulatory Body, chapters 8.1 and 8.2.

In conclusion, the Slovenian regulations and practices are in compliance with the obligations of Article 15.



ARTICLE 16. EMERGENCY PREPAREDNESS

1. Each Contracting Party shall take the appropriate steps to ensure that there are on-site and off-site emergency plans that are routinely tested for nuclear installations and cover the activities to be carried out in the event of an emergency.
For any new nuclear installation, such plans shall be prepared and tested before it commences operation above a low power level agreed by the regulatory body.
2. Each Contracting Party shall take the appropriate steps to ensure that, insofar as they are likely to be affected by a radiological emergency, its own population and the competent authorities of the States in the vicinity of the nuclear installation are provided with appropriate information for emergency planning and response.
3. Contracting Parties which do not have a nuclear installation on their territory, insofar as they are likely to be affected in the event of a radiological emergency at a nuclear installation in the vicinity, shall take the appropriate steps for the preparation and testing of emergency plans for their territory that cover the activities to be carried out in the event of such an emergency.

16.1 Regulatory Requirements

The nuclear emergency preparedness and response in Slovenia is regulated with the 2002 Act and the latest consolidated version of the Protection against Natural and Other Disasters Act issued in 2006 (Official Gazette, 51/06). According to the Act on Organization and Field of Activities of the Ministries there are two authorities with responsibilities and competencies to regulate and supervise the Krško NPP emergency preparedness: the Administration for Civil Protection and Disaster Relief is responsible for population protection during a nuclear accident and for the organization of civil protection units in nuclear installations, and the SNSA is responsible for on-site procedures and measures related to the on-site emergency plan.

The 2002 Act requires from the operator to forward in the safety analysis report, which is the principal licensing document, a complete radiological emergency response plan, which is prepared in line with the civil protection regulations. The 2002 Act provisions mostly focus on the intervention measures in case of emergency. According to these provisions the operator needs to be capable to classify accidents, assess the consequences of the event and propose countermeasures. In the operator's emergency plan the intervention measures should be planned upon the emergency class declared. The operator must provide to emergency planners all the requested data which are available to the operator. The operator must maintain the emergency preparedness and provide response as stipulated by the on-site emergency plan. The prompt notification of the authorities, without an undue delay, of an event is stipulated and the public needs to be informed about important facts in the emergency plans. The ministry accountable for environment shall notify about the potential trans-national emergency in compliance with the international conventions.

The Decree on Preparation and Contents of the Emergency Plans (Official Gazette 3/2002 and 17/06) stipulates that the on-site nuclear emergency plan should be co-ordinated with the national and the municipality level, and the nuclear emergency plans should be revised at least every five years. Emergency plans are public documents and should be presented to the public within 90 days after their adoption. In 2006 the above mentioned Decree was supplemented with the requirement which specifies a set of data, relevant for the emergency, to be

supplied to the authorities by the companies which are obliged to have an on-site emergency plan.

16.2 Implementation of Emergency Preparedness Measures

The emergency planning zones, the classification of emergencies, the structure of emergency plans and the relations between them were described in the first and the second national report and have remained unchanged. The National Nuclear Emergency Response Plan was adopted by the Government in January 2004.

In 2005 the Administration for Civil Protection and Disaster Relief concentrated its activities mainly on the Annexes and Appendices of the National Nuclear Emergency Response Plan, with the intention of bringing them up to date. In 2006 the harmonisation of emergency plans with the local and the regional level took place. The regional emergency plans are mostly finished, therefore the focus has moved to the local (municipal) emergency plans. In the Training Centre for Civil Protection and Disaster Relief, every year between 250 and 300 emergency team members are trained, who can take part also in nuclear and/or radiological emergencies. The latest National Nuclear Emergency Response Plan was adopted by the Government in January 2004.

In December 2004 the Ministry of Health published the Regulation on the Use of Potassium Iodide Tablets. This regulation provides a regulatory framework for planning of the distribution of potassium iodide tablets in local communities.

Throughout the reporting period the Krško NPP maintained the operability of emergency centers and equipment, updated emergency documentation and performed systematic monthly communication testing and checking of emergency personnel response. Within the Krško NPP the alerting system was also updated. The modification of the Technical Support Centre (TSC) ventilation and reorganization of the Operation Support Centre (OSC) continued successfully in 2005. Reorganization of the on-site emergency response organisation was completed in 2006. In December 2006 the 24th revision of the Krško NPP Emergency Response Plan was issued, the previous one was dated back in September 2003. The latest revision reflects the changes made in the organisation, new equipment – including communications, changes in the plant procedures and other changes made.

In 2006 the SNSA put an effort into the revision of the procedure which defines the response of the Dose Calculation Group, which is responsible to assess the radiological situation in case of a nuclear emergency and to propose the countermeasures if necessary. In 2005 and 2004 two computer codes were successfully installed at the SNSA: (a) DOZE (meaning “doses”), a domestic code used to calculate doses on the basis of the Lagrangian particle plume model and (b) RODOS, a complex system used to assess the off-site consequences of the nuclear emergency under the auspices of Phare assistance.

In 2001 the Krško NPP upgraded and declared functional its Emergency Off-site Facility, which takes over the liaison with off-site authorities, public information and a part of engineering support from the Technical Support Centre during the Site and General Emergency. The Emergency Off-site Facility is located in Ljubljana.

16.3 Informing the Public

In line with the Council Directive 89/618 EURATOM on informing the general public about the health protection measures the Krško NPP prepared an information brochure entitled “How to React in a Nuclear Emergency” for the people living

within the area of planned urgent protective actions. The brochure was distributed to all households in the municipalities around the Krško NPPin 2002.

In 2004 the Krško NPP carried out a revision of information material about on-site protective measures in case of emergency.

16.4 Training and Exercises

The announced annual internal exercise to test the Krško NPP plan, called "NEK-2004", took place on 30 November 2004. The course of the accident was simulated on the Krško NPP simulator and besides the plant the SNSA, the National Notification Centre and the Regional Krško Notification Centre were also involved. The progressive accident scenario envisaged an increasing emergency classification from alert to general emergency and the corresponding Krško NPP emergency staff and centers activation. During the exercise the real meteorological data were considered. The anticipated radiological conditions required protective measures (evacuation inside the plant area) and usage of protective equipment. On the basis of potential radiological jeopardy the protective countermeasures for the endangered population were anticipated..

The announced annual internal exercise, called "NEK-2005", took place in December
2005. The SNSA also participated. The exercise had the following objectives:

- An integrity test of the plant's emergency preparedness by trying out specific elements of the whole system.
- A reconciliation test of the Krško NPP's emergency plan with procedures for physical protection and a fire-defence plan.

The exercise has shown that all participants are well prepared for this type of event. The Krško NPP procedures and emergency plan are reconciled with and follow international recommendations and practice. The need for some specific equipment, the revision of some procedures and for specifying some measures was established.

On May 11 and May 12 the IAEA (International Atomic Energy Agency) and the IACRNA (Inter-Agency Committee for Response to Nuclear Accidents) organised the international nuclear emergency response exercise "CONVEX –3". The main objective of the exercise was in particular to test the international exchange of experiences and the IAEA Emergency Response Centre. More than 50 countries and 8 international organisations participated in the exercise. The exercise was based on a fictitious accident in the Cernavoda NPP in the south-east of Romania. During the exercise the Dose Assessment group was activated as part of the SNSA emergency organisation. In the exercise real weather data were used, so that the fictitiously affected areas could not be predicted. The exercise started in the morning of May 11 and lasted without interruption until the evening of May 12. Information on the weather conditions including the wind trajectories was provided by the national weather service. Initially the wind direction was from Romania towards Moldova and the Ukraine, later the potentially affected states could be Bulgaria, Greece and Turkey. Since in Slovenia no contamination had to be expected due to weather conditions, the main activities of the Slovenian participants in the exercise were, besides periodic monitoring of the current radiological situation, recommendations for the people travelling to the potentially affected areas and to increase radiation control of the goods which might originate from these areas. Some information was foreseen for the Slovenian citizens who might already be in the affected areas. It was agreed by the participants that the flow of information between the IAEA, the EU, Romania and Slovenia was good.

In November 2006 the annual exercise »Nek-2006« took place. Besides the Krško NPP also the SNSA participated in the exercise. The scenario assumed a fictitious series of events requiring gradual activation of the Krško NPP emergency team. The recommendation for the protective action was to evacuate the urgent protective action zone (area within the radius of 10 km around the Krško NPP). In the exercise the evacuation of the Krško NPP, search for a lost person and rendering first aid were tested. The exercise was run smoothly and in accordance with the scenario, and the participants took the exercise seriously. Some deficiencies were observed in the area of communications and in co-ordination of some actions, in the use of new rescue equipment and in the use of the training version of the computer code for dose assessment.

