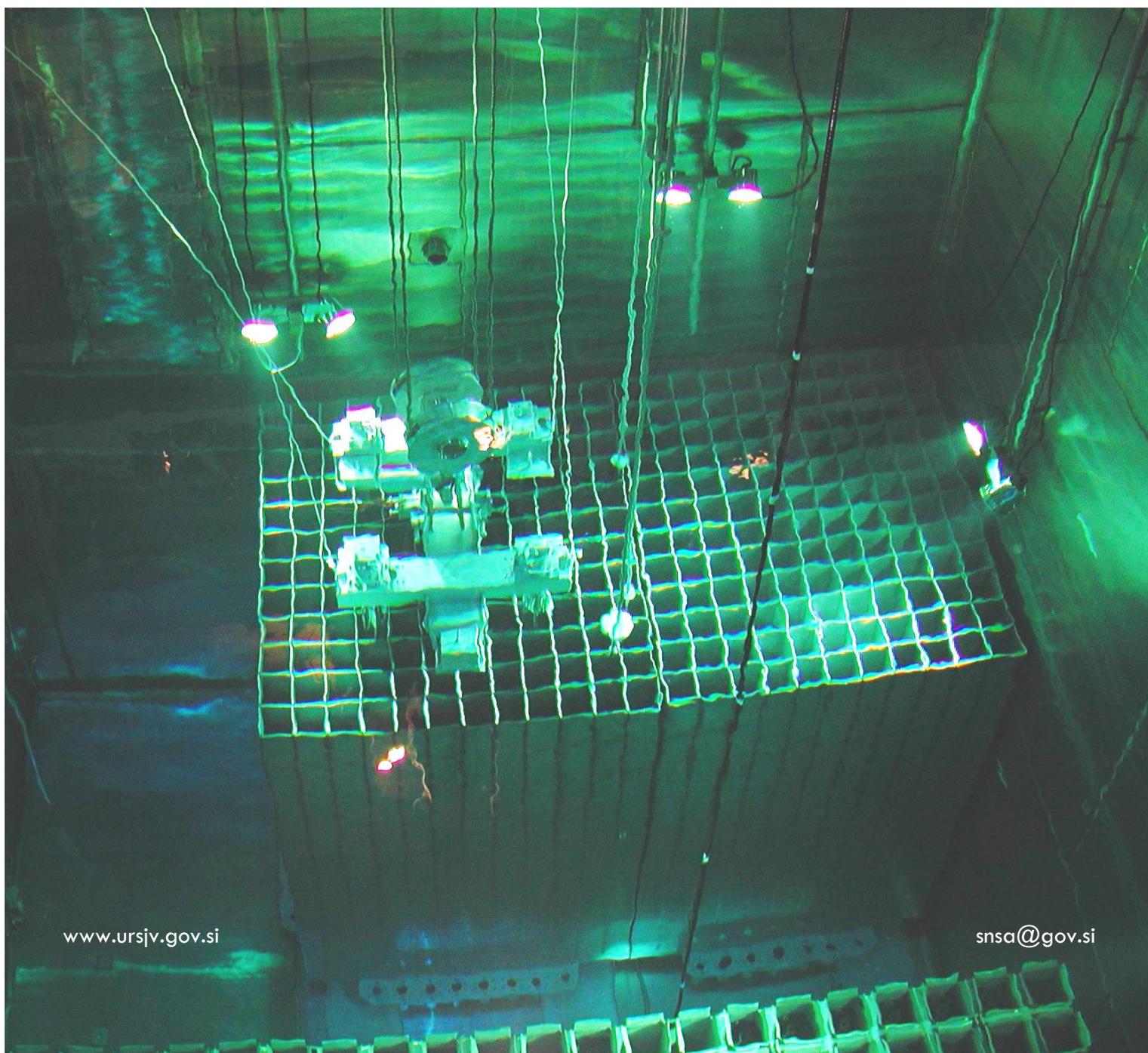




REPUBLIKA SLOVENIJA
MINISTRSTVO ZA OKOLJE IN PROSTOR
UPRAVA REPUBLIKE SLOVENIJE ZA JEDRSKO VARNOST

Second Slovenian Report under the
JOINT CONVENTION ON THE SAFETY OF SPENT FUEL MANAGEMENT
AND ON THE SAFETY OF RADIOACTIVE WASTE MANAGEMENT

Answers to questions raised by other contracting parties



Answers to questions raised by other contracting parties under Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management were prepared by the Slovenian Nuclear Safety Administration, the Krško NPP, the Jožef Stefan Institute, the Agency for Radwaste Management, the Žirovski Vrh Mine d.o.o., and the Slovenian Radiation Protection Administration

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	Country	JC Art. No.	Reference	Question/Comment	Answer
1.	Austria-1	22	Section F.22 (F.31)	Is there any decommissioning concept/plan for the deconstruction, waste conditioning, cost coverage for disposal,...etc. regarding the TRIGA Mark II reactor, which is planned to be operated until 2013, but not longer than until 2016?	At the moment there is no document on decommissioning of the TRIGA Mark II reactor yet. According to the National plan for Radioactive waste Management the J. Stefan Institute shall prepare by the end of 2007 a decision on future operation of the TRIGA Mark II reactor in which the decommissioning and spent fuel management shall be also addressed.
2.	Austria-2	26	Section F.26	Is there any decommissioning strategy considered cooperation on an international or bilateral level?	Due to the contract with Croatia the decommissioning of Krško NPP is a bilateral obligation of Slovenia and Croatia.
3.	Austria-3	31	Section B.32 and L	Is the remediation process part of the decommissioning plan of Žirovski Vrh Uranium Mine? Where will the existing waste on site disposed after decommissioning and remediation?	The site remediation of the Žirovski Vrh Uranium Mine includes the decommission of all contaminated objects and impacted land due to uranium ore and concentrate production. Mine wastes and contaminated materials (construction debris, soils) from decontamination will be disposed at the Mine Waste Pile Jazbec.

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4.	Austria-4	32	Section B	<p>An alternative strategy for a final storage of SF and HLW considers the “option of export and dispatch in a third country”.</p> <p>Which are the long-term considerations for such an alternative concept and through which initiatives could this be supported?</p>	<p>There are at least three reasons for keeping such an option open.</p> <ol style="list-style-type: none"> 1. The construction of the HLW repository for final disposal of spent nuclear fuel of only one power reactor would most probably be much more expensive (per kilogram of HLW disposed) than sharing the cost of such facility with other producers of HLW. 2. The lower cost per kilogram of HLW disposed would guarantee easier implementation of more stringent safety requirements to the common (international, regional, global or whatever the solution might be) final repository. 3. In long term at the bigger disposal it would be easier to implement security and safeguard measures. <p>Slovenia is willing to consider any initiative evaluating international solutions for HLW disposal. It has by itself initiated a discussion about this problem between central European countries in late 2003, however after the first interest due to different reasons the idea is not developing much further from first ideas.</p>
5.	Austria-5	32	Section B	<p>To what extent would the initiative of a Regional Conference of Central European Countries – as discussed during the 1st Review Meeting – apply to an alternative strategy for final storage of SF and HLW taking into account the “option of export and dispatch in a third country”?</p>	<p>Assuming that by the Regional Conference of Central European Countries the so called Ljubljana Initiative from December 2003 is meant, we can comment that any solution on that basis would be beneficial for Slovenia and could be treated as quoted alternative strategy. Unfortunately we have to report, that the Ljubljana Initiative after first months of initial momentum did not develop much further.</p>

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6.	Austria-6	18	Sections E and F	<p>Has Croatia agreed with the review of the decommissioning and disposal programme according to the bilateral agreement between Slovenia and Croatia?</p> <p>How is the financing of the planned LILW repository influenced by the Croatian practices not to establish a fund for financing?</p>	<p>On 8 December 2004 Croatian Parliament adopted the NPP Krško Decommissioning and Low and Intermediate Level Wastes and Spent Fuel Program (Decommissioning Program). The Decommissioning Program was jointly adopted by Croatia and Slovenia at the Bilateral Commission on 4 March 2005. In accordance with 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 Relationships, Connected with the Investments in the Nuklearna Elektrarna Krško d.o.o. (Krško NPP, Llc.), its Exploitation and Decommissioning (Bilateral Agreement) Croatia should one year after enter into force, therefore since March 2004, establish legal requirements to contribute to its own decommissioning fund. According to our knowledge Croatia has not yet established its decommissioning fund. Slovenia is concerned that lack of decommissioning financial resources for Croatian liabilities may jeopardise the successful decommissioning and radioactive waste and spent fuel disposal from the Krško NPP. However, Slovenia believes that the contract between the two countries shall be dully respected.</p>

