Project Fiche – 2008 IPA Horizontal Programme on Nuclear Safety and Radiation Protection

1. Basic information

1.1 CRIS Number:	2008/020-350
1.2 Title:	Radioactivity survey
1.3 ELARG Statistical code:	03.64 - Nuclear safety
1.4 Location:	Vinča Institute in Serbia

Implementing arrangements:

1.5 Contracting Authority:

The European Community represented by the Commission of the European Communities for and on behalf of Serbia in joint management with the International Atomic Energy Agency (IAEA).

1.6 Implementing Agency:

The International Atomic Energy Agency (IAEA), Technical Co-operation Department

1.7 Beneficiary:

The Republic of Serbia
Institute of Nuclear Sciences
11001, Belgrade, P.O Box 522
Dr. Jovan Nedeljkovic, Director General

Financing:

1.8 Overall cost (VAT excluded): EUR 617 000 which includes extensive reliance on EU technical expertise and companies to assist in the planned activities

1.9 EU contribution: EUR 588 000

1.10 Final date for contracting: 2 years following the date of conclusion of the Financing Agreement

1.11 Final date for execution of contracts: 2 years following the end date for contracting

1.12 Final date for disbursements: 3 years following the end date for contracting

2. Overall Objective and Project Purpose

2.1 Overall Objective:

To eliminate environmental hazards and improve functionality, health and safety of previously contaminated areas with radionuclides at the Vinča Institute in line with best EU practices.

2.2 Project purpose:

To contribute to the implementation of the Vinča Nuclear Institute Decommissioning programme (VIND) that is coordinated and partly supported by the IAEA through the radioactivity survey of the Vinča site and preparation of future rehabilitation activities.

2.3 Link with AP/NPAA/EP/SAA

Article 110 of the draft SAA with the Republic of Serbia explicitly mentions nuclear safety as one of the cooperation topics.

The Serbia 2007 progress report mentions that "little progress has been made in the area of nuclear safety and radiation protection. The dismantling operations and removal of spent fuel from the Vinča research reactor are in progress, but faces numerous difficulties. However Serbia has not yet acceded to the Convention on Nuclear Safety and to the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management".

2.4 Link with MIPD

The MIPD action entitled "Nuclear Safety and Radiation Protection" mentions that there are "specific problems posed by the management of radioactive waste and spent nuclear fuel in Serbia". In this context, the MIPD intends to support "further alignment of the management practices of radioactive materials with EU best practices".

2.5 Link with National/Sectoral Investment Plan

- Decision of the Serbian government to decommission the RA research reactor located at the Vinča Institute and approval of the VIND programme (2002 and 2004);
- Activity framework in the field of nuclear safety and radiation protection for the period 2008-2010 decided by the government of Serbia.

3. Description of project

3.1 Background and justification:

Operation of the RA nuclear research reactor at Vinča until 1983 has generated spent nuclear fuel and many types of radioactive waste that need to be properly managed. This is the main aim of the VIND programme that was established in 2002 based on a decision of the Serbian government to decommission the Vinča RA research reactor. The VIND programme comprises a number of successive phases of implementation that are covering the period 2006-2013.

Management of spent nuclear fuel is considered as the most urgent problem to be solved and therefore the three first phases addressed the characterisation, repackaging, transport to the Russian Federation and reprocessing operations. It is important to note that phase 2 (transport of spent nuclear fuel to the Russian Federation) will be funded by the 2007 IPA horizontal programme on nuclear safety and radiation protection.

Management of radioactive waste to be generated during the decommissioning and dismantling of the RA research reactor constitutes also an important radiological issue and phases 4 and 5 of the VIND programme are devoted to the transformation of an old building into a waste treatment and conditioning facility. Funding of the equipment to be installed into this facility is also part of the 2007 IPA horizontal programme on nuclear safety and radiation protection.

However proper management of radioactive waste stored at the Vinča Institute requires additional phases to be implemented over the period 2009-2011, i.e.

