Special Nuclear Safety Project Fiche

1. Basic information

1.1. **CRIS Number:** 632.05.01

1.2. **Title:** Enhancement of Regulatory Capacity for Radiation and Nuclear Safety Infrastructure

1.3. **Sector:** IN & EN

1.4. **Location:** Beneficiary - Latvia, Radiation Safety Centre, Maskavas iela 165, Riga, LV-1019

2. Objectives:

2.1. **Overall objective:**

Enhance the regulatory capacity of national radiation safety and nuclear safety institutions

2.2. **Project purpose:**

To enhance the regulatory capability of Radiation Safety Centre (RDC) by means of:

- ensuring sustainability of occupational exposure control
- enhancing capabilities to combat illicit trafficking of radioactive and nuclear materials by improving of investigation abilities of seized materials in the laboratory of RDC,
- strengthening emergency response capabilities of TSO for regulatory body,
- increasing credibility of regulatory body and improving its work with clients.

2.3. **Accession Partnership and NPAA priority:**

*Accession Partnership*

Energy: Implement the recommendations contained in the Council report “Nuclear Safety in the Context of Enlargement” with due regard to the priorities assigned in the report.

3. Description

3.1. **Background and justification:**

Over the last few years changes have taken place in regulatory infrastructure of Latvia. The “Law on radiation safety and nuclear safety” (October 26, 2000) was passed by Parliament and a new national radiation and nuclear safety regulatory authority, The Radiation Safety Centre was established in 2001.

The Mission of the Radiation Safety Centre is to “provide for safe use of ionising radiation sources and to protect the people and the environment against potential harmful effects simultaneously ensuring to people the maximum benefit from use of radiation sources”.

Primary tasks of the Radiation Safety Centre are defined by the law and are to:

- draft policy proposals for supervision and control of radiation safety and nuclear safety;
- supervise and control radiation safety;
- licence practices with radiation sources;
- coordinate combat of illicit trafficking of radioactive and nuclear materials;
encourage introduction of new technologies to minimise the possible harmful effects;
co-ordinate technical cooperation in the field of radiation safety;
assess implementation of international recommendations;
draft proposals of legal documents to maintain adequate legal framework;
maintain data bases on practices, sources and exposures;
ensure operational 24-hour emergency preparedness system;

The project beneficiary is the national regulatory body (RDC). The Radiation Safety Centre has several divisions and sectors, which have prime responsibility to ensure that all tasks of national radiation and nuclear safety regulatory authority are fulfilled. As the RDC had been established recently there are still some gaps that were identified in the overall capacity of the system and these issues are addressed in the project proposal: RAPA Ltd, the radioactive waste organisation, provides some technical support in certain fields and acts for these activities as the TSO of the RDC for radiological incidents.

1. Sustainability of occupational exposure control

According to the regulations of Euratom on medical exposure control (97/43/Euratom), occupational exposure control (96/29/Euratom) and monitoring of outside workers (90/641/Euratom) Radiation Safety Centre needs to ensure proper medical exposure control, occupational exposure control and proper monitoring of outside workers.

According to the Cabinet of Ministers regulations on dosimetry, the TLD Sector of Laboratory Section of RDC shall provide individual dosimetry services to all radiation workers within the country. Before year 2001 such services were provided by central University hospital in Riga. After establishment of RDC the TLD equipment (TLD reader and relevant software) were inherited by RDC from the previous user.

The TLD equipment, which is in use at the moment, is operational already since 1994, when the IAEA and Swedish Radiation Protection Authority (SSI) donated this RADOS equipment to Latvia. Similar equipment is in use in all neighbouring countries for last 8-10 years. Practical arrangements and intercalibration exercises are done periodically. Therefore only one system (mainly RADOS) is used and will be used in the region.

Initially TLD services were cost-free; beginning in 2000 the University hospital introduced fees which covered operational expenses, but which were insufficient to make any major replacements. The average working life of such equipment is approximately 10 years. This equipment now is close to the technical end of its lifetime. As these are the most expensive parts of the TLD equipment there are no sufficient resources yet available for RDC to replace it by earnings from rendering TLD services. Now, when the equipment is under RDC, the TLD badges are supplied by different donors and also bought by the RDC.