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7.	Austria-7	22	Section F	<p>For the Central Interim Storage in Brinje no cost coverage was mentioned, if once this facility will be decommissioned and the LILW be finally disposed.</p> <p>What kind of financing covers the later decommissioning costs of the Central Interim Storage and final disposal of this waste?</p> <p>Who will cover the costs for final disposal of the historical waste, before the “polluter-pays” principle was coming into force in 2000?</p>	<p>For Central Interim Storage Facility (CISF) in Brinje the plans for decommissioning of the facility are discussed in the Safety report for CISF (May, 2005). It is planned that all short-lived LILW waste will be disposed of in the LILW repository according to the WAC for repository. The rest of waste which is long-lived or which will not pass the WAC criteria will remain stored in CISF.</p> <p>According to the National program on radioactive waste and spent fuel management (Feb, 2006), it is foreseen that after the construction of the LILW repository a new storage for long-lived institutional waste will be built next to the repository. CISF will than be decontaminated and used for other purposes. The costs associated with decontamination of CISF shall be covered from the budget of the ARAO. The disposal solution for the long-lived institutional waste is planned to be provided together with spent fuel, according to present plans after 2065.</p> <p>It is also the ARAO’s responsibility to accept and provide proper further management of waste when its producer is not known (historical waste) or is incapable of paying the fee for transporting and managing the source. The expenses in such a case are covered from the state budget.</p>
8.	Bulgaria-1	32		<p>What is your long-term scheme for management of spent teleradiotherapeutic Co-60 sources that can not be returned to the manufacturer?</p>	<p>Until now the strategy for final disposal of disused sealed sources has not been decided. It is believed that some sealed sources will meet the waste acceptance criteria (WAC) of the LILW repository. The problem of remaining sealed sources will be solved together with high level waste.</p>
9.	Bulgaria-2	22		<p>What mechanism is applied in Slovenia for securing the financial resources for management of waste whose owner is unknown or can not pay the necessary fees?</p>	<p>For historical waste, the waste from unknown owner or for waste of an insolvent owner, the expenses of transporting, storing and managing the waste are covered from the national budget. The Government has a right to demand from such owner of waste the remuneration of costs incurred.</p>

	Country	JC Art. No.	Reference	Question/Comment	Answer
10.	Bulgaria-3	22		What arrangements are applied to secure financial resources for long-term management of waste from small generators?	Until 2000, the ARAO was accepting institutional waste free of charge. Since then, according to the “polluter pays” principle, each waste producer is charged by ARAO for waste acceptance according to the price list. Upon acceptance of waste all liabilities for waste are transferred to the ARAO. Management of historical waste and the waste from unknown owner is financed from the state budget.
11.	Bulgaria-4	24		What are the radiological safety criteria for waste disposal and how were they determined?	Slovenia is applying ICRP 77 and 81 recommendations where dose limit for members of the general public from waste disposal is 0,3 mSv/y in case of natural degradation after closure.
12.	Canada-1	21	Page 49	Can Slovenia please indicated what are the differences between designating a facility as a 'radiation facility' and one that is designated as a 'less important radiation facility'?	Based on the Decree on practices involving radiation (Official Gazette RS, 48/2004): 1. a 'radiation facility' is a facility where: - production or processing of radioactive substances could cause overexposure of members of the public, - use of radiation sources for irradiation of subjects or foodstuffs with high dose rates which could cause deterministic effects on population, - accelerator, which accelerates particles to energy higher than 25 MeV, is used. 2. a 'less important facility' is a facility where: - use of radiotherapeutic devices such as accelerator, device with sealed sources, X-ray machine, are carried out , if they are operating at voltage higher than 150 kV, - use of fixed devices for industrial radiography, where energy of radiation is higher than 150 keV, - use of unsealed source, when dealing with unsealed sources is carrying out in class I or II, - accelerator, which accelerate particles to a maximum energy of 25 MeV, is used, - use of sealed sources, which causes dose rate higher than 1Sv/h at the distance of 1 meter without shielding.

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13.	Canada-2	19	Page 44	Can Slovenia provide further information on their enforcement policy? Is enforcement a graduated approach? In addition to the power of the inspector listed on page 43, can an inspector revoke or suspend a licence due to non-conformance?	<p>Slovenian legal system ensures graded approach in enforcement policy. This is assured by the Inspection Act which is to be followed by all inspectors in all (not only nuclear) fields; such an approach is preserved also in the 2002 Nuclear Act.</p> <p>Based on the Inspection Act the inspector may (if by his/her assessment such a measure is enough and appropriate) only warn the licensee about the irregularities and set a date (period) for corrective measures to be carried out. The inspector may also (among other measures) perform all measures in line with the Minor Offences Act, or report (in case of a criminal offence) the licensee to the public prosecutor.</p> <p>As it is explained in the National Report the inspector may also terminate radiation practice or use of radiation source (if the operator operates without the licence), but may not revoke or suspend the licence. This can be done only by the authority which has issued the licence; but the inspector may propose such a measure.</p>
14.	Canada-3	25	Page 73	How are individual operator's emergency plans incorporated into the national nuclear emergency plan?	<p>The operator's emergency plans are separate from the national nuclear emergency plan. The operator's emergency plan is an integral part of the safety analysis report, which is the principal licensing document. The operator's emergency plan has to be in compliance with the national nuclear emergency plan.</p>

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15.	Canada-4	26		The maintenance of records during the operational life of a nuclear facility are an important element of any nuclear program. Records become very important for decommissioning as they extremely useful in determining the decommissioning strategy that will eventually be adopted. Can Slovenia please indicate if records are maintained, who maintains them and what type of records are required?	There is an Engineering Support Department in the Krško NPP, which is in charge of record keeping and of maintaining the database required by regulations, also regarding decommissioning. Although there are no specific legal requirements for record keeping in regard of the decommissioning, it is deemed that the existing record keeping system of Krško NPP is sufficient to provide all necessary information related to decommissioning phase of facility. The legally binding requirements in this regard are in preparation.
16.	Croatia-1	32		It is stated that after reracking there is total number of 1694 storage location available for spent fuel that is enough for a plant lifetime operation till year 2023. In case of NPP life extension, is there a technical possibility for further extension of spent fuel pit capacity?	During the reracking project Krško NPP performed the complete analysis for spent fuel pit capacity extension in two steps. In step one NPP performed the capacity extension up to 1694 storage locations. In case of NPP life extension for 20 years the operator has a technical possibility to extend the spent fuel pit capacity from 1694 to 2321 storage locations which is sufficient for additional 20 years of plant operation.

	Country	JC Art. No.	Reference	Question/Comment	Answer
17.	Croatia-2	32		<p>According to the 2002 Act, the dates for siting and disposal of LILW are 2008 and 2013, respectively.</p> <p>In the last revision of the Program for the Decommissioning of Nuclear Power Plant Krsko and the Disposal of LILW and SF, accepted by the Slovenian and Croatian Parliament it is not foreseen to have operational LILW repository before year 2018.</p> <p>Will new Act be harmonized with accepted Decommissioning Plan?</p>	<p>According to the 2002 Act the operating licence of the repository shall be ensured at least by 2013. The Decommissioning Plan does not have the power to modify the existing Slovenian legislation.</p> <p>Better assessment of costs of LILW disposal and more precise time of completion of repository will be available after the completion of the ongoing siting process and first revision of The Decommissioning plan.</p>
18.	Croatia-3	32		<p>It is stated that the new subsidiary regulations on radioactive waste management and classification of radioactive wastes which are being drafted consider, with some modifications, the Radioactive Waste categorization as recommended in the "EC Recommendation on a Classification System for Solid Radioactive Waste".</p> <p>Does the new subsidiary regulation on radioactive waste classification make a distinction between Low and Intermediate short-lived waste?</p>	<p>No, low and intermediate level waste are in a common category - LILW.</p>

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19.	Croatia-4	26		It is stated that there is an Engineering Support Department in the Krško NPP, which is in charge of record keeping and of maintaining the database required by regulations, also regarding decommissioning. Does that mean that there is an operational database in which all information about changes in systems or spills or other kind of contamination are collected?	Documents and procedures are kept as part of a record keeping system. Waste inventory data (SRSF) are maintained as a computerised database. Operational events are captured in a corrective action database.
20.	Croatia-5	16		Are there any plans for characterization of the waste packages from NPP Krško for the purpose of checking their suitability for disposal?	The waste packages stored at NPP Krško SRSF are characterized to meet the acceptance criteria for storage. Before disposal they will be checked against acceptance criteria for disposal. There are no plans to do any kind of characterization of Krško NPP waste before the final repository is constructed and final acceptance criteria are prepared.