Phase 6: Conditioning, packaging and storage of disused sealed radioactive sources;

Phase 7: Conditioning and processing of improperly stored and unconditioned radioactive waste;

Phase 8: Decommissioning of the old storage facilities for sources and radioactive waste;

Phase 9: Dismantling of the old piping system and tanks containing radioactive liquid waste, and

Phase 10: Radioactivity survey of the Vinča site.

Several donor countries (e.g. the USA, Norway) have already expressed their intention to contribute to the funding of these activities as well as the IAEA. However the funds that are expected to be collected are still far from the needs already identified.

Therefore the aim of this project is to contribute to the VIND programme via the support to Phase 10: "Radioactivity survey of the Vinča site".

In addition to the degraded storage facilities for radioactive waste located at Vinča, there are several minor, completely or partly abandoned facilities, previously used for certain research activities in the nuclear field, such as building for Van der Graaf accelerator, material research facility etc. that can possess certain radiological risks, possible contain orphan sources and a lot of contaminated surfaces or equipment. There is also a need for decontamination of a former open space used as a radioactive waste repository in the Institute.

The project is supported by technical and safety expertise of IAEA under its Technical Cooperation programme. Being part of VIND programme, the project is also supported by the Ministry of Science of Government of Republic of Serbia providing continuity of funding.

3.2 Assessment of project impact, catalytic effect, sustainability and cross border impact

The project will reduce the radiological risks related to past nuclear activities performed at Vinča.

It has a catalytic effect in the sense that providing funding to phase 10 of the VIND programme will enable the whole sequence of operations leading to a safer and more secure Vinča nuclear site to become effective.

3.3 Results and measurable indicators:

The final result of the project is that a comprehensive site-wide radiological characterisation has been performed, and all existing and potential nuclear and radioactive hazards and sources are identified and properly documented. It is envisioned that the results of the project will be used to prioritise subsequent decontamination, decommissioning, recovery and remediation projects which can be addressed on a priority basis by the appropriate government agency either independently or with additional external assistance. This shall include the following individual performance indicators:

a) A conceptual project approach and implementation plan is completed and documented;

b) A comprehensive historical study of radiological activities is performed and documented;

c) A comprehensive site characterisation is performed and accepted by the appropriate regulatory oversight agency;

d) The surrounding environs have been evaluated to assess the potential migration of radioactive materials;

e) All radioactive samples are analysed and documented for inclusion in the final report, with appropriate quantification and qualification of results;

f) All radioactive sealed sources are identified for inclusion in the Source Conditioning Facility database, regardless of whether in use, stored or conditioned;

g) All radioactive waste are identified and are under the positive control of the responsible waste management organisation;

h) A final site-wide strategy for subsequent or future decontamination and remediation has been developed and accepted by the appropriate regulatory oversight agency;

i) A final site-wide radiological characterisation report was submitted to the various stakeholders, including the EU, with appropriate recommendations and suggested priorities for further action.

3.4 Activities:

a. Assistance in planning to achieve project objectives;

b. Assistance in performing historical study of radiological activities, including inventories, accidents incidents, spillage, underground contaminants, discharges, include interviews with retirees;

c. Assistance in preparation of graded assessment plan (approach and level of details) including:,

- Known contaminated areas;
- Known clean areas;
- Site boundary;
- Environmental analysis of areas outside site boundary;
- Identifying assets and labour resources required for radiological characterisation;

d. Assistance and implementation in upgrading site boundary radiological monitoring programme;

e. Assistance in preparation of sample analysis plan, including analytical specifications and sample management;

f. Assistance in establishing action levels (e.g. implementation of safety and security stabilisation actions), based on results of radiological characterisation, including sample analyses;

g. Assistance in establishing approaches to securing contaminated areas, to mitigate cross contamination or migration;

h. Assistance in establishing prioritisation plan for implementing corrective action, decommissioning or remediation;

i. Assistance in identifying (segregating) nuclear and radiological liabilities for areas that can be returned to industrial use;

j. Assistance in developing safety plan for performing site wide radiological characterisation, including radiological and occupational safety of assessment team;

k. Assistance in identifying assets and labour resources required for post-characterisation recovery/remediation, including cost estimate for implementation for each recovery/remediation project on a priority basis as consistent with the available funding;

l. Preparation of output report and recommendations (to Ministries of Science and environment, Vinča, EU, and other stakeholders).

m. Provide additional experts as needed for progress assessment, on site assistance, problem resolution, verification of achievement of performance indicators.