The SNSA regularly trains its staff for the response in the case of nuclear and/or radiological emergency. The emergency personnel had general and more specific regular drills during the whole year. The SNSA also actively worked with other institutions (in particular with the Jožef Stefan Institute) in preparing drills and exercises for its staff.

The SNSA actively and periodically co-operates with domestic and international organisations and emergency agencies on maintaining and updating the national emergency plan. It was also actively involved in the Krško NPP emergency plan examination.

In the Krško NPP the computer code for off-site dose calculation was prepared and used for training and exercises. The code was successfully tested in October 2005.

16.5 International Agreements and International Projects

Slovenia is a party to the Convention on the Early Notification of a Nuclear Accident and to the Convention on the Assistance in the Case of a Nuclear Accident or Radiological Emergency. Slovenia has a bilateral agreement with Austria, Croatia and Hungary on the early exchange of information in the event of a radiological emergency. Emergency preparedness is a regular item on the agenda at bilateral meetings with Austria and at the quadrilateral meetings of the Czech Republic, Hungary, Slovakia and Slovenia, which are held every year.

A Slovenian delegate represented the East European Countries in the National Competent Authorities Co-ordinating Group during the 2004-2005 term of office. This group was established to maintain contacts among the National Competent Authorities in the period between the two biennial meetings of the National Competent Authorities representatives. The National Competent Authorities Co-ordinating Group mainly dealt with the implementation of the Action Plan for Strengthening the International Preparedness and the Response System for Nuclear and Radiological Emergencies, which was adopted by the IAEA Board of Governors in 2004.

Slovenia actively participated in the international exercise CONVEX-3 in May 2005 as a country which is in the relative vicinity of the affected country Romania – as it was the case in the exercise. Slovenia also took part in the preparatory meeting in Constanta (RO) in March 2005 and fully responded to the questionnaire which was later used by the IAEA for the exercise analysis.
In July 2005 Slovenia was present at the third Meeting of Representatives of Competent Authorities identified under the Early Notification and Assistance Conventions. During the meeting Slovenia was in favour of the proposal that the working groups on notification and assistance should deliver their products as soon as possible but not later than until the next meeting, which is due to take place in the summer of 2007.

Slovenia also sent a participant to the IAEA Technical Meeting on the Code of Conduct for the International Emergency Management System, which was organized in December 2006. During the meeting the document was drafted and it is important to be there from the very beginning to influence the creation of the document and to facilitate the implementation after the document has been adopted.

The SNSA regularly and actively participates obtained all the necessary computer and telecommunication equipment for the operation of the CoDecS system (the system for immediate exchange of coded messages concerning nuclear and radiological accidents in Europe), which represents technical realisation of the obligations from the European Union *acquis* concerning urgent mutual notification of the member states in case of emergency (the ECURIE system). Since 2005 Slovenia has a participant in the ECURIE-EURDEP Working Group, which discusses the issues of information exchange in case of a nuclear emergency, as well as the radiation monitoring data exchange.

The installation of RODOS (Real-time On-line DecisiOn Support System) in Slovenia was financed through a Phare programme. In October 2003 the contract for installation was signed and the project started. The RODOS was commissioned at the end of 2004 and it has been in trial use at the SNSA since then.

The relations between the Republic of Slovenia and the Republic of Croatia were enhanced through the establishment of a Sub-committee on Harmonisation of Emergency Plans, which works in the framework of the Permanent Bilateral Committee for Implementation of the Agreement on Co-operation in the Area of Natural and Other Disasters. The first task of this Sub-Committee was exchange of information and harmonisation of national nuclear emergency plans of both countries. In April 2007 the 6th meeting of the Sub-Committee was organized in Zagreb to discuss notification of Croatian authorities in case of a nuclear emergency in the Krško NPP. Slovenian side reported that the Slovenian Nuclear Emergency Response Plan contained the direct notification of the Croatian State Notification Centre by the Slovenian State Notification Centre. It was agreed that the proposal for direct notification from the Krško NPP to the Croatian State Notification Centre would be put on the agenda of the Permanent Bilateral Committee.

In conclusion, the Slovenian regulations and practices are in compliance with the obligations of Article 16.

ARTICLE 17. SITING

Each Contracting Party shall take the appropriate steps to ensure that appropriate procedures are established and implemented:

(I) for evaluating all relevant site-related factors likely to affect the safety of a nuclear installation for its projected lifetime;

(II) for evaluating the likely safety impact of a proposed nuclear installation on individuals, society and the environment;

(III) for re-evaluating as necessary all relevant factors referred to in sub-paragraphs (I) and (II) so as to ensure the continued safety acceptability of the nuclear installation;

(IV) for consulting Contracting Parties in the vicinity of a proposed nuclear installation, insofar as they are likely to be affected by that installation and, upon request providing the necessary information to such Contracting Parties, in order to enable them to evaluate and make their own assessment of the likely safety impact on their own territory of the nuclear installation.

17.1 Legislation Framework

The course of procedure in the licensing process of a nuclear facility is stipulated with the 2002 Act, Regulation E-1, the Environment Protection Act (consolidated text - Official Gazette RS, No. 39/06), the Decree on Categories of Projects for which an Environmental Impact Assessment is Mandatory (consolidated text - Official Gazette RS, No. 78/06), Instruction on the Methodology on Preparing Reports on Environmental Impact (Official Gazette RS, No. 70/96), the Spatial Planning Act (Official Gazette RS, No. 110/02, 5/03 and 58/2003), and the Construction Act (consolidated text - Official Gazette RS, No. 102/04).

The above mentioned legislation provides the framework to determine which nuclear and radiation safety documentation and documentation for environmental impact assessment is necessary, which consents and licenses are issued and what is the participation of the public and/or the neighbouring states.

17.2 Safety Documentation

The investor of a new nuclear facility shall prepare a preliminary Study on nuclear facility alternatives at potential sites (provisioned in Article 35 of the Construction Act), which is a screening document and provides feasibility information.

According to the 2002 Act the safety documentation to build a safety case to prove nuclear and radiation safety during the siting of a nuclear facility shall consist of three main documents: Special Safety Analysis, Environmental Impact Assessment and Safety Analysis Report. The content of all three documents is similar, since they are prepared for the same facility, but its extent and scope differ; the level of details presented increases from the SSA to the SAR and each stage is a re-evaluation of safety.

Special Safety Analysis is provisioned in Article 65 of the 2002 Act. It stipulates that selection of an area for the location of a nuclear facility shall be performed through the SSA, which will be used to assess all the factors in the area for the location of the nuclear facility which may affect the nuclear safety of the facility during its lifetime and the effects of the operation of the facility on the population and the environment. The contents and scope of the Special Safety Analysis are determined by the SNSA. Special Safety Analysis is a standalone document, focused on nuclear and radiation safety, but considered as part of the Environmental Report (provisioned in the Environment Protection Act), which covers various impacts of the facility on the environment and members of the public.

Environmental Impact Assessment is provisioned in Article 66 of the 2002 Act in the course of environmental protection approval for a nuclear facility. The SNSA shall propose the content of the Environmental Impact Assessment in the part related to radiation and nuclear safety.

The conditions, the scope and the content of the Environmental Impact Assessment shall be drawn up by the Environmental Agency of the Republic of Slovenia on the basis of the proposal by the SNSA.

The Safety Analysis Report is required for approval of the construction of a facility. An investor intending to construct the nuclear facility shall attach a Safety Analysis Report to an application for the approval and to the project documentation along with the opinion of an authorized expert for radiation and nuclear safety.

The contents of the Safety Analysis Report shall be determined by Regulation E-2.

17.3 Administrative Procedures and Licensing

According to the 2002 Act, siting of the nuclear facilities and the conditions for their location in a spatially and functionally contained area shall be carried out through the Detailed Plan of National Importance (henceforth referred to as DPNI), where the minister competent for the environment is responsible for its drawing up. The plan is based on the proposal of the long-term strategy for spatial development of the Republic of Slovenia given by the minister competent for the purpose of the nuclear facility.

The first stage of siting of the nuclear facility is to perform holistic estimation of environmental impacts, where according to Article 41 of the Environment Protection Act an Environmental Report is produced, which provides sufficient information on the acceptability of the facility's impacts to the environment and members of the public, while the accompanying Special Safety Analysis covers nuclear and radiation safety aspects.

The second stage of siting includes the process of obtaining environmental consent from the Environmental Agency of Republic of Slovenia (ARSO). For this the operator of the sited nuclear facility shall submit an Environmental impact assessment in accordance with Article 54 of the Environment Protection Act. ARSO shall obtain obligatory preliminary consents from various administrative bodies, whereas the SNSA shall issue the preliminary consent on nuclear and radiation safety.