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21.	Denmark-1	13		<p>In a number of European countries there has been local resistance against the establishment of repositories for LILW. In Slovenia however, 8 municipalities has given positive feedback to a preliminary request. Do you have any explanation as to why there seems to be a more positive attitude towards repositories for LILW in Slovenia, than in a number of other European countries?</p> <p>What is the Slovenian experience with the use of a third party mediator, sup-posed to help negotiations on the way?</p> <p>Which type of organisation(s) would the mediator be associated with?</p>	<p>The main reason for 8 municipalities to volunteer to participate in the process of a LILW repository siting is financial compensation. In December 2003, the Decree on the criteria for determination of the compensatory amount due to the limited use of the environment in the area of a nuclear facility was adopted. This represents an additional incentive for local communities during field investigation, construction and operation of the LILW repository. It defines that the compensation in total of 2.3 mio EUR per year should be paid to the hosting local community during repository operation and 10% of the value during site investigations and construction. The amount of 230.000 EUR during the site investigations seems to be large enough to raise local interests. In addition to the compensation for the limited land use, also the rights of local communities are an important factor that influenced the applications. It should also be mentioned that the local community has the right to withdraw from the siting procedure until the site is approved and the National site development plan adopted.</p> <p>For communication with the local communities a mediator was recruited, he is completely independent, although financially supported by ARAO. The mediator represents a link between the two parties and thus facilitates the communication and negotiations between the investor and the local community. Mediator represents connection between public interests in local environmental protection and the governmental interests to safe disposal of radioactive waste. Our mediator for the site selection process was introduced in February 2002. It is a woman with the university education in chemistry and also in alimentary technology, broad working experience in industrial and technological processes, some political background and also some entrepreneurial experience. In initial phase of the siting process she had meetings and presentations in more than 60 local communities (out of 193 in Slovenia) where she mainly presented the approach to the site selection and the concept of the repository. She also collected questions from local environments and provided answers by addressing them to the competent organizations. She also mediated some hot situations where different opinions were present. The role of mediator is found very useful in the siting process.</p>

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22.	France-1	3	Section C, page 29	Does the report address issues related to NORM and TENORM?	The report does not address the issues related to NORM and TENORM.
23.	France-2	12	Section H, page 86	Could Slovenia provide elements on the milestones of the licensing schedule for the mentioned projects (licensing means all the interactions between the operator and the SNSA)?	<p>The Žirovski vrh uranium mine was preparing the Safety Analysis Report and project documentation for the Jazbec mine waste pile in the period from 2003 to 2005. Throughout this period the SNSA received copies of documents as they were produced. A dully complete application was received in April 2005 and the license was issued in June 2005. The licensing period was short due to a good pre-licensing phase.</p> <p>In the beginning of 2003 ARAO sent an application for reconstruction license of CISF to the Spatial Planning Office, an application for consent to reconstruction to SNSA (required for license for reconstruction) with SAR enclosed and an application for consent on environmental protection to the Environmental Agency (EA), EIA enclosed (derived from SAR).</p> <p>In September 2003, SNSA issued the consent for reconstruction and an approval of SAR. In October 2003, EA issued the consent on environmental protection and Spatial Planning Office issued the license for reconstruction to ARAO. In May 2004, a technical inspection took place, some deficiencies were registered. In July 2004 ARAO applied for a license for trial operation of CISRAW which was issued by SNSA in June 2005.</p>

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24.	France-3	19	Section E, page 43	Could Slovenia provide information on past experience of inspections (statistics, major findings and follow-up actions)?	<p>Krško NPP spent fuel /radioactive waste storage site: In 2004/05 a number of inspections was performed, inventory in the SRSF, inventory in the Decontamination Building, treatment of solid and liquid radioactive waste (decontamination of 30 drums of different contaminated waste oils), housekeeping, radioactive monitoring, procedures, records) - findings: rarely poor housekeeping, actual practice in the Krško NPP was not always sufficiently covered with procedures and responsibilities were not always clear enough.</p> <p>Central Interim storage: In 2004/05 ten (10) inspections were performed. The activities on the reconstruction of the Central Interim Storage were primarily inspected. The concordance of performed work with the approved Central Interim storage project was controlled.</p> <p>In the course of planned inspections SNSA inspectors also dealt with regular Agency's activities with regard to performing their duty of management with radioactive waste (quantity/inventory of stored radioactive sources, acceptance of radioactive waste, current status of facilities, housekeeping, radioactive monitoring, procedures, and records). The inspections also concerned storage activities, training of employees for working in the storage, emergency preparedness and review of control of radioactivity of storage surroundings. Findings: deficiencies in procedures/responsibilities and documentation: The deficiencies and irregularities found in the course of these inspections were corrected by ARAO within the required time.</p> <p>Boršt mill tailings site and the Jazbec mine waste pile at Žirovski vrh: In 2004/05 two (2) inspections were performed (inventory, current status of facilities, radioactive monitoring) - findings: a flaw in the drain line was observed and remedial measures were performed.</p> <p>Licensed experts are involved in some specific inspections/evaluations (e.g.: mostly for outage activities)</p>

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25.	France-4	19	Section E, page 41	Could Slovenia indicate the entities that provide the mentioned independent experts that provide opinions on the SAR? Are there any specific dispositions for ensuring effective independence of the reviewers?	The term “independent experts” corresponds to the term “technical support organisation”. The appointed experts for radiation or nuclear safety shall be legal entities or natural persons who have obtained a licence from the Ministry of the Environment and Spatial Planning. The appointed experts must have certain education and experience in the field of radiation and nuclear safety. All safety related documents such as the Safety Analysis Report, Periodic Safety Report and modifications of Safety Analysis Report must be reviewed by an appointed expert who provides non compulsory opinion on the documents. The regulatory body then makes the final decision independently. In a small country with small nuclear industry and limited pool of expertise it is sometimes very difficult to ensure effective independence of reviewers. With administrative arrangements for each licensing case the independence of the reviewers is assured.
26.	France-5	19	Pages 41-42	Could Slovenia provide statistics on recently performed inspections, the corresponding topics and major findings? Does SNSA involve licensed experts in the inspections?	The same as France-3.
27.	France-6	20	Section E, page 47	Could Slovenia provide clarification on the share of responsibility between SNSA and SRPA for the uranium mining sites remediation projects?	In principle the SNSA is responsible for emission into the environment but SRPA is responsible for exposure to population. According to the 2002 Act the SNSA is responsible for: status of the facility, consents to mining work, licensing for operation, the completion of a decommissioning and the closure of a repository. The SRPA performs inspection tasks in the area of radiation protection (dose limits, protection of exposed workers, etc.).