All these activities will be supported through a European Community Contribution Agreement with the IAEA (see Annex V).

3.5 Conditionality and sequencing:

The implementation of this project requires a functioning regulatory body in charge of nuclear issues in Serbia since part of the project will consist of drafting a comprehensive site characterisation plan to be reviewed and approved by this body.

3.6 Linked activities:

All the other phases of the VIND programme.

3.7 Lessons learned

Since 2004 the implementation of the VIND programme under the coordination of the IAEA is proceeding according to the time schedule. However, the latest developments of this programme showed that supplementary technical expertise would be required for the monitoring taking into account the increasing number of projets being implemented and their high technical complexity.

4. Indicative Budget (amounts in €)

Activities	TOTAL COST	SOURCES OF FUNDING										
		EU CONTRIBUTION				NATIONAL PUBLIC CONTRIBUTION					PRIVATE	
		Total	% *	IB	INV	Total	% *	Central	Regional	IFIs	Total	% *
Activity 1												
contract 1	595 000	566 000	95		*566 000*	29 000	5				0	0
Contingencies (about 5%)	22 000	22 000	100		*22 000*	0	0				0	0
TOTAL	**617 000**	**588 000**	95		**588 000**	**29 000**	5				**0**	0

Amounts net of VAT

* expressed in % of the Total Cost

Additional Funding from Government, IAEA and Other Contributors

As discussed in preceding paragraphs, this project is intended to support the Vinca Institute Nuclear Decommissioning (VIND) programme, which is Serbia's priority nuclear safety and radiation protection support programme. For more than 40 years, Serbia was the central collection centre for all disused sealed sources and radioactive waste from the former Yugoslavia, including countries which are now EU Member States. These sealed sources and wastes are found in rooms and degraded storage facilities located all over Vinca. Only a few of the thousands of disused sealed sources and the thousands of waste containers have ever been conditioned, and the conditioning methods for those few items does not meet current international standards. Construction of proper waste processing facilities, secure storage facilities, and source conditioning facility, as well as conditioning and storage of the resultant wastes and sources, is estimated to cost more than EUR 8 million**.**

VIND is also intended to repatriate more than 8000 highly enriched and low enriched spent fuel elements to Russia from the RA Research Reactor. The total cost of the repackaging, transport, spent fuel reprocessing, and disposition of the resultant waste will exceed EUR 25 million.

Finally, decommissioning of the RA Research Reactor and degraded support facilities, including site-wide radiological characterization, remediation or resolution of identified sources of radiation and contamination, and upgrading the capabilities of the radiation protection programme, is estimated to cost an additional EUR 25 million or more.

The VIND programme has been in progress since 2004 and has received more than EUR 16 million in contributions through 2008 from sources other than the EC; this includes nearly EUR 9 million in support from the Serbian Ministry of Science. An additional EUR 14 million is currently approved for 2009-11, including EUR 10 million from the Serbian Ministry of Science. The EC has committed to a EUR 5.46 million through a 2007 Contribution Agreement.

A summary of the VIND funding approvals is included in the following table. It should be noted that funding for decommissioning activities, sealed sources, and waste management decline sharply in 2009-11, as the government, IAEA, and other contributors are shifting their financial resources toward spent fuel repatriation. However, it is still anticipated that the Ministry of Science will contribute more than EUR 1 million annually to waste management and decommissioning activities, mostly in terms of local labour resources.