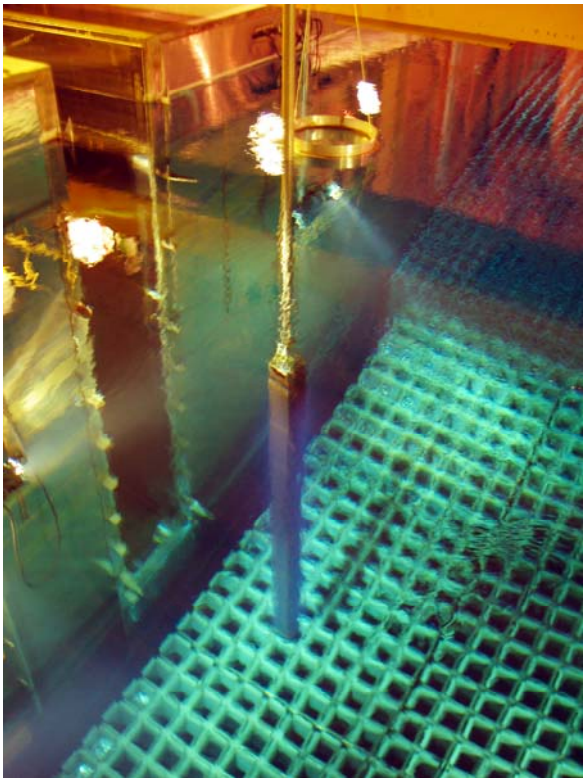
With the environmental consent issued the DPNI is proposed by the Ministry of the Environment and Spatial planning and shall be adopted by the local community. With this the final site for the nuclear facility is set.

The next step after the adoption of the DPNI is the application for the construction license, whereas according to the 2002 Act prior to the license the operator of the new nuclear facility shall obtain consent on nuclear and radiation safety from the SNSA. Chapter II of the Regulation E-1 "Conditions for the Siting of a Nuclear Facility" determines in more detail the investigations and analyses of the site and of the impact of the nuclear facility to the environment, required for the application for the construction license. As stipulated in Article 71 of the 2002 Act the operator, when applying for consent, shall attach the Safety Analysis Report.

17.4 Public Involvement and Contracting Parties Consultation

Public involvement in the siting process is assured through spatial conferences, public exhibitions, Member States consultation and public availability of the documentation. It starts with the presentation of the Program of Preparation of the DPNI to the general public through the 1st Spatial Conference (Article 28 of the Spatial Planning Act), the aim of which is to obtain and harmonize recommendations, guidelines and legitimate interests of various stakeholders.

After the preparation of the Environmental Report and the Special Safety Analysis these documents are subject to public presentation (Article 31 of the Spatial Planning Act) and consultation with neighbouring states (in the case of cross-boundary impacts as stipulated in Article 44 of the Environment Protection Act) and are both public documents. A similar procedure is in place for the Environmental Impact Assessment, which is required for obtaining the Environmental Consent. The public presentation must last at least 30 days (Article 58 of the Environment Protection Act). The Ministry of the Environment and Spatial Planning shall announce its decision in the public media within eight days. The decision must include a statement that opinions and comments made in the public presentation, discussion, and hearings have been considered.



After the consent the DPNI is issued and presented through the 2nd Spatial Conference (Article 28 of the Spatial Planning Act). Upon revisions and completion of the DPNI it is pending adoption by the local community.

In the last stage the investor shall obtain the construction license with the Safety Analysis Report attached, which is also a public document. No special provisions are in place for the public exhibition of the Safety Analysis Report, however in accordance with Article 43 of the General Administrative Procedure Act (consolidated text - Official Gazette RS, No. 24/06) any person that demonstrates their legal interest shall have the right to participate in the licensing procedure.

The SNSA also publishes intended decisions on environmental issues on its webpage 15 days prior to their issue in accordance with the Aarhus Convention.

In conclusion, the Slovenian regulations and practices are in compliance with the obligations of Article 17.

ARTICLE 18. DESIGN AND CONSTRUCTION

Each Contracting Party shall take the appropriate steps to ensure that:

(I) the design and construction of a nuclear installation provides for several reliable levels and methods of protection (defense in depth) against the release of radioactive materials, with a view to preventing the occurrence of accidents and to mitigating their radiological consequences should they occur;

(II) the technologies incorporated in the design and construction of a nuclear installation are proven by experience or qualified by testing or analysis;

(III) the design of a nuclear installation allows for a reliable, stable and easily manageable operation, with specific consideration of human factors and the man-machine interface.

18.1 Provision of Several Reliable Levels and Methods of Protection

The license for the construction of a nuclear facility is issued by the Ministry of the Environment, Spatial Planning and Energy on the basis of the Act on Construction (Official Gazette No. 110/92). According to the Act, the application for the construction license for a nuclear facility shall submit project documentation, a Safety Analysis Report including relevant evaluations, and the opinion of an appointed expert for radiation and nuclear safety. The contents of the project documentation and other conditions shall be prescribed by the Minister's Decree.

The Krško nuclear power plant was designed and constructed in compliance with the US NRC "General Design Criteria (GDC) for Nuclear Power Plants", App.A to 10 CFR 50.

The key document governing the technical and safety measures for the construction and operation of the nuclear facility is the Safety Analysis Report. The SAR shall be amended in accordance with the changes which arise in the design of the facility during the construction, commissioning, start of operation, operation and decommissioning of the nuclear facility.

Since 2003, with respect to preventing occurrence of accidents, the Krško NPP has implemented new programs for:

- erosion and corrosion surveillance, which deals with optimization of water chemistry within primary, secondary and auxiliary systems, monitoring and evaluating of erosion and corrosion processes, replacing and repairing worn out components and removing of erosion and corrosion products from primary and secondary systems,
- ageing equipment, which shall be used to assure long time reliable operation of facilities, including predictive, preventive and corrective maintenance,
- pressure equipment inspection, dealing with pressure vessels.

18.2 Proven Technology

The major modifications in the Nuclear Power Plant Krško in the year 2004 - 2006 (the first two are described in more detail in Chapter 14.1.2) were:

- licensing of the computer program PAD 4.0 for fuel elements design basis calculation and application of 1.4X IFBA standard for the fuel burnable absorber. The license decision was issued due to facility transition from the15 to the 18 month fuel cycle.
- licensing of a Beacon-TSM application as a Power Distribution Monitoring System (PDMS). This modification enables the Movable Incore Detection System (MIDS) to be replaced by PDMS. Furthermore, PDMS will be periodically

calibrated by MIDS. Beacon-TSM was licensed to improve the diagnosis and is not foreseen as a safety or control system.

- Replacement of a **traveling screen for the service water** pump suction intake structure #2. The old design of the traveling screen had direct intake while the new one has double-side intake.
- Replacement of **fire alarm annunciators, pipelines, isolation valves and the hydrant** on the fire protection system. The modification included new pipelines, made of polyethylene, that were buried on the south-eastern side of the facility. The new fire alarm annunciators enable better detection of fire locations.

- Replacement of the **central alarm system**. The new central double digital system offers the possibility of advanced grouping, filtering, retardation and prioritization of alarms as well as functional testing and advanced diagnostic. The alarm system is linked to the Process Information System.
- Replacement of the 10 kV distribution grid with a house grid. The old 10 kV distribution grid was replaced by a **6.3 kV house grid** due to obsoleteness, unreliability and because the facility had no control over the outside electric supply reliability.
- Replacement of the **water pre-treatment and the water treatment system**. The old regeneration station on the dematerialized water system was also removed due to generation of acid vapor which caused heavy corrosion on the nearby equipment. The new systems are directed through a central computer that enables five different regimes of operations.

Other important modifications since the Third Review Meeting were:

- Installation of a super compactor in the low and intermediate level waste storage,
- Installation of a preheating and pressure side venting of heater drain system,
- Replacement of two low pressure turbine rotors, stators and bearings with better thermo-hydraulic efficiency (about 3 %),
- Installation of seismic protection equipment on the polar crane in the reactor containment building.

In conclusion, the Slovenian regulations and practices are in compliance with the obligations of Article 18.

ARTICLE 19. OPERATION

Each Contracting Party shall take the appropriate steps to ensure that:
the initial authorisation to operate a nuclear installation is based upon an appropriate safety analysis and a commissioning program demonstrating that the installation, as constructed, is consistent with design and safety requirements;

(I) operational limits and conditions derived from the safety analysis, tests and operational experience are defined and revised as necessary for identifying safe boundaries for operation;

(II) operation, maintenance, inspection and testing of a nuclear installation are conducted in accordance with approved procedures;

(III) procedures are established for responding to anticipated operational occurrences and to accidents;

(IV) necessary engineering and technical support in all safety-related fields is available throughout the lifetime of a nuclear installation;

(V) incidents significant to safety are reported in a timely manner by the holder of the relevant license to the regulatory body;

(VI) programs to collect and analyse operating experience are established, the results obtained and the conclusions drawn are acted upon and that existing mechanisms are used to share important experience with international bodies and with other operating organisations and regulatory bodies;

(VII) the generation of radioactive waste resulting from the operation of a nuclear installation is kept to the minimum practicable for the process concerned, both in activity and in volume, and any necessary treatment and storage of spent fuel and waste directly related to the operation and on the same site as that of the nuclear installation take into consideration conditioning and disposal.