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28.	France-7	32	Section B, page 19	Is the waste stored in Brinje Central Interim Storage partially conditioned and what type of conditioning method is implemented? Is re-packaging planned in view of disposal?	<p>Yes, waste is partially conditioned:</p> <p>In 2001, treatment and conditioning of spent sealed radium sources in store in the Central interim storage in Brinje (CISF) was performed in cooperation with the IAEA (IAEA Project INT 4/131/83).</p> <p>In 2002, cobalt spent sources were repacked and inserted into two drums with concrete lining (ARAO – T 1612-2)</p> <p>In late 2005, the PHARE project Europe Aid/11910/D/SV/SI entitled “Characterisation of Institutional Low and Intermediate Level Radioactive Waste in the CISF in Slovenia” was performed.</p> <p>In the frame of these projects we have implemented the following methods.</p> <ul style="list-style-type: none"> - handling, characterization, segregation and repackaging of waste in drums, - dismantling and conditioning of smoke detectors and - dismantling and conditioning of spent sealed sources. <p>Sources, conditioned for Central interim storage in Brinje (CISF), have the flexibility to accommodate future waste acceptance criteria for disposal.</p>
29.	France-8	32	Section B, page 22	Is waste conditioning at Krsko NPP associated to waste acceptance criteria?	<p>After waste conditioning packages meet criteria for storage in the Solid Radwaste Storage Facility (SRSF) in accordance with the Updated Safety Analysis Report (USAR). There are no acceptance criteria for final disposal facility yet.</p>
30.	France-9	32	Sections G and H, page 83	Could Slovenia provide the current schedule for issuing the mentioned subsidiary regulations, in particular contents of Safety Reports for spent fuel and waste management facilities?	<p>The language of regulation on radioactive waste has been approved by the Ministry of Public Administration in April 2006. It is expected to enter into force in the coming months. The regulation on the contents of Safety Reports is being drafted and is pending internal and external reviews. It is expected that it will enter into force before the end of 2006 or in the first half of 2007.</p>
31.	France-10	7	Sections G and H, page 91	Does the design and construction documentation include decommissioning preparation?	<p>Yes, Article 20 of the Regulation E1 stipulates that a part of the documentation shall address a program for permanent cessation of operation of a nuclear facility.</p> <p>Annex 1 of Regulation E2 stipulates the format and content of the Safety Analysis Report, where details of the above-mentioned are determined.</p>

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32.	France-11	9	Sections G and H, page 97	What is the frequency of periodic safety reviews?	10 years.
33.	France-12	9	Sections G and H, page 98	Could statistics be provided on incident reporting since 2002?	No incidents significant to safety as specified in article 9 and 16, occurred at the Krško NPP, at TRIGA Mark II reactor, Žirovski vrh uranium mine or at the Central Interim Storage for Radioactive Waste in Brinje in the period 2002-2005.
34.	France-12	9	Sections G and H, page 98	Could statistics be provided on incident reporting since 2002?	The RŽV management has not observed any incidents during the period from 2002 to 2005 in the managed area that would be a subject to reporting to the SNSA and to informing the public in accordance to Articles 87 and 108 of the 2002 Act.
35.	France-12	9	Sections G and H, page 98	Could statistics be provided on incident reporting since 2002?	No incidents significant to safety as specified in Articles 9 and 16 occurred at NPP Krško in the period 2002-2005. The reports submitted to the SNSA are all categorized as routine reporting and notification.
36.	France-13	General	Section K, page 111	Could Slovenia provide information on the applied licensing process for the mentioned projects (super compactor in Krsko site and refurbishment of the JSI hot cell)?	<p>According to The 2002 Act the installation of a supercompactor is a modification of the Safety Analysis Report that requires an approval of the SNSA. Consequently the operator has applied for the licence, which was issued by SNSA. The supercompactor project is currently in the installation phase.</p> <p>Although the hot cell is qualified as a “radiation facility” the same rules apply as regards the modification. However, the modification does not require the approval of the SNSA. Equipment installations and other components are regarded as like-for-like exchange.</p>
37.	Germany-1	32	Pages 27 and 28	How can you make sure that there is no possibility that clearance of a radioactive substance will cause doses exceeding 10 $\mu\text{Sv/a}$?	The Decree on practices involving radiation defines unconditional clearance levels. Reference values were taken from the EC Report RP No.122, Table 1. In approval of the conditional clearance, different scenarios must be elaborated, taking into account all relevant transfer pathways.

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38.	Germany-2	26	Page 79	What management of the residual materials is provided in the decommissioning programme for the Krsko NPP? Is the unconditional and conditional clearance of radioactive residuals included in the programme?	<p>The management of residual materials provided in decommissioning programme of the Krško NPP has envisaged separation of waste from other material that can be reused, recycled or disposed off. Due to very restrictive clearance levels of former legislation (without conditional clearance), the amount of LILW resulting from decommissioning of the NPP was estimated to 12.500 m³, which is in comparison to other national practices relatively high (nearly doubled).</p> <p>In next revision of the decommissioning plan a new regulation on radioactive waste management that will enter into force in coming months shall be applied. According to new provisions besides unconditional a conditional clearance is also possible. Therefore more realistic estimate of amount of LILW may be expected.</p>
39.	Germany-3	16	Page 97	Do the requirements for periodical safety reviews of radioactive waste management facilities comprise special measures that refer to the long-term safety of interim storage?	<p>According to the 2002 Act the operator of the facility must ensure regular, full and systematic assessment and examination of radiation or nuclear safety of a facility by a periodic safety review.</p> <p>The Ministry of the Environment and Spatial Planning shall with a special regulation determine the frequency, content and extent, duration and the method to be used for the carrying out of the periodic safety review and the method to be used for reporting on the inspections. The regulation is being drafted.</p>
40.	Lithuania-1	20		In the description of independence of regulatory body it is written that Director of SNSA is directly subordinate to the Minister of the Environment and Spatial Planning, but in "administrative decisions s(he) is independent from the Minister". Could Slovenia clarify what these "administrative decisions" mean? Do they include all necessary decisions to fulfil regulatory functions?	<p>"Administrative decisions" mean all decisions taken by the SNSA within the licensing process as well as within the inspection control. Decisions adopted by the SNSA within its scope of competence are taken solely and exclusively by the SNSA and can not be dictated or imposed on the SNSA from the Ministry of the Environment, Minister or any other body within the Ministry.</p> <p>With respect to your last question we are not sure what is meant by "decisions to fulfil regulatory functions"? If also decisions on budget and human resources are meant, then the SNSA as already mentioned in our report, is not on its own but is a part of an overall governmental regime and part of the Ministry of Environment (see more under Chapter 1 of Article 20 of our national Report).</p>

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41.	Lithuania-2	6		Is there a procedure in Slovenia of informing contracting parties according sub-article (iv)? If yes, what is this procedure?	Yes, such a procedure is included in the Slovenian legislation. It is part of the Environmental Protection Act- Article 59- which stipulates that when the intended activity could significantly influence the environment of a neighbouring country, the ministry of the environment shall inform the competent body in that country about description of intended activity and send all available data on its transboundary effects on the environment. Such information also contains the deadline on which the answer must be received whether the country would like to be engaged in the process of the environment impact assessment. In case of affirmative answer the Ministry would later on send the environmental impact report and appropriate audit of such report. At the same time the date for submission of the opinion on intended activity should be agreed. Detailed procedures are also included in some other regulations issued on the basis of the Environmental Protection Act, which are all in line with international (and EU) legislation in this field.
42.	Slovakia-1	26		What is the expected time frame for the selection, licensing and operation of the LILW repository?	Selection of site for the LILW repository is according to the 2002 Act scheduled for 2008. LILW repository should be in operation in 2013. The time schedule of repository operation is defined in the NEK decommissioning plan. According to this plan the repository will operate until 2037. Then there follows a 5-year closure period which will end in 2042.
43.	Slovakia-2	20		What is the difference between the two Expert Councils in the area of Radiation Safety vs. Radiation Protection?	The 2002 Act covers and regulates not only nuclear safety (where the competences are given to the SNSA within the Ministry of the Environment) but also the extensive area of radiation protection (where the competences are divided between the SNSA and the SRPA within the Ministry of Health; see more under the first two paragraphs of Chapter 2 under Article 20 of our national Report). Because of that the 2002 Act envisaged for both administrations (SNSA and SRPA) and both Ministries (for the Environment and for Health) two separate Expert Councils. Based on precise division of the responsibilities of both administrations in the Act, the division of tasks of both Expert Councils is also clear and separately stipulated in two different regulations.

