Project Fiche – 2009 IPA Horizontal Programme on Nuclear Safety and Radiation Protection

1. Basic information

1.1 CRIS Number: 2009/021-640
1.2 Title: Monitoring of EU supported projects at Vinča site
1.3 ELARG Statistical code: 03.64 - Nuclear safety
1.4 Location: Vinča site in Serbia

Implementing arrangements:

1.5 Contracting Authority:
The European Union represented by the European Commission for and on behalf of Serbia.

1.6 Implementing Agency:
Not applicable

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

Financing:

1.8 Overall cost (VAT excluded)\(^1\): EUR 400 000
1.9 EU contribution: EUR 400 000

1.10 Final date for contracting: No later than 31 March 2013
1.11 Final date for execution of contracts: No later than 31 March 2015
1.12 Final date for disbursements: No later than 31 March 2016

2. Overall Objective

2.1 Overall Objective:
To provide direct project management and oversight for EU-funded projects at the Vinča Institute during the project implementation period 2013-2014.

\(^1\) The total cost of the project should be net of VAT and/or other taxes. Should this not be the case, the amount of VAT and the reasons why it should be considered eligible should be clearly indicated
2.2 Project purpose:
To contribute to the implementation of the Vinča Nuclear Institute Nuclear Decommissioning programme (VIND) that is coordinated and partly supported by the IAEA through the provision of dedicated project management support to oversee implementation and manage the schedule for the EU-funded projects programmed under IPA in 2008, 2009 and 2010.

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.

As short term priority for Serbia mentioned in Annex 2 of European Partnership with Serbia, continuation of dismantling of the Vinča research reactor is stated.

The Serbia 2008 progress report mentions that "Plans on management of sealed radioactive sources, environmental monitoring and radiation protection in the context of medical and industrial applications have to be further developed. An appropriate regulatory authority has still to be established. 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 IPA Multi-beneficiary Multi-annual indicative Planning Document (MIPD) 2009-2011, section 2.3.3.11 - Nuclear Safety and Radiation Protection, mentions that “in Serbia […] the operation, refurbishment and dismantling of nuclear research reactors constitute additional sources of radiation risks that would require investment, in particular for the management of spent nuclear fuel and radioactive waste”.

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

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are covering the period 2006-2014. Some of them are partly or wholly funded by the IPA horizontal programme on nuclear safety and radiation, others are funded by the IAEA and other donors, namely:

Phase 1: Removal, characterisation and repackaging of spent nuclear fuel in store at the Vinča Institute (IAEA and other donors funding, IPA funding);

Phase 2: Preparations for and transport of Russian-origin spent nuclear fuel from the Vinča Institute to the Russian Federation (IPA funding);

Phase 3: Reprocessing and disposal of the Russian-origin spent nuclear fuel in the Russian Federation (IAEA and other donors funding);

Phase 4: Design and construction of a waste processing and storage facility at the Vinča Institute for all types of radioactive waste to be generated during decommissioning operations of the RA nuclear research reactor (IAEA and other donors funding);

Phase 5: Provisions of equipment for a waste processing facility at the Vinča Institute (IPA funding);

Phase 6: Conditioning, packaging and storage of disused sealed radioactive sources (IPA partly funding);

Phase 7: Conditioning and processing of improperly stored and unconditioned radioactive waste (IPA funding);

Phase 8: Decommissioning of the old storage facilities for sources and radioactive waste (IPA partly funding);

Phase 9: Dismantling of the old piping system and tanks containing radioactive liquid waste (IPA funding under the 2009 programme), and

Phase 10: Radioactivity survey of the Vinča site (IPA funding).

In addition, there is a horizontal project partly funded by IPA which aims at strengthening radiation safety capabilities and infrastructure at Vinča. In total over the period 2007 to 2009 the IPA programme is therefore fully supporting or contributing to support ten projects at Vinča. The budgetary allocation for this support would amount to approximately EUR 14 million.

It is therefore important to make sure that all these projects will be timely implemented in compliance with the milestones of the whole VIND programme and that the main achievements of the projects are in line with the objectives of the programme.

So far the IAEA plays a central role in the implementation of the VIND programme in collecting funds from various donors, funding a number of activities with their own funds, and providing technical expertise while coordinating the whole programme.

Phases 1 to 3 are considered to be completed since March 2011.