The number of radiation workers under surveillance amounts to 1800 workers. Still the total number of TLD badges is not sufficient to use two badges for the each radiation worker, to ensure that, at any time, there is a sufficient number of TLD badges in stock for emergency workers. Pellets, which normally are inside a TLD badge, can be used separately also for control of patients' exposure. Therefore, additional TLD pellets without badges are needed to expand initial system for patient's exposure control.

2. Capability to combat illicit trafficking of radioactive and nuclear materials

The national system for prevention of illegal trans-boundary movements of radioactive and nuclear materials is based on detection by the State Border Guards, which have already received some support from the USA, Sweden, Finland, Germany and IAEA. In all major border crossing points are installed
the stationary detection equipment, in three see ports are installed also stationary neutron detectors, but rest of control is done using the portable measurement devices.

If the undeclared ionising radiation sources are discovered at the state’s border or on national territory, Laboratory Section of RDC has to identify, investigate and assess it. For this reason Latvia participates in the EU PECO project co-ordinated by the Karlsruhe Transuranium Institute. However, RDC at the moment has no capability to make alpha-spectrometry of seized materials. Keeping in mind the threat of possible terrorist attacks there is a need to use precautionary measures before opening the suspicious packages (they have to be X-ray examined);

After detection of any suspicious cargo or packages, presently the portable gamma spectrometric equipment is used by RDC that allows limited on-site investigation. Based on the national regulations and also recommendations within PECO project, the on-site investigations shall be done by the experts from Laboratory Section of the RDC. In order to analyse nuclear material in the RDC lab and control facilities that perform practices with nuclear materials there is a need for additional special equipment (Alpha spectrometer and portable neutron detectors).

To face the threat of radiological terrorism there is a need to upgrade investigation possibilities in cases of seizure and recovery, because there are some evidences in some countries, that smugglers or terrorists could use explosives to prevent non-proper opening of the smuggled radioactive or nuclear materials, but there is very limited capabilities to do x-ray checks at many border crossing points. The particular project is not intended for hardware upgrades to increase detection capabilities, the Scope of this component is to improve investigating capabilities of national radiation and nuclear safety regulatory authority.

3. Capability for emergency response

According to the Emergency response plan and responsibilities of the RDC the Early Warning Sector together with Radiation Safety Sector of the Laboratory Section of RDC is responsible and has to cope with radiological incidents and minor accidents in the country.

The actual response activities (mitigation of consequences and local decontamination) in case of limited radiological accidents and radiation incidents fall within the responsibility of a TSO to the RDC, namely the Radioactive waste management agency, RAPA Ltd. RAPA Ltd has a small operative emergency response unit that deals with relatively small cases of emergencies in cooperation with the Radiation Safety Centre. This emergency response unit was established in early 60’ties due to the fact that this structure was a major operator for transport of radioactive waste and has certain capacity to treat and to dispose of radioactive waste. However, this capacity is limited mainly due to financial constraints and technical possibilities. In order to improve the preparedness of the country to such possible accidents, there is a need to upgrade decontamination capabilities and control of contamination.

4. Credibility and working practices of regulatory body

There are recommendations by the EU CONCERT group to introduce quality assurance procedures either based on ISO standard or good practice recommendations in the every day activities of the nuclear regulatory bodies. There are similar recommendations and guidelines made by the Latvian Government* for all state institutions to develop QA system, which should be based on ISO 9001:2000. In order to maintain good regulatory credibility and to improve work practices in

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* Regulations of the Cabinet of Ministers No. 501 of April 12, 2001 “On quality control system implementation in state administration institutions”
Recommendations of the Cabinet of Ministers No. 1 of December 11, 2001 “On quality control system implementation in state administration institutions”
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In particular with clients, there is an obvious need to implement Quality Assurance and Control System, based on relevant ISO standards (ISO 9001:2000 and ISO 17025).

Moreover, Latvia wishes to be in line with other EU nuclear regulatory authorities in terms of Quality Assurance and Control System. By that we mean that there are some EU countries that have already completed accreditation under ISO system, but in general all EU countries are in process to enhance QA/QC systems in regulatory bodies.

The Radiation Safety Centre plans to introduce QA system in two main steps – first by introducing the QA system in the Laboratory Section of the RDC, based on ISO 17025, and, in parallel, to go for introduction of ISO 9001:2000 for the entire RDC. The formal accreditation is envisaged to occur in 2003 and 2005 respectively.