Existing VIND Funding Approvals

Spent Fuel Repatriation Project (€)/ Phases 1, 2 and 3 of the programme			
	2004-08 Funding	2009-11 Funding	**Total**
European Commission	885 000	3 545 000	**4 430 000**[1]
IAEA	1 910 152	526 667	**2 436 819**
Nuclear Threat Initiative (NGO)	2 578 820	-	**2 578 820**
USA *	550 000	2 666 667	**3 216 667**
Russia *	-	-	**-**
Total	**5 923 972**	**6 738 333**	**12 662 305**

* IAEA is negotiating with USA and Russia additional funding of more than €6M each.

Sealed Sources and Waste Management (including Nuclear Security) (€)/ Phases 4 to 7 of the programme			
	2004-08 Funding	2009-11 Funding	**Total**
European Commission	715 000	315 000	**1 030 000**[2]
IAEA	1 065 724	200 000	**1 265 724**
Nuclear Threat Initiative (NGO)	334 333	-	**334 333**
USA	566 667	300 000	**866 667**
UK	40 000	40 000	**80 000**
Slovenia	30 000	40 000	**70 000**
Total	**2 751 724**	**895 000**	**3 646 724**

Decommissioning (€)/ Phases 8 to 10 of the programme			
	2004-08 Funding	2009-11 Funding	**Total**
European Commission	-	-	**-**
Nuclear Threat Initiative (NGO)	125 671	-	**125 671**
IAEA	314 618	-	**314 618**
USA	6 833	-	**6 833**
Total	**447 122**	**-**	**447 122**

Serbia Funding from Ministry of Science (€)	
	2004-08 Funding
2004	500 000
2005	800 000
2006	1 100 000
2007	2 500 000
2008	4 000 000
2009-2011*	10 200 000
Total	**19 100 000**

* 2.5M/year + estimated 2.7M for fuel repatriation contract

Total Known Funding to VIND, excluding EC Funding (€)			
	2004-08 Funding	2009-11 Funding	**Total**

[1] Under the 2007 IPA horizontal programme on nuclear safety and radiation protection
[2] Idem

Total	**16 422 818**	**13 973 333**	**30 396 151**

5. Indicative Implementation Schedule (periods broken down per quarter)

Contracts	Start of Tendering	Signature of contract	Project Completion
Contract 1	N/A	1Q 2009	4Q 2011

6. Cross cutting issues (where applicable)

6.1 Equal Opportunity

The project will benefit both women and men through improvements in environmental protection and safety. On all activities, both men and women will have equal opportunities to compete for contracts and to work on any related activities.

6.2 Environment

This project will improve radiological conditions within the Vinca site and the surrounding environments by reducing the potential for release of radioactivity via groundwater, airborne activity, or malicious intent. All radioactive materials, sources, etc. will be removed from areas of little control and placed in proper storage, including extensive radiological characterization and conditioning; this will ensure graded levels of security and radiological controls so as to reduce the impact on the environment, workers and the general public.

6.3 Minorities

On all activities, minorities will have equal opportunities to compete for contracts and to work on any related activities.

ANNEXES

1- Log frame in Standard Format

2- Amounts contracted and Disbursed per Quarter over the full duration of Programme

3- Description of Institutional Framework

4- Related laws, regulations and strategic documents:

5 - Details per EU funded contract:

ANNEX 1: Logical framework matrix in standard format

LOGFRAME PLANNING MATRIX FOR Project Fiche	Programme name and number – 2008 IPA Horizontal Programme on Nuclear Safety and Radiation Protection	2008/020-350
Radioactivity survey of the Vinča site	Contracting period expires – 2 years following the date of the conclusion of the Financing Agreement.	Disbursement period expires – 3 years following the end date for contracting
	Total budget including 5% contingencies: EUR 617 000	IPA budget: EUR 588 000

Overall objective	**Objectively verifiable indicators**	**Sources of Verification**	
A comprehensive radioactivity survey and radiological characterization of the Vinca site has been completed, and recommendations have been submitted to stakeholders for future site decommissioning and rehabilitation activities.	A comprehensive site-wide radiological characterisation has been performed, and all existing and potential nuclear and radioactive hazards and sources are identified and properly documented; recommendations provided to the appropriate government agency.	Final site-wide radiological characterization report.	
Project purpose	**Objectively verifiable indicators**	**Sources of Verification**	**Assumptions**
To contribute to the implementation of the Vinča Nuclear Institute Decommissioning project (VIND) that is coordinated and partly supported by the IAEA through the radioactivity survey of the Vinča site and preparation of future rehabilitation activities.	Sample analysis plan completed and implemented. Final report completed with recommendations.	Final report, including sample analysis plan and results.	Sufficient Vinca labour resources available to work alongside contractors for training and support.