19.1 Initial Authorisation for Operation

The operating license is issued by the SNSA after the Ministry of the Environment and Spatial Planning issues, in accordance with the Act on the Construction of Facilities, a license for the use of a facility.

The application for the operating license shall contain an updated Safety Analysis Report, an opinion from an approved expert for radiation and nuclear safety and other prescribed documentation. The safety report must be updated with the changes that occur during trial operation.

19.2 Operational Limits and Conditions

In accordance with the 2002 Act, the proposed operational limits and conditions have to be submitted to the regulatory body as a part of the application for an operating license.

Regulation E-1 and Regulation E-2 define the contents of the operational limits and conditions, with respect to:
- safety limits,
- limiting settings for safety systems,
- limiting conditions for normal operations,
- surveillance requirements,
- requirements for the operator of a nuclear facility relating to reporting.

The 2002 Act outlines the procedure for approval of the changes to the Safety Analysis Report. The procedure defines three classes of modifications which are described in Section 14.1.

The Krško NPP Technical Specifications are based on NUREG-0452. The SNSA has licensed 11 changes of Technical Specifications during the last 3 years that were defined as 3rd category modifications and 3 changes, defined as 2nd category modifications. The causes for these modifications are as follows: 6 due to editorial and typing errors, 3 due to compliance with new standards and regulation requirements, 3 due to implementation of a new analysis approach and 2 due to equipment modifications.

19.3 Operation, Maintenance, Monitoring, Inspection and Testing

In accordance with Article 34 of Regulation E-1, the documentation submitted for application for an operating license shall also contain a list of prepared operating procedures and rules together with the plant start-up report, the QA program report, the technical specifications, the Safety Analysis Report, maintenance and testing instructions, etc.

The Updated Safety Analysis Report (USAR) comprises the Initial Test Program, which defines Preoperational Testing and Initial Startup Testing. General testing and inspection requirements for systems and components is described in the appropriate USAR sections including the Technical Specifications. The Krško NPP developed a set of programs, including administrative and implementing procedures for maintenance, testing and inspection, which are in compliance with the USAR, the Technical Specifications, other regulatory requirements and the in-house requirements.

There are the following programs and administrative procedures in the area of Operation: Conduct of Operation, Tagging, Shutdown Safety and Temporary Modification Control.

The Krško NPP has developed the following programs in the area of Maintenance:
Preventive Maintenance Program (separate programs for each specific set of equipment); Implementation, Monitoring and Evaluation of Preventive Maintenance Program; Corrective Action Program; Surface Protection Maintenance Program; and Technical Surveillance of Civil Structures and Other Structures Program.

There are the following programs and administrative procedures in the area of Monitoring, Inspection and Testing:
Plant Performance Monitoring Program; Reliability of Operation and Ageing of the Equipment Program; System Health and Maintenance Rule Program; Steam Generator Program; Emergency Diesel Generator Reliability Program; Corrosion-Erosion Program; Fuel Integrity Program; Control of Civil Structures and Other Constructions Program; In-service Inspection Program – the 3rd Inspection Interval; Containment Inspection Program; Snubber Program; Boric Acid Inspection Program; ASME Section XI Pump and Valve In-service Testing Documents; Containment Leakage Rate Testing Program; Motor Operated Valves (MOV) Program; Pressure Vessel Inspection Program; and Fuel Integrity Program.

19.4 Anticipated Operational Occurrences and Accidents

In accordance with Section 38 of the Regulation E-1, the organisation operating the nuclear facility has to prepare procedures for all operational modes and accident conditions.

The Krško NPP has developed and applied a full set of Abnormal Operating Procedures (AOP), Emergency Operating Procedures (EOP), Fire Response Procedures (FRP) and Severe Accident Management Guidelines (SAMG). The AOPs and EOPs have been reviewed by the SNSA and the Technical Support

Organisations. These sets of procedures have been verified during the operator's simulator training.

19.5 Engineering and Technical Support

In-house capabilities have been developed to perform engineering and technical support at the Krško NPP. It is capable of processing minor design changes in-house. The capability of preparing purchase specifications, reviewing bids and bidder selection, Quality Assurance, Quality Control and engineering follow-up of the projects and review and/or acceptance testing of the product are available to a certain extent at the plant.

Independent engineering and technical support, included in the assessment of nuclear safety, shall meet the requirements of the Regulation of Authorized Radiation and Nuclear Safety Experts that came into force in 2005.

Other engineering and technical support is assured through outsourcing at Slovenian research and engineering organisations or from abroad. However, major projects require an open bidding process. The Ministry of Education, Science and Sport financially support research and development projects in the field of nuclear safety in the Republic of Slovenia through a research fund, with the participation of the nuclear industry and the Slovenian Nuclear Safety Administration. In the 2004-2006 period, the SNSA also financially supported some projects in the area of application of radiation monitoring, seismic study, thermodynamic analysis, sensitivity of the core parameters, equipment ageing, safety culture and in the area of emergency planning.

19.6 Incidents, Significant to Safety

Article 87 (reporting on the operation of facility) of the 2002 Act stipulates that an operator must submit exceptional reports to the SNSA containing information on:

- equipment defects which could cause an emergency, emergencies and measures taken for the mitigation of the consequences of the defects or emergencies,
- errors made by workers while handling or operating a facility which could cause an emergency,
- deviations from operational limitations and conditions,
- all other events or operational circumstances which significantly affect the radiation or nuclear safety of the facility.

According to Article 108 of the 2002 Act, the license holder is required to report to the SNSA and to other competent agencies about the accidental condition in the shortest possible time.

The Regulation on the method and frequencies for keeping records, for reporting to the regulatory body by the appointed technical support organizations and by the organizations operating nuclear facilities (Official Gazette No.12/81) prescribes detailed requirements for reporting and for the notification of the regulatory body by the operator of a nuclear facility. The regulation distinguishes between routine reporting and notification, and reporting in the case of an abnormal event. It specifies the time period for each report. Reporting criteria are also given and abnormal events are specified.

The regulation for event reporting is to be replaced by a new regulation which is under preparation.

Slovenia is a member of the IAEA INES reporting system. Events from the Krško NPP are rated in accordance with the INES scale and reported to the IAEA. There is no formal committee established to evaluate the event rating. The rating is done by the INES national officer and discussed with the licensee and internally in the SNSA.

19.7 Programs to Collect and Analyse Relevant Operating Experience

In accordance with Article 60 of the 2002 Act (the use of experiences gained during operational events) the operator of a nuclear facility must ensure that programs of recording and analysing operational experience at the nuclear facility are implemented.

In the assessment, examination and improvement of radiation and nuclear safety the operator of the nuclear facility must take into account the conclusions of the programs referred to in the previous paragraph.

At the Krško NPP, Root Cause Analysis of significant events is performed, the lessons learned are followed up and training is given where appropriate. The plant may consider aggregating the large number of cause categories into smaller categories to obtain a more meaningful trending analysis, to facilitate the preparation of management reports, and to make a selection of appropriate action plans covering an adequate scope. Human performance is included in the root cause analysis through the Event and Causal Factor Charting, Barrier Analysis and Change Analysis. The plant policy for restart following a reactor trip requires the cause of the trip to be known, understood and corrected before the restart. The SNSA supervises corrective actions, defined by facility. More complex events are also analyzed through internal SNSA investigation and the results are compared to the facility's corrective actions. If necessary, additional actions are required.

An Operating Experience Feedback Program is in place, which includes the consideration of in-house as well as external operating events. This activity is handled within the Independent Safety Engineering Group (ISEG). The program has been expanded by developing a corrective actions program including low level events and near misses, all types of deviations, failures, malfunctions, and deficiencies.

Off-site event reports safety screening is part of the Krško NPP Operating Experience Assessment Program. Off-site event reports are provided by the SNSA, IAEA, INPO, NRC, WANO, NUMEX, Westinghouse and PWROG. In 2004 the SNSA introduced into its work systematic follow-up of foreign event reports. Since then 33 potentially interesting events were evaluated in detail for applicability in the Krško NPP.

In the area of assessment of operating experience the Plant Performance Monitoring Program covers about 90 indicators. The Krško NPP has been collecting performance indicators for many years, preparing annual reports that provide results for the international performance indicators defined by the World Association of Nuclear Operators (WANO).

Next to the Krško NPP set of indicators, the SNSA developed an internal set of indicators. With respect to Krško NPP indicators and yearly reporting, some SNSA indicators are evaluated through monthly or quarterly periods. In 2005 the SNSA started to collect and assort work orders, issued by the plant. Detailed tracking of work orders enables early warning of systems or equipment degradation as well as efficiency of maintenance and corrective programs.