	Country	JC Art. No.	Reference	Question/Comment	Answer
44.	Slovakia-3	26		Who is responsible for the practical implementation of the decommissioning activities (operator, ARAO)? What is the preferred decommissioning strategy (immediate, deferred)?	The operator (owner) Krško is responsible for the practical implementation of the decommissioning. ARAO together with Croatian APO is responsible for the preparation of the decommissioning plan. In the decommissioning plan strategies of immediate dismantling were preferable and were thus analyzed.
45.	Sweden-1	General	Ex summary, page 11	A statement in the policy that was adopted by the Parliament in 2004 in the resolution on the national energy programme reads "The share of nuclear energy shall be preserved at the current level." Does this imply that if the energy production/consumption increases, the production of nuclear energy should increase as well?	The Resolution on the National Energy Program clearly states that Slovenia is going to exploit the NPP Krško until the end of its projected life time (2023). In other words the nuclear share in the total electricity generation is going to decrease over the mentioned period due to increase of total electricity requirements of the country. However, the life extension of the Krško NPP will be addressed in the coming years. At the time being there are no formal decisions about any extension of nuclear electricity power production capacities.
46.	Sweden-2	General	Ex summary, page 11	A statement in the policy that was adopted by the Parliament in 2004 in the resolution on the national energy programme reads "The Krško NPP shall operate at least until 2023." Does this imply that there are plans to extend the period of operation of the NPP?	According to The Resolution on the National Energy Programme adopted by the Slovenian Parliament in 2004, the decision on life extension of the Krško NPP shall be adopted in 2012 on the basis of an evaluation programme which shall start in 2008.

	Country	JC Art. No.	Reference	Question/Comment	Answer
47.	Sweden-3	General	Ex summary, page 12	What is the rationale - or justification – for choosing the number of three (most favourable) sites for evaluation of siting a LILW repository.	A pre-feasibility study was conducted to select three most promising sites out of 8 volunteered since maximum three sites are foreseen by the Program for the preparation of the detailed plan of national importance issued by the Ministry of the Environment and Spatial Planning. The main reason for the limited number of sites is the financial one. For each of the sites investigated the compensation to the local communities has to be paid and field investigations financed.
48.	Sweden-4	32	Section B (iv), pages 19 and 20	The report notes that the principle of “polluter pays” was introduced into the segment of small producers of waste, and that the producers now pay the costs of waste management including storing, treatment, conditioning and future disposal. How are the costs to be paid by small producers determined?	See Sweden-15.
49.	Sweden-5	32	Section B (iv), pages 21 and 22	The report notes that “ ... the remaining gases are released into the atmosphere under favourable meteorological conditions.” Please explain the meaning of “favourable meteorological conditions.”	The Krško NPP releases gaseous discharges only when the meteorological conditions are favourable, that means when a value of the dispersion factor is less than $1E-4$ s/m ³ . This limit is related to the <i>short term exposure</i> of a reference group of the public to noble gases (at 500 m distance from the containment vent) to the value of 0,57 microSv/h (which is equivalent to 5 mSv per year).

	Country	JC Art. No.	Reference	Question/Comment	Answer
50.	Sweden-6	32	Section B (iv), page 23	The report notes that “The Krško NPP has started using an external service for the incineration of combustible waste.” Does this external service require a license? Please give some more information.	In this particular case Krško NPP is sending waste for incineration to Studsvik, Sweden. Therefore, only a license for export and import was required. If external (foreign) services are used in Slovenia, Article 37 of the 2002 Act stipulates that a foreign legal entity may carry out work within a controlled area if it has obtained a license for carrying out a radiation practice pursuant to the 2002 Act or has in the country of origin obtained a license for carrying out a radiation practice under conditions and in accordance with a procedure equivalent to the conditions and the procedure pursuant to the 2002 Act. SNSA validates such a license and issues a certificate.
51.	Sweden-7	19	(2i), page 40	The report notes that seventeen new decrees and regulations have been issued so far on the basis of the 2002 Act. Which body is responsible for issuing decrees and regulations, and what is the difference from a legal point of view?	A “Decree” is adopted and issued by the Government, while a “Regulation” is adopted and issued by the Minister. In both cases they can only be issued if a law (in case of the decree) or a law/decree (in case of the regulation) empowers the Government/Minister to further and in detail elaborate or regulate some conditions, circumstances, measures or relations, which are in general terms already regulated in the law. It is needless to stress that both, decrees and regulations are legally binding.

	Country	JC Art. No.	Reference	Question/Comment	Answer
52.	Sweden-8	22	(i), Krško NPP, page 52	What methods – or means – are used to determine whether human resources (staffing) are adequate or not at Krško NPP?	<p>The Krško NPP possesses a detailed 5-year plan of Human Resources requirements. Since the Krško NPP does not have a high attrition rate, with the exception of normal retirement process, the planning of Human Resources requirements is therefore relatively simple and reliable. Alternate employees are recruited among the plant scholars (technicians and engineers). A selecting procedure of candidates is a standard one covering an interview, a personality test, motivations and interests of an applicant and specific on-the-job training. A short list of candidates is conducted in the preparatory phase on the basis of the job performance and training results to demonstrate the ability to work independently.</p> <p>Following the recruitment, formalised training and professional education of personnel is conducted.</p> <p>Workers with importance to nuclear safety require a license. Requirements, criteria and methods to obtain such license are in details determined in the Regulation on conditions that workers performing works important for safety in nuclear and radiation facilities, shall comply with (Off. Gaz. No. 74/2005).</p>
53.	Sweden-9	22	(i), ARAO, page 54	What methods – or means – are used to determine whether human resources (staffing) are adequate or not at the Agency for Radioactive Waste Management (ARAO)?	<p>ARAO - Agency for Radwaste Management is state owned. Its activities are managed by the director. The Government supervises and directs the work of ARAO through the Managerial Board, which consists of five members. The board is also responsible to supervise the adequacy of human resources of the ARAO. The organizational chart of ARAO must first be approved by the Managerial Board and also agreed by the Ministry of Economy.</p>

	Country	JC Art. No.	Reference	Question/Comment	Answer
54.	Sweden-10	12	Pages 85 and 86	The report notes that the management and operation of Central Interim Storage for Radioactive Waste in Brinje to ARAO in 1999 and that ARAO is expected to meet licensing requirements in 2005. What is the outcome i.e. is the facility now allowed to operate under the new license?	The reconstruction and refurbishment of the Central Interim Storage was completed in 2004. Since June 2005 the storage has been licensed for a two-year trial operation. It is expected that after successful completion of the trial operation, a licence for regular operation will be issued by SNSA in 2007.
55.	Sweden-12	13	Page 90	The report notes that the Decree on the Criteria for the determination of the Compensatory Amount due to the Limited Use of the Environment in the Area of a Nuclear Facility (Official Gazette RS, No. 134\2003), which was adopted at the end of 2003, determines the financial compensation to the local communities during the investigation phase, and for the community which will be selected to host the LILW repository. Could you please present some more information about the nature of the compensatory amount, and how it is determined?	The annual compensation for an LILW repository operation is 2,331,180.00 EUR. Payments start with the operating license acquisition. According to the Decree local communities are entitled to receive 10% of that compensation also during site exploration and construction phase of repository. The compensation payments for limited land-use are stopped in the first year after the relevant administrative body establishes that the repository is closed.