Results	Objectively verifiable indicators	Sources of Verification	Assumptions
5.1 A conceptual project approach and implementation plan is completed and documented;	5.1 – Plan completed.	Plan and final report available for review.	Sufficient Vinca labour resources available to work alongside contractors for training and support.
5.2 A comprehensive historical study of radiological activities is performed and documented;			
5.3 A comprehensive site characterisation is performed and accepted by the appropriate regulatory oversight agency;			
5.3 The surrounding environs have been evaluated to assess the potential migration of radioactive materials;			
5.4 All radioactive samples are analysed and documented for inclusion in the final report, with appropriate quantification and qualification of results;			
5.5 All radioactive sealed sources are identified for inclusion in the Source Conditioning Facility database, regardless of whether in use, stored or conditioned;			
5.6 All radioactive waste are identified and are under the positive control of the responsible waste management organisation;			
5.7 A final site-wide strategy for subsequent or future decontamination and remediation has been developed and accepted by the appropriate regulatory oversight agency;	5.7 – Site-wide characterisation complete.		
5.8 A final site-wide radiological characterisation report was submitted to the various stakeholders, including the EU, with appropriate recommendations and suggested priorities for further action.	5.8 – Final report completed.		

Activities	Means	Costs	Assumptions
All the following activities should be contracted through a Contribution Agreement with the International Atomic Energy Agency. At this stage, the number of contracts or sub-contracts identified so far for each beneficiary country is only indicative.			
5.1.1 - Assist in planning to achieve project objectives, including developing MS Project schedule.	5.1.1- Contract for project plan.	5.1.1 = 14,000	
5.1.2 - Assist in performing historical study of radiological activities, including inventories, accidents incidents, spillage, underground contaminants, discharges, include interviews with retirees.	5.1.2 - Contract for historical study.	5.1.2 = 24,000	
5.1.3 - Assist in identifying assets and labour resources required for site-wide radiological characterisation.	5.1.3 - Contract to identify assets & resource requirements.	5.1.3 = 5,000	5.1.3 - Vinca labour available to work alongside contractors.
5.1.4 - Assist in preparation of sample analysis plan, including analytical specifications and sample management.	5.1.4 - Contract to prepare sample analysis plan.	5.1.4 = 14,000	
5.1.5 - Assist in establishing action levels (e.g. implementation of safety and security stabilisation actions), based on results of radiological characterisation, including sample analyses.	5.1.5- Contract to develop action levels.	5.1.5 = 7,000	
5.1.6 - Assist in developing safety plan for performing site-wide radiological characterisation, including radiological and occupational safety of assessment team.	5.1.6 - Contract to develop safety plan for site-wide radiological characterization.	5.1.6 = 7,000	