19.8 Radioactive Waste Resulting from Operation

All operational radioactive waste from Krško NPP is stored within the plant area. The plant is responsible for radioactive waste management at the location. According to the 2002 Act, the dates for siting and final disposal of Low and Intermediate Level Waste are 2008 and 2013 respectively.

During the operation of the Krško NPP, various radioactive substances in liquid, gaseous and solid form are generated. The system is constructed for collecting, processing, storing and packaging of waste in a suitable form and to minimise releases into the environment. Three fundamental systems are used for radioactive waste management, namely for liquid, solid and gaseous radioactive waste.

Numerous program improvements, design changes and work practice improvements have been pursued at the plant to decrease the generation rate of radioactive wastes of different types (two super compaction campaigns, In-drum Drying System, purchase of the super compactor). With the 18-month fuel cycle, the generation of radioactive wastes is additionally reduced.

To reduce the volume of solid radioactive waste to be stored, two super compaction campaigns have been carried out. The original Westinghouse procedure for evaporator bottoms and spent resins treatment was replaced with a treatment of these types of wastes called the In-Drum Drying System. The Krško NPP has started with the incineration of combustible wastes. In the year 2005 the Krško NPP sent 283 drums with total activity of about 1.9 GBq to Sweden for incineration.

The Agreement between the Governments of Slovenia and Croatia on the statutory and legal questions related to Krško NPP investment, exploitation and decommission entered into force in April 2003. Among other it was agreed that the decommissioning of the Krško NPP, and the disposal of radioactive waste and spent nuclear fuel are a joint responsibility of the contracting parties. Based on provisions of the agreement, a joint commission for the preparation of plans for post-operational radioactive waste and spent nuclear fuel management and for the disposal and preparation of the decommissioning plan was formed and started the work. It was also agreed that the contracting parties shall in equal shares assure funds for preparation of the decommissioning plan and its execution, as well as the funds for preparation of the radioactive waste and spent fuel management plan and for their disposal. If the contracting parties agree on joint solution they shall finance it in equal shares, otherwise each country shall finance its share of activities.

In conclusion, the Slovenian regulations and practices are in compliance with the obligations of Article 19.

APPENDICES

APPENDIX I: COMPREHENSIVE LIST OF LEGAL DOCUMENTS IN FORCE IN SLOVENIA (AS OF 30 APRIL 2007)

A. National legal frame

A.1 Governmental decrees and ministerial regulations issued on the basis of 2002 Act

- Regulation on Expert Council on Issues Relating to Radiation and Nuclear Safety - JV1 (Off. Gaz. RS, 35/2003),
- Regulation on Expert Council on Protection of People Against Ionising Radiation, Radiological Procedures and Use of Radiation Sources in Health and Veterinary Care - SV1 (Off. Gaz. RS, 62/2003),
- Regulation on Conditions for Use of Radiation Sources in Health Care - SV3 (Off. Gaz. RS, 111/2003),
- Regulation on Conditions and Methodology of Assessment of Doses for Protection of Workers and Population Against Ionising Radiation - SV5 (Off. Gaz. RS, 115/2003),
- Decree on the Criteria for Determining the Amount of Compensation Due to the Limited Use of Land in the Area of Nuclear Facility - UV8 (Off. Gaz. RS, 134/2003),
- Regulation on Medical Surveillance of Exposed Workers - SV6 (Off. Gaz. RS, 2/2004),
- Regulation on Obligations of the Person Carrying Out a Radiation Practice and of the User of a Radiation Source - SV8 (Off. Gaz. RS, 13/2004),
- Regulation on Approving Experts in the Area of Ionising Radiation - SV7 (Off. Gaz. RS,18/2004),
- Regulation on the Methods of Keeping Records on Personal Doses Due to Exposure to Ionising Radiation - SV4 (Off. Gaz. RS,33/2004),
- Decree on the Areas of Limited Use of Land Due to Nuclear Facility and on Conditions for Construction in such Areas - UV3 (Off. Gaz: RS, 36/2004),
- Decree on Radiation Practices - UV1 (Off. Gaz. RS,48/2004, supplemented 9/2006) ,
- Decree on Dose Limits, Radioactive Contamination and Intervention Levels UV2 (Off.Gaz.RS,49/2004),
- Regulation on Shipment of Radioactive Waste In and Out of EU and on Import and Export – JV11 (Off. Gaz. RS, 60/04 and 80/05),
- Regulation on Physical Protection of Nuclear Materials, Nuclear Installations and Radiation Facilities – FV1 (Off. Gaz. RS, 31/05),
- Regulation on Working Conditions for Workers Carrying Out Physical Protection of Nuclear Materials, Nuclear Installations or Radiation Facilities and on Requirements for Workers Having Access to Nuclear Materials and Other Conditions Relating to Physical Protection – FV2 (Off. Gaz. RS, 36/05 and 64/05),
- Regulation on Conditions Which Must Be Fulfilled by Workers Carrying Out Safety Significant Works in the Nuclear Installations or Radiation Facilities – JV4 (Off. Gaz. RS, 74/05),
- Regulation on the Use of Radiation Sources and on Radiation Practice – JV/SV2 (Off. Gaz. RS, 27/06),
- Regulation on Radioactive Waste and Spent Fuel Management – JV7 (Off. Gaz. RS, 49/06),
- Regulation on Approved Experts for Radiation and Nuclear Safety – JV3 (Off. Gaz. RS, 51/06).

- Regulation on Monitoring of Radioactivity – JV10 (Off. Gaz. RS, 20/07)

In addition to the above mentioned decrees/regulations the 2002 Act has been used as a basis for the adoption of the following two legal documents:

- Regulation on the Conditions to be met by Primary Health Care Centres for Breast (Off. Gaz. RS, 110/04),
- Programme on Systematic Monitoring of Working and Residential Environment and Raising Awareness about Measures to Reduce Public Exposure Due to the Presence of Natural Radiation Sources (Off. Gaz. RS, 17/06).

A.2 Other legislation

Third Party Nuclear Liability

- Act on Third Party Liability for Nuclear Damage (Off. Gaz. SFRY, 22/78 and 34/79);
- Act on Insurance of Liability for Nuclear Damage (Off. Gaz. SRS, 12/80),
- Decree on Establishment of the Amount of Limited Operator's Liability for Nuclear Damage and on Establishment of the Amount of Insurance for Liability for Nuclear Damage (Off. Gaz. RS, 110/2001).

Decommissioning of the Nuclear Power Plant Krško

- Act on the Fund for Financing Decommissioning of the Krško NPP and Disposal of Radioactive Waste from the Krško NPP (Off. Gaz. RS, 75/94, 35/96, 24/2003 and 47/03).

Radioactive Waste

- Act on Cessation of Exploration of the Uranium Mine (Off. Gaz. RS, 36/92, 28/00 and 121/05),
- Act on Mining (Off. Gaz. RS, 56/99 and subsequent modifications),
- Decree on Establishment of a Public Agency for Radwaste Management (Off. Gaz. RS, 45/96, 32/99, 38/2001),
- Decree on Mode and Conditions of Discharging the Public Service on Radioactive Waste Management (Off. Gaz. RS, 32/99).

Civil Protection and Disaster Relief

- Act on Protection against Natural and Other Disasters (Off. Gaz. RS, 64/94 and 41/04),
- Decree on Contents and Writing of the Civil Protection and Disaster Relief Plans (Off. Gaz. RS, 3/2002 and 17/2002).

Administrative

- Act on Public Administration (Off. Gaz. RS, 52/2002 and subsequent modifications),
- Act on Inspection (Off. Gaz. RS, 56/2002),
- Act on General Administrative Procedure (Off. Gaz. RS, 80/99 and subsequent modifications),
- Act on Administrative Fees (Off.Gaz. RS, 80/00 and subsequent modifications),
- Decree on Administrative Authorities within Ministries (Off.Gaz. RS, 58/03 and subsequent modifications)

Energy

- Energy Act (Off. Gaz. RS,79/99 and subsequent modifications);
- Decree on the Transformation of the NEK p.o. into the Public Company Krško NPP, d.o.o. (Off. Gaz. RS, 54/98, 57/98, 59/2002 and 10/2003).