	Country	JC Art. No.	Reference	Question/Comment	Answer
56.	Sweden-13	14	Page 91	<p>The report notes that the application for a construction license for a nuclear facility shall include e.g. relevant evaluations and opinions of an authorised expert for radiation and nuclear safety.</p> <p>What qualification is required to qualify as an authorised expert and how is the experts opinion evaluated?</p>	<p>The term “authorised experts” corresponds to the term “technical support organisation”. The appointed experts for radiation or nuclear safety shall be legal entities or natural persons who have obtained a licence from the Ministry of the Environment and Spatial Planning. The appointed experts must have certain education and experience in the field of radiation and nuclear safety. All safety related documents such as the Safety Analysis Report, Periodic Safety Report and modifications of Safety Analysis Report must be reviewed by an appointed expert who provides non compulsory opinion on the documents. The regulatory body then makes the final decision independently.</p>
57.	Sweden-14	16	Page 97	<p>The report notes that the operator of a radiation or nuclear facility shall ensure regular, full and systematic assessment and inspection of the radiation or nuclear safety of the facility through a periodic safety review (PSR).</p> <p>What is the period of time between PSR:s? Does it correspond to the license period for the facility? What about repositories before they are closed?</p>	<p>Obligations regarding PSR are to be precisely set in a new Regulation JV9 (currently in preparation).</p> <p>Pursuant to Article 111 of The 2002 Act the operating license can be issued for a maximum of 10 years. In the application for a license renewal attachment of a PSR is a prerequisite.</p>

	Country	JC Art. No.	Reference	Question/Comment	Answer
58.	Sweden-15	28	Page 109	<p>The report notes that since 2000 each waste producer should pay for the acceptance of waste by the Central Interim Storage for Radioactive Waste in Brinje.</p> <p>How are the costs to be paid by small producers determined and what is the size of the fee?</p>	<p>In Slovenia, a "polluter-pays" principle is in use. All small users have to pay a fee to the Agency for Radwaste Management (ARAO) - which operates the Central LILW Storage at Brinje.</p> <p>In 2000, a price list was published in the Off. Gazette. The fee is calculated from three components: Fee = costs of storage + costs of treatment and preparation + costs of transport The last two parts are determined, based on actual costs. Costs of storage are based on the equation $E \cdot f$, where E means basic costs for a volume unit and f is a factor of 0.5, 1 or 3 (first one for radionuclides with very short half-life of not more than 0.5 years and last one for those with half-life of more than 30 years).</p> <p>For instance, the costs of storage of: - one Co-60 sealed source of 4 GBq would be: $1 \text{ piece} \cdot 78,000 \text{ SIT/piece} \cdot 1,3 = 101,400 \text{ SIT (app. 423 €)}$. - one 4 GBq Am-241 source $78,000 \text{ SIT/piece} \cdot 3 \cdot 1,3 = 304,200 \text{ SIT (app. 1267 €)}$</p>
59.	Sweden-16	28	Pages 109 and 110	<p>The report also notes that in cases where sealed sources are found at the premises of scrap-dealers, ironworks etc., the above-mentioned fee is paid by them.</p> <p>Has the risk that a scrap-dealer or ironworks may choose to get rid of an orphan source in some other (i.e cheaper) way than turning it over to ARAO for a fee been evaluated?</p>	<p>Such risk may always exist, but so far no indications of illegal disposal of such sources have been detected. In practice, scrap-dealers contact SNSA which provide them first expert assessment and support. Found sources are receipted by ARAO against fee.</p>

	Country	JC Art. No.	Reference	Question/Comment	Answer
60.	Sweden-17	28	Page 109	It is stated that disused sealed sources from small producers are stored in the Central Interim Storage for Radioactive Waste in Brinje. Does this mean that all disused sealed sources are meant to be stored in Brinje?	According to regulation a holder of a disused sealed source has to transfer it to ARAO three months after decision that the source is a spent source. Until transfer to ARAO it is handled under license for use of a source. Although it is not a legal requirement, the holder can also return the source to a producer. ARAO then is liable for sealed sources in CISRAW.
61.	Sweden-18	28	Page 109	What are the plans for final disposal of disused sealed sources in Slovenia?	When sealed sources are accepted into storage the liabilities are transferred to the ARAO, which becomes responsible for further management of spent sealed source. Until now the strategy for final disposal of disused sealed sources has not been defined. Sealed sources that will meet waste acceptance criteria of the LILW repository will be disposed there. The remaining sealed sources will be disposed together with high level waste.

	Country	JC Art. No.	Reference	Question/Comment	Answer
62.	Sweden-19	28	Page 109	How is the Council Directive on High Activity Sealed Sources (2003/122/Euratom) implemented in the legislative and regulatory system? It would be of particular interest to be informed how art. 3 para 2 (b) has been implemented (financial security or any other equivalent means) and to what extent implementation of the requirements in art 9 para 3 and 4 has been made (systems aimed at detecting orphan sources and campaigns to recover orphan sources left behind from past activities)?	<p>The majority of provisions of the Council HASS Directive were actually empowered in the existing regulation. Some provisions that have not been implemented yet were empowered in a new Regulation on use of radiation sources and practices involving radiation and through amendments of the Decree on practices involving radiation. Article 3 paragraph 3(b) of HASS Directive is implemented in Article 4 of the Regulation on use of radiation sources and practices involving radiation where paragraph 7 stipulates that in case of HASS financial guarantees for management with sources after the termination of its use have to be enclosed in the application for a license. Article 9 paragraphs 3 and 4 of HASS Directive are implemented through installation of portal detectors at major scrap yards and smelters. In addition, the custom and police officers are equipped with handheld detectors. Due to good registry of sources and institutional control there was no need to convey a general orphan source recovery programme. However, one campaign was performed at the research institute in Ljubljana, during which a number of historical sources that were not in use were transferred to CISF.</p> <p>Due to bad experiences in the past with the sources in shipments of scrap metal from the eastern countries to the EU a new decree prescribing radiation control of all scrap metal shipments in Slovenia is drafted and will be adopted in 2006. All importers of scrap metal will be requested to assure radiation measurements of every shipment before it is released for free use inside the country.</p>

	Country	JC Art. No.	Reference	Question/Comment	Answer
63.	Sweden-20	24	Page 63	<p>It says in the report that “monitoring of radioactivity in the environment is performed in accordance with the Regulations Z-1 and Z-2 (1986).” Perhaps Slovenia could provide some more information on what the monitoring programme includes</p>	<p>The environmental radioactivity monitoring programme covers all important radionuclide pathways including: sampling and measurements of the river water samples (gamma emitters, ^{89/90}Sr and ³H), sediments and biota (gamma emitters, ^{89/90}Sr), underground and drinking water (gamma emitters, ^{89/90}Sr, ³H), precipitation (gamma emitters, ^{89/90}Sr, ³H), air (aerosols: gamma emitters, ^{89/90}Sr; iodine in gaseous and particulate forms), soil (gamma emitters), external radiation (dose with TLD and dose-rate with automatic measuring stations), food chain: milk (gamma emitters, ¹³¹I, ^{89/90}Sr) and other food of animal origin and vegetable (gamma emitters and ^{89/90}Sr). The region of sampling extends up to 10 km from the NPP.</p> <p>The programme defines a minimum of sampling locations and sampling frequency, kind of samples, frequency of analyses, annual number of sample analyses. A part of programme consists of periodic measurements needed for emergency preparedness (in-situ gamma spectrometry, dry deposition, iodine in air, etc. sampling and measurements performed by field laboratory in a mobile unit).</p> <p>Off-site monitoring is performed by independent technical support organizations approved by the competent authority.</p>

	Country	JC Art. No.	Reference	Question/Comment	Answer
64.	Sweden-21	26	Page 79	It would be interesting to get Slovenia's view on decommissioning strategy for nuclear facilities – immediate dismantling or dismantling after allowing for some time of decay of radioactivity	<p>In preparation of the decommissioning plan for the Krško NPP the Strategy of Immediate Dismantling (SID) is considered as a basic scenario. Based on the above-mentioned seven feasible decommissioning options were evaluated. Three of them comprise a local repository of spent fuel and four of them are assuming permanent SF export.</p> <ul style="list-style-type: none"> • Original SID-96: Scenario SID-96 could be adapted to new boundary conditions without variations in technology and without changes in sequence of dismantling activities (SID-96 with disposal). The same sequence of dismantling activities but with permanent export of spent fuel is a basis for the symmetrical scenario (SID-96 with export). • SID-15 with export: Since it is impossible to dispose of spent fuel immediately after the NPP is shut down, scenario of prompt decommissioning could not be constructed as simple shortening of the original SID-96, except in the case of the permanent export of spent fuel (SID-15 with export). For this scenario, and the rest of scenarios considered here (apart from the two aforementioned SID-96 scenarios), 80 years of on-site storage for the main components and reactor vessel is concealed and technological modifications are introduced to enable their dismantling, cutting and disposal prior to the rest of decommissioning operations. • SID-15WS with disposal: To achieve fast decommissioning without export of spent fuel, original SID scenario should be modified enabling dismantling while spent fuel is still cooling down in the pool. If wet storage is introduced, the scenario could be completed in less than 15 years even if disposal of spent fuel starts in 2031 (SID-15WS with disposal). Spent fuel could be kept in wet storage for the same number of years prior to export in symmetrical scenario (SID-15WS with export). • SID-30 with disposal and SID-30 with export: If it is necessary to store spent fuel for more than 10 years (as is the case with SID-15WS scenarios) dry storage is indicated as a better solution since it is cheaper for longer periods than wet storage. Corresponding scenarios lasting approximately 30 years (SID-30 with disposal and SID-30 with export) were derived from technological operations of the original SID in a similar way as it was done for SID-15 with export. The location for dry storage was not defined in this Program: it could be on the NPP
				30	<p>Krško site or elsewhere.</p> <p>A set of seven presented scenarios contains all feasible decommissioning options where boundary conditions are considered.</p>