Due to the large number and high technical complexity of the projects implemented at Vinča site, a dedicated monitoring arrangement is necessary to follow and review the implementation of those projects. The Joint Research Centre – Institute for Energy (JRC-IE) in Petten has the necessary competence to perform this monitoring of the IPA-funded projects on behalf of other Commission services (i.e. DG Enlargement and the European
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Commission Delegation to Serbia) so that these services can have a clear understanding of the progress of work at any moment upon their request.

The monitoring of the projects at Vinča site was during the first 3 phases (between 2007-2011) ensured through the establishment of a Project Management Unit (PM Unit) situated at Vinča site. This PM Unit, (under the IPA 2008 horizontal programme on nuclear safety and radiation - EUR 0.5 million) is in a sense the predecessor of this current project on the "Monitoring of EU supported projects at Vinča site". Back then, the PM Unit project was implemented by the implementing agency itself, the IAEA, in parallel to the principle projects at Vinča site.

During these first phases, that mainly concerned the fuel repatriation activities of spent nuclear fuel to the Russian federation, and due to its large complexity (collaboration of various donors; preparation of a enormous administrative mechanism that would ensure secured international transportation of radioactive material), a permanent PM Unit was necessary for the implementation of the project. However, later experience showed that such a permanent monitoring mechanism, run by the implementing agency itself, was no longer the most efficient project monitoring solution (the PM Unit outlived the finalisation of the repatriation project and continued its function monitoring later phases).

The monitoring of the nuclear safety projects at Vinča site in Serbia will be performed centrally by the services provided by the competent Commission directorate, JRC-IE. Monitoring will be implemented through frequent monitoring missions to Vinča site.

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

The proper monitoring of all the IPA-funded projects at Vinča will contribute to their successful implementation and thereby will reduce the radiological risks related to past nuclear activities performed at Vinča.

It has a catalytic effect in the sense that providing assistance in the timely implementation of several key-phases of the VIND programme will enable the whole sequence of operations leading to a safer and more secure Vinča nuclear site, to become effective.

Any accident, e.g. fire in the old storage facilities for radioactive waste, may heavily contaminate the environment and thereby can generate a radiological impact to the members of the public in neighbouring countries.

3.3 Results and measurable indicators:

The final result of the project is the timely implementation of each managed project and activity, with associated quality end products that meet the objectives and performance indicators. This shall include the following individual performance indicators:

a) Each project has been fully planned, and project schedules have been established and implemented for each project and activity;

b) All the backlog of radioactive waste currently in store in "hangars" and underground tanks has been properly managed according to best EU practices.

c) A selection of contaminated sites and facilities at Vinča fully remediated.
3.4 Activities:

a. Monitoring and oversight of the projects dealing with radioactive waste management as described in the relevant project-fiches of the 2008 to 2010 IPA horizontal programmes on nuclear safety and radiation protection in Serbia.

b. Monitoring and oversight of the project to implement the recommendations of the radioactivity survey of the Vinča site.

3.5 Conditionality and sequencing:

Not applicable.

3.6 Linked activities:

All the other phases of the VIND programme, and in particular the 2008 IPA-funded project that allocated EUR 0.5 million for a similar purpose.

3.7 Lessons learned

Since 2010 the implementation of the VIND programme under the coordination of the IAEA is proceeding with difficulties and behind the time schedule. Therefore an independent monitoring is needed, taking into account the increasing number of projects being implemented and their high technical complexity.

4. Indicative Budget (amounts in EUR)

<table>
<thead>
<tr>
<th>ACTIVITIES</th>
<th>TOTAL EXP.RE</th>
<th>IPA EU CONTRIBUTION</th>
<th>NATIONAL CONTRIBUTION</th>
<th>PRIVATE CONTRIBUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>EUR (a)=(b)+(c)+(d)</td>
<td>EUR (b)</td>
<td>% (2)</td>
<td>EUR (c)=(x)+(y)+(z)</td>
</tr>
<tr>
<td>Activity 1</td>
<td>400 000</td>
<td>400 000</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Administrative arrangement with JRC-IE</td>
<td>400 000</td>
<td>400 000</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>TOTAL IB</td>
<td>400 000</td>
<td>400 000</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>TOTAL INV</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>TOTAL PROJECT</td>
<td>400 000</td>
<td>400 000</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

Amounts net of VAT
(1) In the Activity row use "X" to identify whether IB or INV
(2) Expressed in % of the Total Expenditure (column (a))

Additional Funding from Government, IAEA and Other Contributors

As discussed in preceding paragraphs, this project is intended to support the Vinča 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 Vinča. 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 disposal of the resultant waste will exceed EUR 36 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 EUR14 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 Contribution Agreement with IAEA (IPA 2008/149-555).