5.2.1 - Assist with implementation of graded assessment plan (approach and level of details) including: • Identification of known contaminated areas; • Identification of known clean areas; • Radiation survey at site boundary; • Environmental analysis of areas outside site boundary."	5.2.1 - Contract to implement radiological characterization plan.	5.2.1 = 238,000	
5.2.2 - Tender offer for implementation of sample analysis plan, including analytical specifications and sample management.	5.2.2-- Contract to implement sample analysis plan.	5.2.2 = 68,000	
5.2.3 - Assistance in upgrading site boundary radiological monitoring programme.	5.2.3-- Contract to upgrade site boundary radiation monitoring.	5.2.3 = 22,000	
5.2.4 - Assistance in securing contaminated areas to mitigate cross contamination or migration (e.g., fencing, berms, protective cover, etc.).	5.2.4- Contract to secure contaminated areas.	5.2.4 = 34,000	
5.2.5 - Assistance in identifying (segregating) nuclear and radiological liabilities from areas that can be returned to industrial use.	5.2.5-- Contract to identify nuclear & radiological liabilities versus industrial use areas.	5.2.5 = 24,000	5.2.5 – Positive control can be established by government over liabilities.
5.2.6 - Fellowships and training in support of site radiological characterization and sample analysis activities.	5.2.6- Site radiological characterization; 2x24 mos.	5.2.6 = 20,000	5.2.6 - None
5.3.1 - Assist in establishing prioritisation plan for implementing corrective action, decommissioning or remediation.	5.3.1- Contract for developing corrective actions & prioritization plan.	5.3.1 = 14,000	5.3.1 - None
5.3.2 - Assist in identifying assets and labour resources required for post-characterisation recovery/remediation, including cost estimate for implementation for each recovery/remediation project on a priority basis as consistent with the available funding.	5.3.2- Contract to identify assets, resources & cost estimates for corrective actions.	5.3.2 = 31,000	5.3.2 - Vinca labour available to work alongside contractors.
5.3.3 - Assist in preparation of output report and recommendations (to Ministries of Science and environment, Vinca, EU, and other stakeholders).	5.3.3- Contract for developing final report & recommendations.	5.3.3 = 24,000	5.3.3 – Report acceptance by regulatory authority.
5.3.3 - Other expert and staff travel for progress assessment, on site assistance, problem resolution, verification of achievement of performance indicators. (Applies to all activities.)	5.3.3- Expert or staff assistance.	5.3.3 = 20,000	5.3.3 - None

ANNEX 2: amounts (in €) Contracted and disbursed by quarter for the project

Contracted	**Q1 2009**	**Q2 2009**	**Q3 2009**	**Q4 2009**	**Q1 2010**	**Q2 2010**	**Q3 2010**	**Q4 2010**	**Q1 2011**	**Q2 2011**	**Q3 2011**	**Q4 2011**
Contract 1	588 000 Including about 5% contingencies											
Cumulated	**588 000** Including about 4 % contingencies											
Disbursed	**Q1 2009**	**Q2 2009**	**Q3 2009**	**Q4 2009**	**Q1 2010**	**Q2 2010**	**Q3 2010**	**Q4 2010**	**Q1 2011**	**Q2 2011**	**Q3 2011**	**Q4 2011**
Contract 1					62 000	147 000	147 000	139 000	36 000	34 000	18 000	5 000
Cumulated					**62 000**	**209 000**	**356 000**	**495 000**	**531 000**	**565 000**	**583 000**	**588 000**

ANNEX III: Description of Institutional Framework

The responsibilities for the fields related to the peaceful use of nuclear energy (health, the environment, science and technology, nuclear safety and radiation protection, agriculture, transport, etc) rest with several ministries.

The Ministry of Science (MS) is responsible for R&D in the nuclear sector, for nuclear safety, nuclear materials and radioactive waste management in the country. Under the Ministry's competence and financing are the R&D, including the Vinča Institute of Nuclear Sciences, the Institute of Technology of Nuclear and Other Mineral Raw Materials (ITNMS), the Institute of Geology, the Institute of Nuclear Energy Application in Agriculture (INEP) and others. The Ministry ensures that the law on the nuclear safety and the related regulations are carried out and provides the financial resources for the activities. The MS is responsible for bilateral and multilateral international scientific-technical co-operation of Serbia, including the cooperation with the IAEA.

The Ministry for Environmental Protection (MEP) is responsible and leading in radiation protection and monitoring of the environment, emergency planning etc.

In force is the Law on Protection against Ionizing Radiation that was enacted in 1996 (46/96). It establishs measures for the protection against ionising radiation, as well as nuclear safety measures, liability for nuclear damages, supervision and authorization, penalties. Based on the Law on Protection against Ionizing Radiation, there are 11 regulations related to protection against ionizing radiation and for the safety of radiation sources and 5 regulation related on nuclear safety and security.