	Country	JC Art. No.	Reference	Question/Comment	Answer
65.	Sweden-22	25	Page 73	Does the Slovenian emergency plan include a strategy on how to inform the public and media in an adequate and coherent way in case of an emergency?	<p>As stated in the Slovenian National Report the content of the National Emergency Plan was described in the First National Report, the 2004 revision of the Plan did not change its content with regard to public and media information.</p> <p>The Plan contains provisions on how to alert and inform the public and the media in general terms. In the area of public and media information, the Governmental Information Office is responsible for establishment of press centres, organisation of press conferences and preparing of joint press releases. In the Plan local authorities (municipalities) are responsible for notification of affected population. The provisions of local and plant emergency plans as well as emergency plans of all other "stakeholders" which have a certain role in case of emergencies (as for example the SNSA) also provide specific provisions on informing the public and the media and that all those provisions together ensure an adequate, coherent and harmonized approach.</p>

	Country	JC Art. No.	Reference	Question/Comment	Answer
66.	United Kingdom-1	19	Section E, page 40	<p>It is noted that it is planned that the Zirovski Uranium mine will be released for reuse by the public after decommissioning is complete. In describing the regulatory framework no mention is made about the regulatory and legislative process of final release from the licensing regime. In the section on decommissioning plans on page 99 the report defines decommissioning as those measures that lead to a cessation of control over a facility. What legal process will be used to release a site from regulatory control after the completion of decommissioning?</p> <p>What safety and environmental criteria will be used to determine whether decommissioning has ended and the site operator can be relieved of its responsibility for the safety of the facility?</p>	<p>At the mining and milling site of Žirovski vrh uranium mine there were several mine waste piles. For a remedial purpose a Safety Analysis Report (SAR) was produced by operator and approved by SNSA. According to SAR, all minor mine waste piles were moved to the main waste pile Jazbec. Those sites are decontaminated and shall be returned to primary use by license that shall be issued by SNSA. After remediation the Jazbec mine waste pile shall remain a property of the government. Institutional monitoring shall be performed. The government may let the site for use with limitations. Similarly the remediation of the Boršt tailings pile shall be performed.</p> <p>The safety criteria are approved through SAR which is prepared in compliance with the safety criteria prescribed by Health Inspectorate of the Republic of Slovenia in April 1996.</p>

	Country	JC Art. No.	Reference	Question/Comment	Answer
67.	United Kingdom-2	19	Section E, page 40	<p>It is not made clear what mechanisms are in place for generating, keeping and storing records to ensure that all information, for example on design, modification and operation of facilities, waste inventories and possible physical and chemical conditions of waste is kept for the long periods of time needed. It is noted that mention is made of the records keeping facility in the Engineering support Department at Krsko NPP, but no comment is made as to what records are kept and the Regulator's powers for ensuring appropriate record are kept.</p> <p>What powers does the Regulatory body have to ensure that the operating organisations of all nuclear facilities, including those concerned with waste and spent fuel management and storage, keep appropriate records?</p> <p>How does the Regulatory body oversee the keeping of records for an appropriate time so that they are retrievable when needed?</p>	<p>According to the 2002 Act the registers of radiation practices, radiation sources, and radiation and nuclear facilities shall be maintained as public registers by SNSA (and SRPA).</p> <p>SNSA shall maintain central records of radioactive waste and spent fuel occurring on the territory of Slovenia.</p> <p>According to the regulation the SNSA shall maintain central registry of radioactive waste packages. Information in the registry shall be sufficient to identify category and type of waste, inventory of main radionuclides, and the volume and weight of waste. However, the waste owner must have his own registry of waste packages providing all information that is needed for subsequent steps in RAW management. At nuclear facilities the operator record keeping system is part of SAR and is as such subject to law enforcement.</p> <p>To ensure keeping of appropriate records some penal provisions are in place for violations.</p>

	Country	JC Art. No.	Reference	Question/Comment	Answer
68.	United Kingdom-3	19	Section E, page 43	In section (2iv) the statement is made that an inspector may “issue decisions and orders within the framework of administrative proceedings”, and “order measures for radiation protection and measures for radiation and nuclear safety”. This gives the impression that Inspectors can order licensees to take actions in the interests of safety. To what extent does this conflict with the requirements of Article 21 that the prime responsibility for safety lies with the licensee?	This does not conflict with the requirements of Article 21 that the prime responsibility for safety lies with the licensee. The purpose of decisions that are issued by an inspector is only that the licensee fulfils all the legal requirements regarding the safety if they are not fulfilled by the licensee when an inspection is performed.
69.	United Kingdom-4	4	Sections G and H, page 82	A statement is made on waste minimalisation (referring to Article 93 of the 2002 Act), that the person responsible for the occurrence of radioactive waste and spent fuel shall ensure that the radioactive substances occur in the smallest possible quantities. What powers does the Regulatory Body have to enforce this requirement? What criteria does it use in determining that this requirement is met?	The provisions of Article 93 paragraph 2 are stipulating one of general principles of radioactive waste management. In practice it is implemented in a licensing process of nuclear facilities through approval of SAR. The provisions of licenses are legally binding and enforceable, as a criterion the international practices are applied.

	Country	JC Art. No.	Reference	Question/Comment	Answer
70.	United Kingdom-5	4	Sections G and H, page 82	<p>The interdependencies among the different steps in spent fuel management and radioactive waste is discussed and it is stated that in Article 98 of the 2002 Act, and in the draft regulation on radioactive waste management (that is pending for approval) there is a requirement that the producers of radioactive waste and spent fuel have to consider the interdependencies among different steps of their management in the Safety Analysis Report.</p> <p>It is noted that in the waste management system a number of different organisations can be involved. They include the users and the various regulators (primarily the SNSA and SRPA, but it can also include a significant number of others (as listed in page 47).</p> <p>In the development and planning the management of waste, how are the steps in the activity treated as part of a whole entity?</p> <p>As the regulator with overall responsibility, how does the SNSA ensure that the various bodies involved operate to standards and criteria that are compatible with those of the other bodies?</p> <p>How does SNSA ensure that there are no requirements for</p>	<p>The provisions addressing interdependencies among different steps in RW and SF management are introduced in legislation primarily because of the fear that product of certain waste treatment and pre-treatment will not meet the acceptance criteria for storage and disposal. The basic purpose is to assign to waste generators responsibility to produce and to treat waste in a manner that will meet the final solution for waste disposal.</p> <p>The waste producer has to obtain the acceptance criteria for disposal at ARAO who is responsible for interim RAW storage and disposal.</p> <p>SNSA is solely responsible for matters related to regulatory aspect of RAW management in Slovenia. It licenses treatment of radioactive waste at nuclear facilities through approval of SAR and though license for use of sources. Thus the SNSA actions are complementary to regulatory requirements in the area of environment protection, civil engineering and to a respective licensing process performed by other regulatory authorities.</p>
				<p>environmental protection that will strongly conflict with requirements for safety, or that optimising one of the different steps of the overall</p>	

	Country	JC Art. No.	Reference	Question/Comment	Answer
71.	United Kingdom-6	16	Page 99	<p>Articles 9 and 16 require that “decommissioning plans ... are prepared and updated, as necessary, using information obtained during the operating lifetime of that facility, and are reviewed by the regulatory body”. On page 80 the report states that for Josef Stefan Institute and the Brinje Storage facility, no plans for decommissioning have yet been adopted.</p> <p>Has the requirement for producing, updating and reviewing decommissioning plans for these facilities been met?</p>	<p>The Resolution on the National Programme for Radioactive Waste and Spent Fuel Management was adopted by the Slovenian Parliament in February 2006. In this document the following policy was adopted:</p> <ul style="list-style-type: none"> • The decision of life time of the TRIGA Mark II Research Reactor shall be adopted until 2007 taking into account the offer of the USA regarding the return of all spent fuel to the USA. All LILW from the decommissioning of the research reactor will be deposited in LILW repository. Some preliminary studies indicate that the decommissioning of TRIGA MARK II reactor is not considered as a big safety and radioactive waste management issue. Technical concepts of the deconstruction, waste conditioning and decommissioning follow the German practice of the reactors of the same type (Neuherberg TRIGA reactor). The cost coverage plan will be submitted to the Government together with the decommissioning plan. • The operation of the Central Interim Storage for Radioactive Waste in Brinje is foreseen at least until the beginning of the operation of LILW repository. After the construction of the LILW repository a new storage for long-lived institutional waste will be built next to the repository. CISF will than be decontaminated and used for other purposes. The costs associated with decontamination of CISF shall be covered from the budget of ARAO. The disposal solution for long-lived institutional waste is planned to be provided together with spent fuel, according to the present plans after 2065.