Environment

- Act on Environmental Protection (Off. Gaz. RS, 41/04);
- Act on Spatial Planning (Off. Gaz. RS, 110/2002, 8/2003 and 58/2003);
- Construction Act (Off. Gaz. RS, 110/2002 and subsequent modifications);
- Decree on Categories of Projects for Which the Environmental Impact Assessment is mandatory (Off. Gaz. RS, 66/96, 12/2000 and 83/2002);
- Instruction on the Methodology of Preparing Reports on e Environmental Impact (Off. Gaz. RS, 70/96);

General

- Penal Code (Off. Gaz. RS, 63/94 and subsequent modifications);
- Criminal Procedure Act (Off. Gaz. RS, 63/94 and subsequent modifications),
- Act on Minor Offences (Off. Gaz. RS, 7/2003 and subsequent modifications);
- Maritime Code (Off. Gaz. RS, 26/2001 and subsequent modifications);
- Act on Transport of Dangerous Goods (Off. Gaz. RS,79/99 and subsequent modifications);
- Act on Export of Dual Use Goods (Off. Gaz. RS, 37/04);
- Decree on the Control of Export of Dual Use Goods (Off. Gaz. RS, 53/05 and 4/06);

B. International instruments to which Slovenia is a party

Based on the Slovenian Constitution all announced and ratified international treaties also constitute an integral part of the Slovenian legislation and can be applied directly. The following international instruments, to which Slovenia is a party, should be mentioned:

B.1 Multilateral agreements

- Statute of the International Atomic Energy Agency (including its Amendment of Articles VI and XIV),
- Agreement on the Privileges and Immunities of the International Atomic Energy Agency,
- Convention on the Physical Protection of Nuclear Material,
- Convention on Early Notification of a Nuclear Accident,
- Convention on Assistance in the Case of a Nuclear Accident of Radiological Emergency,
- Convention on Nuclear Safety,
- Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water,
- Treaty on the Non-Proliferation of Nuclear Weapons,
- Treaty on the Prohibition of the Emplacement of Nuclear Weapons and other Weapons of Mass Destruction in the Sea-Bed and the Ocean Floor,
- European Agreement Concerning the International Carriage of Dangerous goods by Road (ADR),
- Convention on International Railway Carriage (COTIF) including Appendix B (RID),

- Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management,
- Comprehensive Nuclear-Test-Ban Treaty,
- Convention on Third Party Liability in the Field of Nuclear Energy of 29 July 1960, as Amended by the Additional Protocol of 28 January 1964 and by the Protocol of 16 November 1982,
- Convention of the 31 January 1963 Supplementary to the Paris Convention of 29 July 1960, as Amended by the Additional Protocol of 28 January 1964 and by the Protocol of 16 November 1982,
- Joint Protocol Relating to the Application of the Vienna Convention and the Paris Convention.

B.2 Bilateral agreements

- Act ratifying the Agreement between the Kingdom of Belgium, the Kingdom of Denmark, the Federal Republic of Germany, Ireland, the Italian Republic, the Grand Duchy of Luxembourg, the Kingdom of the Netherlands, the European Atomic Energy Community and the International Atomic Energy Agency in implementation of Article III (1) and (4) of the Treaty on the non-proliferation of nuclear weapons,
- Act ratifying the Additional Protocol to the Agreement between the Kingdom of Belgium, the Kingdom of Denmark, the Federal Republic of Germany, the Italian Republic, the Grand Duchy of Luxembourg, the Kingdom of the Netherlands, the European Atomic Energy Community and the International Atomic Energy Agency in implementation of Article III (1) and (4) of the Treaty on the non-proliferation of nuclear weapons
- Agreement between the US NRC and the SNSA on Exchange of Technical Information and Co-operation in the Nuclear Safety Matters,
- Agreement between the Government of the Republic of Slovenia and the Government of Canada on Co-operation in the Peaceful Uses of Nuclear Energy with an Arrangement between the SNSA and AECB,
- Agreement between the Governments of the Republic of Slovenia and the Republic of Hungary on Early Exchange of Information in the Event of a Radiological Emergency,
- Agreement between the Governments of the Republic of Slovenia and the Republic of Austria on Early Exchange of Information in the Event of a Radiological Emergency and on Questions of Mutual Interest in the Field of Nuclear Safety and Radiation Protection,
- Agreement between the Governments of the Republic of Slovenia and the Republic of Croatia on Early Exchange of Information in the Event of a Radiological Emergency,
- Agreement between the Government of the Republic of Slovenia and the Government of the Slovak Republic for the Exchange of Information in the Field of Nuclear Safety,
- Arrangement between the Nuclear Safety Administration of the Republic of Slovenia and the Council for Nuclear Safety of South Africa for the Exchange of Technical Information and Co-operation in the Regulation of Nuclear Safety,
- Arrangement between the Nuclear Safety Administration of the Republic of Slovenia and the Ministry of Science and Technology of the Republic of Korea for the Exchange of Information and Co-operation in the Field of Nuclear Safety,
- Arrangement between the Nuclear Safety Administration of the Republic of Slovenia and the Nuclear Installations Safety Directorate of the Republic of France for the Exchange of Technical Information and Co-operation in the Regulation of Nuclear Safety,
- Arrangement between the State Office for Nuclear Safety in the Czech Republic and the Slovenian Nuclear Safety Administration for the Exchange of Information,

- Agreement between the Governments of the Republic of Slovenia and the Republic of Croatia on Settlement of Status and Other Legal Relations Regarding Investments

APPENDIX II: CHALLENGES AND PLANNED MEASURES TO IMPROVE SAFETY

Under this chapter we tried to address the challenges and planned actions to improve safety which were listed in the rapporteur's report for Slovenia in the end of the last (3rd) CNS review meeting.

A. Challenges

i. Pressure of the owners to reduce operating costs

Under the Contract between the Government of the Republic of Slovenia and the Government of the Republic of Croatia on the regulation of status and other legal relations connected to investment in the Krško NPP (NEK), its exploitation and decommissioning, and the Memorandum of Association, both of which entered into force on 11 March 2003, NEK is organised as a limited liability company.

The basic capital of NEK is divided into two equal shares owned by the partners Gen-energija Ltd, Ljubljana, and Hrvatska Elektropriveda p.l.c., Zagreb. NEK produces and supplies electricity exclusively in favour of the two partners, who each have the right and obligation to use 50% of its total output. NEK operates on a non-profit basis. Electricity production costs are covered by the two partners.

The owners carry out their plans through the Supervisory Board, which approves the annual plan. Naturally, there is a pressure to reduce the operating and other costs, but this has been done in a reasonable manner. So far, the Supervisory Board has approved the electrical power price, which covers electrical power production costs, as well as the necessary investments. The amount for investments and improvements is stable and gives management enough flexibility for long term maintenance of nuclear safety.

The opening of the electrical power market can not be directly associated with the pressure to reduce the operating costs. The nuclear power plant produces power as a base load power plant and within this operating regime its power price is competitive compared to hydro and especially to fossil powered plants. There is still a need for base load power, therefore there has been no pressure to the nuclear power plant to change the operating regime, neither to substantially lower the production costs to become competitive.

ii. SNSA Projects

Short description of SNSA past and ongoing projects is given in this section.

Managing of ageing processes in the Krško NPP

The Krško NPP is developing an Ageing Management Programme (AMP) with the objective to determine whether ageing processes are being effectively managed and whether the required safety margins are maintained. The AMP is intended to be finished by the end of 2008. To improve knowledge on ageing and to set up a list of potential SNSA activities in this area, the SNSA started the project "Managing of ageing processes in the Krško NPP", with the following topics:

1. Overview of regulatory requirements and practices from other Europe countries and the USA,
2. Theoretical basis of different ageing processes,
3. Review of already completed phases of AMP at the Krško NPP,

4. Development of a SNSA procedure for supervision of ageing processes at the Krško NPP,
5. Development of software for monitoring the condition of important SSCs (?) at the Krško NPP.

The first three phases were finished in 2006. It was found out that the methodology from already finished phases of the Krško AMP in general suits the NRC requirements described in the License Renewal Program from 10 CFR 50.54 and together with implementation of the Maintenance Rule Program it suits the IAEA requirements as well. Presently the software for monitoring the condition of important systems, structures and components (SSC), and the SNSA procedure governing its use is being developed (items 4 and 5). The provider of the software will include only 20 representative SSCs in the database that will be gradually extended by the SNSA. On the basis of data from surveillance testing, in-service inspection and maintenance activities the database will provide trending, comparison with allowable values and alerts, and a review of corrective and preventive actions. Transients important for fatigue evaluation will be included into the database as well. The SNSA procedure will include safety criteria in order to include new components into the SNSA ageing list, criteria to rank components by their importance to safety, inspection parameters to monitor the level of degradation, acceptance criteria and guidelines for obtaining data from the NPP.

Plant event analysis by the regulatory body

In December 2002 the SNSA hosted IAEA staff preparing TecDoc dealing with event investigation (ref.: IAEA-TECDOC-1417 "Precursor analyses — The use of deterministic and PSA based methods in the event investigation process at nuclear power plants") using this as an opportunity to increase SNSA's technical knowledge in this area. The root cause analysis of the forced plant shutdown was performed as a showcase during the consultants' meeting. Since then the SNSA has been analyzing more events through internal investigations independently of the facility's investigations. From 2003 to 2006 SNSA analyzed eleven events, seven of them in detail. The results were compared to the facility's results and used to determine the necessary steps to prevent such events from recurring.