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 (EUR)/ Phases 1, 2 and 3 of the programme

<table>
<thead>
<tr>
<th></th>
<th>2004-08 Funding</th>
<th>2009-11 Funding</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>European Commission</td>
<td>885 000</td>
<td>3 545 000</td>
<td>4 430 000³</td>
</tr>
<tr>
<td>IAEA</td>
<td>1 910 152</td>
<td>526 667</td>
<td>2 436 819</td>
</tr>
<tr>
<td>Nuclear Threat Initiative (NGO)</td>
<td>2 578 820</td>
<td>-</td>
<td>2 578 820</td>
</tr>
<tr>
<td>USA</td>
<td>550 000</td>
<td>4 000 000</td>
<td>4 550 000</td>
</tr>
<tr>
<td>Czech Republic</td>
<td>250 000</td>
<td>500 000</td>
<td>750 000</td>
</tr>
<tr>
<td>Russia *</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>6 173 972</strong></td>
<td><strong>8 571 667</strong></td>
<td><strong>14 745 639</strong></td>
</tr>
</tbody>
</table>

³ Under the 2007 IPA horizontal programme on nuclear safety and radiation protection

#### Sealed Sources and Waste Management (including Nuclear Security) (EUR)/ Phases 4 to 7 of the programme

<table>
<thead>
<tr>
<th></th>
<th>2004-08 Funding</th>
<th>2009-11 Funding</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>European Commission</td>
<td>715 000</td>
<td>315 000</td>
<td>1 030 000⁴</td>
</tr>
<tr>
<td>IAEA</td>
<td>1 065 724</td>
<td>200 000</td>
<td>1 265 724</td>
</tr>
<tr>
<td>Nuclear Threat Initiative (NGO)</td>
<td>334 333</td>
<td>-</td>
<td>334 333</td>
</tr>
<tr>
<td>USA</td>
<td>566 667</td>
<td>300 000</td>
<td>866 667</td>
</tr>
<tr>
<td>UK</td>
<td>40 000</td>
<td>40 000</td>
<td>80 000</td>
</tr>
<tr>
<td>Slovenia</td>
<td>30 000</td>
<td>40 000</td>
<td>70 000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2 751 724</strong></td>
<td><strong>895 000</strong></td>
<td><strong>3 646 724</strong></td>
</tr>
</tbody>
</table>

⁴ Idem

#### Decommissioning (EUR)/ Phases 8 to 10 of the programme

<table>
<thead>
<tr>
<th></th>
<th>2004-08 Funding</th>
<th>2009-11 Funding</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>European Commission</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Nuclear Threat Initiative (NGO)</td>
<td>125 671</td>
<td>-</td>
<td>125 671</td>
</tr>
<tr>
<td>IAEA</td>
<td>314 618</td>
<td>-</td>
<td>314 618</td>
</tr>
<tr>
<td>USA</td>
<td>6 833</td>
<td>-</td>
<td>6 833</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>447 122</strong></td>
<td>-</td>
<td><strong>447 122</strong></td>
</tr>
</tbody>
</table>

#### Serbia Funding from Ministry of Science (EUR)

<table>
<thead>
<tr>
<th></th>
<th>2004-08 Funding</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>500 000</td>
</tr>
<tr>
<td>2005</td>
<td>800 000</td>
</tr>
<tr>
<td>2006</td>
<td>1 100 000</td>
</tr>
<tr>
<td>2007</td>
<td>2 500 000</td>
</tr>
<tr>
<td>2008</td>
<td>4 000 000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>8 900 000</strong></td>
</tr>
</tbody>
</table>
5. Indicative Implementation Schedule (periods broken down per quarter)

<table>
<thead>
<tr>
<th>Contracts</th>
<th>Start of Tendering</th>
<th>Signature of contract</th>
<th>Project Completion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrative arrangement with JRC-IE</td>
<td>Not applicable</td>
<td>Q1 2013</td>
<td>Q1 2015</td>
</tr>
</tbody>
</table>

6. Cross cutting issues

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 Vinča 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

I- Log frame in Standard Format

II- Amounts (in EUR) contracted and disbursed per quarter over the full duration of the project

III- Description of Institutional Framework

IV- Related laws, regulations and strategic documents

V- Details per EU funded contract
### ANNEX I: Logical framework matrix in standard format