	Country	JC Art. No.	Reference	Question/Comment	Answer
72.	USA-1	12	Page 86	<p>The Central Interim Storage (CIS) facility in Brinje is being refurbished and re-licensed. In the First National Report, Slovenia stated that re-licensing was expected in 2003. The Second National Report (SNR) says re-licensing is now expected in 2005. Did this occur in 2005? Were there any safety issues that arose because of the two year delay in the availability of the CIS? The SNR states that during refurbishment, repacking and rearrangement of the inventory took place. What measures were implemented to maintain worker exposures “as low as is reasonably achievable,” and what level of occupational exposures were experienced?</p>	<p>The delay in re-licensing was mainly due to the delay in reconstruction and refurbishment of the Central Interim Storage. Due to the delay, no special safety issues appeared. The licence for a two years trial operation was granted in 2005. During refurbishment some rearrangement of the inventory was necessary as the reconstruction took place while all radioactive waste remained in the storage. The re-arrangement was performed in a way to take the advantage of self-shielding of waste. The most active sources were placed in the back of the storage and the less active in the front, so the dose rate on the surfaces of the packages decreased to a very low level, i.e. 20-50 $\mu\text{Sv/h}$. Normal exposures of individual workers in CIS are between 0.2-0.5 mSv/year, during the reconstruction project these levels were raised up to 1-1.5 mSv/year.</p>

	Country	JC Art. No.	Reference	Question/Comment	Answer
73.	USA-2	12	Page 87	The Josef Stefan Institute Reactor Centre is being refurbished to be a central facility for classifying and processing radioactive waste from small producers. This was to be completed in 2005. Please provide an update on the status of this work.	The question refers to the hot laboratories ('hot cell') that are the part of J. Stefan Institute at the location of the Reactor Centre. The laboratory has been refurbished partly within the PHARE program, providing the equipment for classification and pre-processing of radioactive waste from small users. The December 2005 status of the refurbishment project is as follows: technical renovation of the building in responsibility of the J. Stefan Institute has been partly accomplished (installations, smaller construction works). The equipment under the PHARE program has been delivered and 90% installed and tested (manipulator, compactor, radiological equipment, fork lift). The time schedule is in accordance with the PHARE contract. The 'hot cell' is conditionally operable and has been temporarily licensed by SNSA and used for waste characterization by the national Agency for Radwaste management in 2005. The finalization of the entire refurbishment project depends on funding. Additional long-term funds are required for: accomplishment of technical renovation of the building, updating of the safety analysis report and for covering operational costs (2-3 workers, maintenance). Additional funds will be provided by the Government according to the plan that will be submitted to the Government in 2006.
74.	USA-3	24	Page 63	Discharges from nuclear medicine departments are not regularly monitored (page 63). The Ljubljana University releases effluents directly to the sewer after decay storage. Please describe regulatory limits for storage and discharge.	Limits for discharges of radioactive effluents including those from nuclear medicine departments are regulated by the Decree on practices involving radiation (Official Gazette RS, 48/2004) and the Decree on dose limits, radioactive contamination and intervention levels (Official Gazette RS, 49/2004). It is required that liquid radioactive effluents concentrations shall be below clearance levels (for I-131 1 MBq/m ³) and concentration in surface waters below derived concentrations (for I-131 6,1 kBq/m ³). Volume of storage tanks and time of decay shall be designed on the basis of these limits, number of patients in hospitals, administered activities and additional dilutions if they are planned. Monitoring of surface and subsurface waters is required by the Regulation on places, methods and frequencies of monitoring of contamination with radioactive materials (Official Gazette SFRY, No. 40/1986).

	Country	JC Art. No.	Reference	Question/Comment	Answer
75.	USA-4	32	Page 20	All waste is now being stored in Slovenia. Has there been any consideration of the Jazbec mine for low-level waste disposal since it is already being backfilled with mine waste?	The uranium mine has never been seriously considered as low- and intermediate level waste disposal in Slovenia, due to the fact that the site is not best suited as a repository of LILW.
76.	USA-5	32	Page 16	Slovenia envisions direct deep geologic disposal of spent fuel. In preparing evaluations, the Swedish concept was used as a guideline. Please explain how the Swedish concept applies to Slovenia. Also, please describe any public participation in evaluating potential sites.	<p>Slovenia has no capacity to develop the disposal concept from scratch, therefore the Swedish KBS-3 concept of disposal in hard rock and its cost analysis method, developed by Swedish Spent Fuel Management Agency SKB, has been taken as a reference, as a model concept. The decision is based on the well developed Swedish waste disposal concept and their highly advanced cost assessment methodology with well defined cost elements.</p> <p>However, the applied model disposal concept was developed for much larger SF quantities and a much longer operating period than in our case. Many adjustments were required before it fitted our needs, and some limitations were also introduced. Wherever possible, further optimization was made in developing our concept.</p> <p>At present our reference scenario is developed for generic site in hard rock. According to the time schedule its operation is planned only after 2065. Due to relatively distant disposal plans the site selection procedure is not yet defined. From today's perspective it is most likely that the site selection process will be similar as it has been conducted at present for the LILW repository.</p>

	Country	JC Art. No.	Reference	Question/Comment	Answer
77.	USA-6	32	Page 19	Slovenia has adopted the “polluter pays” principle for waste producers. Please elaborate on how this is implemented in Slovenia, e.g, how charges are determined.	<p>In Slovenia, a "polluter-pays" principle is in use. All small users have to pay a fee to the Agency for Radioactive Waste Management (ARAO) - which operates the Central LILW Storage at Brinje.</p> <p>In 2000, a price list was published in the Off. Gazette. The fee is calculated from three components: Fee = costs of storage + costs of treatment and preparation + costs of transport Last two parts are determined, based on actual costs. Costs of storage are based on the equation $E \cdot f$, where E means basic costs for a volume unit and f is a factor of 0.5, 1 or 3 (first one for radionuclides with very short half-life of not more than 0.5 years and last one for those with half-life of more than 30 years).</p> <p>For instance the costs of storage of: - one Co-60 sealed source of 4 GBq would be: 1 piece * 78,000 SIT/piece * 1,3 = 101,400 SIT (app. 423 €). - one 4 GBq Am-241 source 78,000 SIT/piece * 3 * 1,3 = 304,200 SIT (app.1267 €)</p> <p>It should be noted that after transfer of waste to ARAO, the originator has no further financial liabilities.</p>
78.	USA-7	22	Page 51	There is a significant focus on nuclear power plant operations with very little discussion regarding the waste disposal management staffing and competencies. How does the SNSA oversee the waste disposal management staffing and competencies?	<p>The waste disposal management staffing and competencies in the nuclear power plant is based on the Regulation on conditions that have to be fulfilled by workers performing safety significant jobs at nuclear or radiation facilities (Off. Gazette RS, No. 74/2005). It prescribes educational qualification, the number of years of experience at relevant positions in the NPP, conditions regarding the psychophysical condition of the staff, program of technical training and system of verification of prescribed conditions.</p> <p>SNSA also has the legal right to oversee the training of all staff members in the NPP, whose work can influence nuclear safety.</p>