For introducing the QA system based on ISO 9001:2000 a technical assistance project would be necessary, preferably with the assistance being delivered by an EU Member State, which already has introduced this system, in its nuclear regulatory body activities.

3.2. Linked activities

- EU PECO project on combating of illicit trafficking of radioactive and nuclear materials, (coordinated by the Karlsruhe Transuranium Institute)
- EU CONCERT program.

3.3. Results

- Ensured sustainability of occupational exposure control
- Enhanced capabilities to combat illicit trafficking of radioactive and nuclear materials
- Strengthened emergency response capabilities of regulatory body
- Increased credibility of regulatory body and improving its working practices

Guaranteed results from technical assistance through a services contract:

- Regulatory body prepared for implementation of QA/QC
- Prepared feasibility study and assessment of the costs for implementation of QA/QC
- Elaborated work plan for implementation of QA/QC
- Prepared draft QA manual
- Elaborated training programs and carried out training of staff
- RDC laboratory prepared for implementation of QA/QC

3.4. Activities

Component 1
Upgrading of capacity of Radiation Safety Centre

1. Ensure sustainability of occupational exposure control by supply of TLD equipment

TLD reader should be replaced and supplementary TLD badges are required. Due to intake of radionuclides, additional software is required for dose calculation.

Equipment to be purchased:
- RADOS Dosacus TLD reader;
- 1000 LiF-N TLD badges;
2. Enhance capability to combat illicit trafficking of radioactive and nuclear materials

Purchase of alpha spectrometer and mobile x-ray equipment for checking of confiscated packages before opening. The proposed system should consist of portable x-ray luggage control equipment and as called Alpha analyst package, which consist from alpha spectrometer (4 input), alpha detector, software (e.g. Genie-2000), direct drive vacuum pump etc.

3. Strengthen emergency response capability

Purchase of decontamination equipment and measurement equipment to control contaminations of people and transportation means, as well as personal protective means. This equipment would upgrade the capabilities of the TSO for the RDC, RAPA Ltd.

Inputs: two Supply contracts

Component 2
Increase credibility and improve working practices of RDC by implementation of QA/QC

In order to increase credibility and improve working practices of RDC a technical assistance project to study implementation of QA/QC is foreseen (this project component would not cover accreditation under ISO).

The following activities are envisaged:

- Preparation of feasibility study and assessment of the costs for implementation of QA/QC, including analysis about time for implementation, actual expenses, time for accreditation process, etc;
- Elaboration of work plan for implementation of QA/QC;
- Preparation of draft QA manual;
- Assistance in accreditation process commencement;
- Elaboration of necessary training programs;
- Organization of workshops;
- Organization of study visit on practical experiences of implementation of QA/QC and accreditation under ISO in the work of nuclear regulatory body;
- Assistance in preparation of training programmes;
- Assistance in preparation QA for laboratory (under ISO 17025)
- Assistance in General QA under 9001:2000

Inputs: One services contract which would be based upon provision of both a long-term expert and short-term experts with the following profiles:

Long-term expert:

- at least ten-year experience in the nuclear regulatory body;
- experience in the implementation of QA/QC systems;
- experience in organization of trainings on QA/QC;
- fluency in English.

Profile for short term experts:

- at least ten years experience in the nuclear regulatory body;
- at least five years experience in the field of laboratory work in the nuclear regulatory body;
- knowledge of practical implementation of training programmes;
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• fluency in English.

4. Institutional framework:

The Beneficiary and owner of the project is the national radiation and nuclear safety regulatory authority Radiation Safety Centre (RDC).

The Radiation Safety Centre
(Director Mr. Andrejs Salmins)
Maskavas iela 165, Riga, LV-1019, Latvia
Phone: +371 7032660
Fax: +371 7032659
E-mail: pasts@rdc.gov.lv
Internet: www.rdc.gov.lv

The Technical Support Organisation to the RDC involved in this project is:

Radioactive waste management agency “RAPA” Ltd
(Director Mr. Andris Abramenvoks)
Miera iela 31
Salaspils, LV-2169, Latvia
Phone: +371 7901212
Fax: +371 7901211
E-mail: reaktors@latnet.lv
Internet: www.rapa.lv

5. Detailed budget (in M €)

<table>
<thead>
<tr>
<th>Project Components</th>
<th>Investment Support</th>
<th>Institution Building</th>
<th>Total Phare (I + IB)</th>
<th>National Co-financing</th>
<th>IFI</th>
<th>TOTAL</th>
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6. Implementation arrangements