Currently, there is no effectively independent Serbian regulatory body for radiation and nuclear safety. Law 46/96 does not make provision for the establishment of a regulatory body, although it makes reference to the 'competent Ministry'. Currently, in accordance with the *Law on Ministries,* the Ministry of Science and Ministry of Environmental Protection are identified as the competent Ministries.

A temporary regulatory body called the 'Regulatory Commission on Radiation and Nuclear Safety' has been established by the Ministry of Science to administer the decommissioning of the research reactor at the Vinca Institute, the shipment of spent nuclear fuel to the original Russian supplier, and the treatment of radioactive waste.

The Vinca Institute of Nuclear Sciences was founded in 1948. It is the main institute involved in research and applications in nuclear science (since 1968 multidisciplinary, not only nuclear) and covers a wide range of scientific and engineering fields; 800 employees, out of which 400 is research staff, organized in 16 laboratories (actually departments) from Nuclear Physics, Theoretical Physics and Physics of Condensed Matter, Radiation and Environmental Protection, Nuclear Engineering to Multidisciplinary Research and Engineering which are, to a large extent, independent.

The Radiation and Environmental Protection Laboratory covers: environmental radioactivity control, ionization radiation dosimetry, metrology analyses, radiation protection, radioactive waste arrangement and decontamination, reactor dosimetry, instrumentation servicing and operative dosimetry. The Nuclear Engineering Laboratory covers: reactor physics, safety and control of nuclear reactors, nuclear engineering and radiation protection. Together with the

Reactor Department, it is responsible for two research reactors: RA (shut down for decommissioning) and RB (zero power, requiring upgrading).

The RA research reactor went into operation in 1959 and has been shut down since 1984 due to fuel corrosion problems and for the refurbishment of the reactor control and safety system. Since the date, it stays with a partially loaded core containing 480 fuel slugs with 80% enriched uranium. In addition, 6656 spent fuel slugs with 2% enriched uranium and 884 slugs with 80% enrichment are located in a spent fuel storage pool containing about 200 tons of stagnant water of poor quality to minimize the corrosion process.

ANNEX 4: Related Laws, Regulations and Strategic Documents

Project-Specific Documents

- Decision of the Serbian government to decommission the RA research reactor located at the Vinča Institute and approval of the VIND programme (2002 and 2004)
- Draft of the Serbian new Law on ionising radiation protection and on nuclear safety (2006) and existing Serbian Law on Protection against Ionising Radiation (1996)
- Article 110 of the draft SAA
- Nuclear Safety and Radiation Protection action of the multi-country MIPD programme

International Conventions and Treaties

Serbia is a party to the following instruments under the IAEA's auspices

- Agreement on the Privileges and Immunities of the IAEA
- Vienna Convention on Civil Liability for Nuclear Damage
- Convention on Physical Protection of Nuclear Material
- Convention on Early Notification of a Nuclear Accident
- Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency

Serbia has signed but has not yet ratified the Optional Protocol Concerning the Compulsory Settlement of Disputes to the Vienna Convention on Civil Liability for Nuclear Damage.

As a party to the Treaty on the Non-Proliferation of Nuclear Weapons, Serbia has a Comprehensive Safeguards Agreements with the IAEA for the Application of Safeguards in connection with the Treaty on Non-Proliferation of Nuclear Weapons.

ANNEX 5: Details per EU funded contract

This project together with the projects:

- Conditioning and secure storage of disused sealed radioactive sources;
- Decommissioning of Degraded Waste Storage Hangar No 1;
- Strengthening radiation safety capabilities and infrastructure;
- Characterisation and conditioning of radioactive waste;
- Project Management Unit for EU supported projects;

which are all part of the VIND programme, will be supported through a European Community Contribution Agreement with the IAEA.

Specific contribution agreement will be concluded in accordance with the terms of the Financial and Administrative Framework Agreement (FAFA) between the European Community and the United Nations, signed on 29 April 2003, to which the IAEA has adhered on 17 September 2004.