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Monitoring of EU Supported Projects</td>
<td>Contracting period expires – No later than 31 March 2013.</td>
<td>Total budget: EUR 400 000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>IPA budget: EUR 400 000</td>
</tr>
</tbody>
</table>

#### Overall objective

<table>
<thead>
<tr>
<th>Objectively verifiable indicators</th>
<th>Sources of Verification</th>
</tr>
</thead>
<tbody>
<tr>
<td>To provide monitoring for EU funded projects on nuclear safety at Vinča site, programmed under IPA 2008, 2009 and 2010.</td>
<td>Each of the projects approved for funding and implementation have been completed in a timely manner and with quality end products which meet the project-specific objectives and performance indicators.</td>
</tr>
<tr>
<td>Each of the projects approved for funding and implementation have been completed in accordance with their project-specific performance indicators.</td>
<td></td>
</tr>
</tbody>
</table>

#### Project purpose

<table>
<thead>
<tr>
<th>Objectively verifiable indicators</th>
<th>Sources of Verification</th>
<th>Assumptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>To contribute to the implementation of the Vinča Nuclear Institute Nuclear Decommissioning programme (VIND) that is coordinated and partly supported by the IAEA through the provision of regular and frequent monitoring support to the EC services responsible for the implementation. Concerns all EC funded projects on nuclear safety programmed under IPA in 2008, 2009 and 2010</td>
<td>All projects completed in a timely manner and with quality end products consistent with project-specific objectives.</td>
<td>Sufficient Vinča labour resources available to work alongside contractors for training and support.</td>
</tr>
<tr>
<td>Final management oversight and reports on achievements.</td>
<td>Regular and frequent mission reports performed by JRC-IE and sent to DG Enlargement</td>
<td></td>
</tr>
</tbody>
</table>
**Results**

Timely implementation of each managed project and activity, with associated quality end products that meet the objectives.

**Objectively verifiable indicators**

All projects completed in a timely manner and with quality end products consistent with project-specific objectives.

**Sources of Verification**

Project-specific reports and final management oversight and reports on achievements.

**Assumptions**

Sufficient Vinča labour resources available to work alongside contractors for training and support.

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**Activities**

All the following activities should be covered under an Administrative arrangement concluded with JRC-IE

<table>
<thead>
<tr>
<th>Means</th>
<th>Costs</th>
<th>Assumptions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Administrative Arrangement with JRC-IE</td>
<td>EUR 400 000</td>
<td></td>
</tr>
</tbody>
</table>

- Monitoring and oversight of the project for removal or stabilization of the underground liquid waste tanks; and
- Monitoring and oversight of the project to implement the recommendations of the radioactivity survey of the Vinča site
ANNEX II: Amounts (EUR) contracted and disbursed per quarter over the full duration of the project

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Contracted</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contract 1</td>
<td>400 000</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cumulated</td>
<td>400 000</td>
<td>400 000</td>
<td>400 000</td>
<td>400 000</td>
<td>400 000</td>
<td>400 000</td>
<td>400 000</td>
<td>400 000</td>
<td>400 000</td>
</tr>
<tr>
<td>Disbursed</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Contract 1</td>
<td>160 000</td>
<td></td>
<td>80 000</td>
<td>80 000</td>
<td>80 000</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cumulated</td>
<td>160 000</td>
<td>160 000</td>
<td>160 000</td>
<td>160 000</td>
<td>240 000</td>
<td>240 000</td>
<td>320 000</td>
<td>320 000</td>
<td>400 000</td>
</tr>
</tbody>
</table>

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 and Technological Development (MSTD) 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 MSTD is responsible for bilateral and multilateral international scientific-technical cooperation of Serbia, including the cooperation with the IAEA.

The Ministry for Environment and Spatial Planning (MESP) 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 establishes 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 MSTD and MESP are identified as the competent Ministries.

A temporary regulatory body called the ‘Regulatory Commission on Radiation and Nuclear Safety’ has been established by the MSTD to administer the decommissioning of the research reactor at the Vinča Institute, the shipment of spent nuclear fuel to the original Russian supplier, and the treatment of radioactive waste.
The Vinča 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 IV: 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)
- Article 110 of the draft SAA
- Nuclear Safety and Radiation Protection action of the Multi-beneficiary MIPD 2009-2011

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 V: Details per EU funded contract**

This project will be supported through and Administrative arrangement with JRC-IE to be concluded during Q1 2013.