Since 2004 the SNSA has a new system for following foreign operational experiences and other relevant findings. Out of 33 applicable events with regard to the Krško NPP, SNSA's attention was focused on 16 events, and actions stemming from the analyses of most of them are still ongoing.

Review of NPP Krško Safety Culture and guidelines for regulatory evaluation of Safety Culture

At the request of the SNSA a review of NPP Krško safety culture was performed in 2006 and guidelines for regulatory evaluation of Safety Culture at the plant have been prepared (by (the University Medical Center Ljubljana and the Institute for Occupational Health, Transport and Sport, Ljubljana). The scope of the NPP Krško safety culture review was limited to the PSR reports, the OSART mission report, the Safety Analysis Report (USAR) and NPP procedures. The review concluded that the nature and extent of programmes and organisational/management arrangements that contribute to safety culture at NEK are satisfactory and reflect the international good practice. On the basis of the review and IAEA documents such as TECDOC-1321, the guidelines for safety culture regulatory evaluation were prepared for the SNSA. Further development of the regulatory body procedures was proposed and will be completed in 2007.

Development of PSA

The objective of the project Development of Framework for Use of PSA at the SNSA was for SNSA to reach the level of PSA expertise necessary for independent use and development of PSA tools. The project included training of the key SNSA personnel, that is management, inspectors and PSA specialists. Demonstration of PSA applications was part of the project, including a case of risk informed inspection and of risk informed TS change.

The Development of Qualitative and Quantitative Criteria for Application of Probabilistic Safety Assessment for Decision Making project stemmed from the need to develop risk criteria, which would support risk informed decision-making. It included a review of quantitative risk criteria in selected countries, including summarization of the current state in Slovenia. Activities connected with probabilistic safety assessment in the nuclear power plant Krško mainly follow the guidelines developed in the United States of America. A method of determining quantitative risk criteria by the SNSA considering probabilistic safety assessment has been proposed, based on world review and consideration of the situation in Slovenia. Development of risk criteria is considered separately for permanent and temporary changes in the plant. Quantitative criteria present only one of the inputs for decision-making about the changes in the plant in addition to a qualitative risk analysis and in addition to meeting the regulatory requirements, being in consistence with defence in depth, maintaining sufficient safety margins and using performance measurement strategies to monitor the changes.

The SNSA PSA Info system project began in 2005 and is now nearing its trial stage. The purpose of the PSA Info system is to give support to the SNSA in the form of an intranet- based set of tools and databases enabling easy and understandable access to PSA data and analysis for all the regulatory body staff.

The SNSA project on the use of PSA for ageing management has just started. Its goals are development of PSA criteria to select equipment which requires a detailed analysis under the ageing management program and identification of this equipment and determination of the NPP PSA model changes for its better use in support of ageing management.

The goals of the ongoing project "The Use of the NEK PSA Model" are:
- to review and assess the adequacy of the NEK PSA model for the implementation of Risk Monitor,
- to make the NEK PSA model adequate for the implementation of Risk Monitor (corrections of asymmetries etc.),
- to assess the quality of the model and to determine the degree of confidence in the PSA results, especially in the view of new PSA based applications,
- to assess the adequacy of the model for use in the event analysis, in particular to assess the adequacy of the Bridge Tree of the NEK PSA model for the use in event analysis and to propose corrections of the NEK PSA Bridge Tree for adequate use in event analysis.

This project is executed in close cooperation with the NPP Krško.

Independent analysis of events

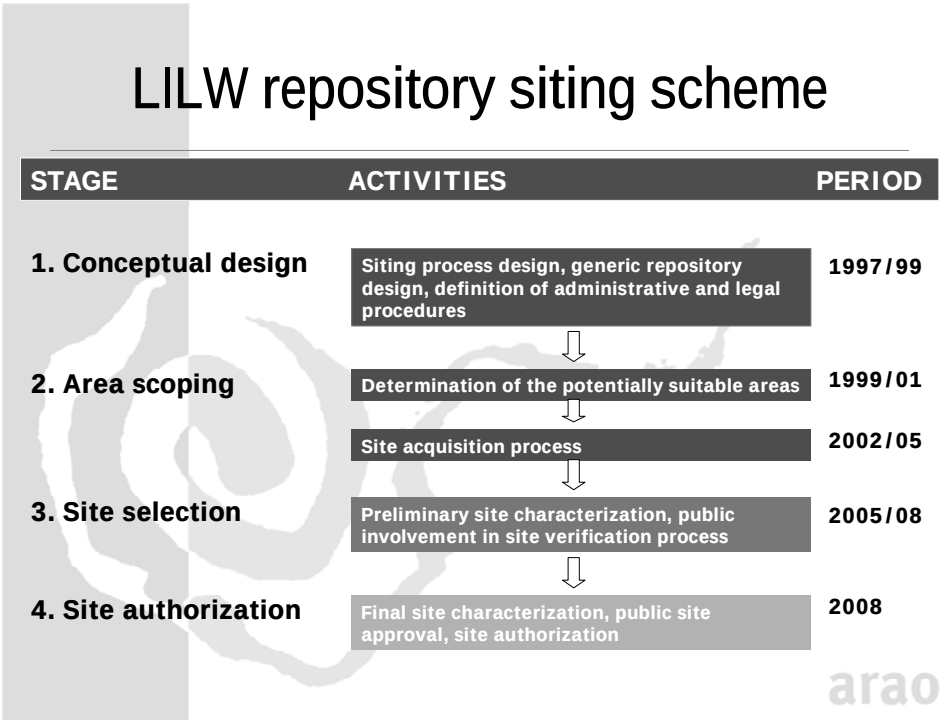
In December 2002 the SNSA hosted IAEA staff to enhance the plant event investigation approach (ref.: IAEA-CS-59 "Use of information from precursor analysis for the enhancement of operational safety"). The root cause analysis of the forced plant shutdown was performed during the consultants' meeting. Since then the SNSA has been analyzing more complex events through internal investigations

that are independent with regard to the facility's investigations. From 2003 to 2006 the SNSA investigated seven events with a detailed analysis and four events with a limited analysis. The results were compared to the facility's results and, when necessary, additional actions were required.

Since 2004 the SNSA has been systematically following the off-site events. Out of 33 applicable events with regard to the Krško NPP, SNSA's attention was focused on 16 events and additional requests for information were sent to the Krško NPP. Most of the mentioned events are still in the course of proceeding.

iii. Siting of LILW repository

The Slovene approach to the LILW siting process can be condensed in the following scheme, comprising all of the four planning stages advised by the IAEA:



LILW Repository Siting Scheme

In 2004, all Slovene communities were invited to participate to the LILW siting process. Eight communities responded positively, while three of them withdrew immediately due to local public opposition. Three most favourable sites, selected from the twelve locally acceptable sites in five communities, were proposed by the Slovene Radwaste Agency ARAO for siting and construction in July 2005 and agreed on by the Government in November 2005.

Based on preliminary design, three repository options were studied for a site close to the Krško NPP. Out of these three, a repository with silos as disposal units was proposed by the ARAO as an optimal solution based on a comparative feasibility study, strategic environmental assessment and the corresponding safety case. Approximately 55 m deep and 30 m diameter silos shall be built from the surface into the poorly pervious weak rocks underlying a thin, very pervious, gravel aquifer. According to the legal procedure, this proposal shall be further verified via a formal public hearing and finally accepted by the Government. Subsequently, a further silo design optimisation is to be expected which might modify the above dimensions.

The final, optimised proposal, together with safety analyses will be submitted to a further public hearing by mid 2008 and, if accepted, a governmental site authorisation is foreseen at the beginning of 2009.

Meanwhile, site evaluation activities for an additional, newly proposed site were also launched.. This site is an alternative to the first one if anything went wrong there either concerning public acceptance or for some other reasons. It might reach the authorisation level by late 2009 or early 2010.

The Slovene law on Nuclear and Radiation Safety requires a LILW site authorisation by 2008 and an operational LILW repository available by 2013. Given the actual state of the LILW repository siting process, the first target will probably be missed by a couple of month. The second one, on the contrary, will probably be achieved in 2012, i.e. one year ahead of the deadline.

iv. Decision on high-level RW

As it was stated during the previous CNS review meeting, the decision about disposal of high level radioactive waste should be taken by 2020. In Slovenia this position has not changed so far and it is too early to report about any conclusions or changes with regard to high level radioactive waste disposal.

v. Agreement with regard to the repository between Slovenia and Croatia

Slovenia is not in a position to report about any activities regarding the planning or construction of a repository for the Croatian half of radioactive waste, which should be taken by Croatia as stipulated in the Agreement between the Government of the Republic of Slovenia and the Government of the Republic of Croatia on the regulation of status and other legal relations connected to investment in the Krško NPP.

vi. Qualification of domestic subcontractors (Maintaining and developing the necessary infrastructure)

The Act on ionising radiation protection and nuclear safety of 2002, in its Article 134, defines activities for ensuring the qualifications of authorized experts and competent authorities. In accordance with this article the State shall ensure resources for the financing of the training of authorized experts in radiation and nuclear safety, for the development of studies and independent expert reviews and for international expert co-operation in the field of protection against ionising radiation and nuclear safety.

In September 2005, the Slovenian Government adopted the Terms for a long-term assurance of supporting activities in the field of nuclear and radiation safety. Based on these terms a Programme of long-term assurance of supporting activities in the field of nuclear and radiation safety was prepared. In accordance with the programme, nuclear safety and technology shall be placed to the list of preferential topics in the field of energy. Public funding earmarked for the research and development shall:

- support education and particularly postgraduate studies,
- assure consulting, expert and research support to the state administration and domestic economy,
- support European cooperation, especially on the EURATOM projects within the Framework Programmes of the European Commission and international cooperation under the auspices of other international organizations and bilateral agreements.

The Ministry of Higher Education, Science and Technology shall examine closely the possibility of strengthening education in the nuclear areas at all three Bologna study levels, particularly for the internationally connected and recognised programmes that are already active and have research support.

This programme was a prerequisite for including the sub-programme Assurance of radiation and nuclear safety into the invitation of tenders for funding the Target research programmes (CRP) under the scope of Slovenian Competitiveness 2006-2013. The sub-programme consisted of three research areas:
- Safety challenges of nuclear and radiation installation technologies,
- Safe disposal of radioactive waste and spent fuel,
- Monitoring of the radioactivity in the living environment.

In the bidding procedure five projects were accepted: "Implementation of methods and techniques for the assessment of ageing and for the assurance of safe operation of nuclear and radiation installations", "Improvement of Nuclear Safety with Probabilistic Safety Analyses", "Use of Reference Test Cases in Nuclear Installation Management", "Characteristics if Natural and Man-Made Barriers for Spent Fuel and LILW Repository" and "Tritium Tracking in the Vicinity of the Krško NPP". The duration of the projects is two years (2006–2007). The projects were obtained by three organizations and the total value of all five projects is about 180,000 EUR.

vii. Quality Management System

An observation of the rapporteur during the Third Review Meeting was that the Krško NPP is still using the quality management system based on 10 CFR 50, App. B.

The Krško Quality Assurance Plan is a top-level quality document for operational phase activities. The requirements identified by the Quality Assurance Plan are implemented according to management directives, programmes, plans, procedures or instructions grouped in plant level manuals, division level manuals and department level manuals and programs. The QA Plan contains eighteen sections, relating to the eighteen criteria of 10CFR50, Appendix B and the intent of the fourteen criteria of 50-C/SG-Q. As cross-referenced in the Quality Assurance Plan, the subject of each section of the plan relates to the criterion on that subject found in 10CFR50, Appendix B and 50-C/SG-Q.

Thus the Krško NPP Quality Assurance Plan meets the criteria of 10CFR50 Appendix B and 50-C/SG-Q, and it has been constantly upgraded in line with the current trends in quality management..

vii. Information about the Notification of Neighbouring Countries in Case of a Nuclear Emergency

As described in Chapter 16, Slovenia has bilateral agreements on early notification in case of a nuclear emergency with three out of four neighbouring states (i.e. with Austria, Croatia and Hungary). These countries would be informed as soon as possible via facsimile to their respective contact point about the emergency as soon as the conditions stipulated by the agreement are met. Nevertheless, also the Italian regulatory body for nuclear safety will be informed about the emergency according to the SNSA internal procedures, although there is no international obligation for such notification. With regard to Croatia, Slovenia is fully aware that the Krško NPP is located approximately 10 km from the border and the appropriate Croatian authorities shall be promptly informed about the situation in case the

emergency arises. For the time being, information to Croatia still goes from the national level in Slovenia and is regulated by the bilateral agreement. In case of emergency in the Krško NPP, the messages will be sent from the Krško NPP to the National Notification Center in Ljubljana. Slovenian authorities will immediately forward all the received messages to the Croatian Contact Point in Zagreb. The delay due to sending the Krško NPP messages through the National Notification Center should be negligible. There is also another important reason for the communication from the national level. In Slovenia, the decision-maker about protective actions is at the national level, therefore direct information about the protective measures to be implemented comes from the national level.

B. Planned Measures to Improve Safety

i. Installation of a new emergency diesel generator

An updated seismic PSA study was conducted in 2004 during the first Periodic Safety Review (PSR) of the Krško NPP. Sensitivity studies indicating the safety benefits of further plant upgrading were also performed in the 2004 seismic PSA study. It was evaluated that addition of a third large 3.5MW 6.3kV diesel generator or, alternatively, incorporation of a small portable diesel generator is the most safety-beneficial modification. This modification would significantly reduce the seismic risk.

The opportunity to significantly improve safety was recognised by both sides, the Krško NPP and the SNSA. Especially the SNSA expressed a strong interest for the additional diesel generator to increase the Krško NPP safety in case of a seismic event and also other events with loss of offsite power. Therefore, the Krško NPP and Worley Parson prepared a new detailed analysis to support the decision about the most effective modification. The feasibility study revealed the use of a single 3.5 MW diesel generator or two 2.0 MW diesel generator as the preferred options. Based on the feasibility study the Krško NPP will install a Class 1E 3.5MW diesel generator by 30.6.2012 instead of 15.12.2010. The reasons for the extension of time are technical (time needed for diesel generator purchase order and construction) and financial (the Krško NPP will replace the reactor head and the stator of the main generator). There are no other plans for the annual outage in 2011.

ii. Action plan for the PSR

The NPP Krško Periodic Safety Review (PSR) was completed and approved in 2005. PSR gave a good review of the plant operational and design status and it confirmed that the plant was as safe as originally intended and that there were no structures, systems, or components that could limit the life of the plant in the next ten years. This review revealed no major safety issue, but it provided a number of recommendations to further enhance the safety of the plant.

The NPP Krško PSR resulted in numerous corrective measures that were ranked through prioritization process. The types of available measures differ depending on the type of safety issue. Some typical deficiencies which may be identified are:
- Deficiencies of information
- Deficiencies of design
- Deficiencies of operation
- Deficiencies of safety culture

The PSR Action contains 124 actions grouped in 13 areas:
1. Ageing management program
2. NEK plant specific EOP supporting activities

3. Krško individual plant examination, external events supporting activities
4. Krško plant specific mechanical analyses closure activities
5. Krško operational problems closure activities
6. Krško IAEA RAMP Mission recommendations closure activities
7. Accident analysis closure activities
8. Krško standard technical specifications closure activities
9. Krško regulatory compliance program closure activities
10. Potential maintenance problems closure activities
11. Potential environmental qualification problems closure activities
12. Potential design problems closure activities
13. Potential seismic design problems closure activities

The PSR Action Plan, which was approved by the SNSA in August 2005, contains the issues to be implemented at the NPP Krško together with the associated milestones. The milestones were assumed based on safety and best estimate resource availability. The NPP Krško reports twice a year to the SNSA on the progress of activities and in the month after the closure of an activity. By the end of 2006, 20 of the actions were closed. Most of the actions will be completed by the end of 2008 and the whole PSR Actions Plan must be completed by the end of 2010.

The main closed activities cover the potential seismic design problems closure activities (PSHA) such as:
- comparative analysis of the representative class 2/3 piping system,
- reconciling the new seismic hazard input in a deterministic manner,
- seismic design and seismic PSHA summary report differential movements (thermal, LOCA, seismic) at building penetrations,
- civil structure; perform a simplified deterministic calculation to establish the seismic adequacy of the condensate tank and of the refueling water storage tank.

The other closed activities deal with the deficiency of housing of the Barton models 752/753 transmitters, a review and changing of the preventive maintenance programme, maintenance, testing and inspection procedures, and a review of civil structure adequacy of the containment buckling capacity.

iii. Governmental approval of the revised programme of plant decommissioning and radioactive waste disposal

Obligations relating to the decommissioning of the Krško NPP are defined by the treaty between the Slovenian and Croatian Governments on solving statutory and other legal relations related to the investment into the Krško NPP, its exploitation and decommissioning. The treaty determines, inter alia, that the decommissioning of the Krško NPP and the disposal of radioactive waste are joint responsibilities of both contractors. A Programme of Decommissioning was prepared, which is to be revised at least every five years. The purpose of the programme was to estimate the costs of decommissioning and to determine the corresponding amount of regular levy liable for payment for every kWh of electric power delivered from the NPP.

The programme was confirmed in March 2005 by the Interstate Commission. According to the interstate treaty, Croatia should start collecting financial resources for the decommissioning of the Krško NPP in its own fund, which has not yet been established. Instead of that Croatia issued the Governmental Decree in April 2006 and started to collect decommissioning funds on a separate account within the state budget.