6.1. Implementing Agency

Implementing Agency for this project will be the Central Financing and Contracting unit (CFCU),
PAO - Ms Valentina Andrejeva,
State Secretary,
Ministry of Finance;
Smilsu 1,
Riga Latvia, LV-1050
phone +371 7226672,
fax +371 7095503.
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SPO – Mr Zigfrids Bruvers,
State Under Secretary,
Ministry of Environmental Protection and Regional Development,
Peldu 25,
Riga Latvia, LV-1050
phone +371 7026401,
fax +371 782106.

The overall technical management, reporting and monitoring of project activities will be the responsibility of the Radiation Safety Centre

Mr. Andrejs Slamins,
Director,
Maskavas str. 165,
Riga, LV-1019, Latvia,
Phone: +371 7032660,
Fax: +371 7032659.

6.2. Twinning

Not applicable

6.3. Non-standard aspects

The provisions of the Practical Guide to Phare, ISPA & SAPARD Contract Procedures are to be strictly followed. For the services component a directly negotiated agreement under the rules for assistance to nuclear regulatory body is envisaged.

Supply contract no. 1 shall require delivery of equipment from a single manufacturer, i.e. the manufacturer of RADOS equipment (RADOS Dosacus TLD reader; LiF-N TLD badges; Win TLD DOSACUS Management software) due to the following reasons. Occupational exposure control in Latvia is presently based exclusively on the RADOS system. The basic occupational exposure control equipment manufactured by RADOS was received by Latvia as a donation in 1990-ies. Additionally, in the whole Nordic region only the RADOS system equipment is used for occupational exposure control purposes. Therefore a direct contract with the company RADOS Technology Oy is envisaged.

Supply contract no. 2. shall be signed in a result of open tender procedure in accordance with the Practical Guide to Phare, ISPA & SAPARD Contract Procedures.

Ratio: if during project implementation the project cost for some reasons will decrease, the Phare financing will also decrease proportionally.

6.4. Contracts

<table>
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<tr>
<th>Contract</th>
<th>Description</th>
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<tr>
<td>Contract 1</td>
<td>Supply contract (RADOS equipment)</td>
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<td>Contract 2</td>
<td>Supply contract</td>
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7. Implementation Schedule

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<th>Component</th>
<th>Start of contracting</th>
<th>Start of project activity</th>
<th>Completion</th>
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<td>3rd Quarter of 2003</td>
<td>4th Quarter of 2003</td>
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<tr>
<td>Component 2</td>
<td>1st Quarter of 2003</td>
<td>3rd Quarter of 2003</td>
<td>3rd Quarter of 2004</td>
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</table>
8. Equal Opportunity

The main criteria for the selection and evaluation of the staff will be relevant professional qualification and experience in similar assignments but their sex or age. There will be equal opportunities for both men and women.

9. Conditionality and sequencing

Ensured co-financing by the state budget (for financial years 2003-2005)

ANNEXES TO PROJECT FICHE

1. Logical framework matrix in standard format
2. Detailed implementation chart
3. Contracting and disbursement schedule
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### Annex 1

#### LOGFRAME PLANNING MATRIX FOR PROJECT

<table>
<thead>
<tr>
<th>Programme name and number</th>
<th>632.05.01</th>
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<tr>
<td>Contracting period expires</td>
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<td>Disbursement period expires</td>
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<td>Total budget: 760 000</td>
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<td>Phase budget: 670 000</td>
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### Overall objective

Enhance the regulatory capacity of national radiation safety and nuclear safety institutions

### Project purpose

To enhance the regulatory capability of Radiation Safety Centre (RDC)

#### Indicators of Achievement

- Increased level of radiation and nuclear safety regulatory capacity
- Occupational exposure control
- Capacity for identification of seized materials
- Decontamination capacity
- QA level

#### Sources of Information

- Annual Report (RDC)
- Statistics on compliance
- Statistics on exposures
- Reports to IAEA illicit trafficking database
- Reports about findings from relevant trainings
- Reports about accreditation and audits

#### Assumptions

- Reporting to IAEA Illicit trafficking data base may only take place upon incident or accident
- Training findings can be reported only if any national training event is carried out

### Results

- Ensured sustainability of occupational exposure control
- Enhanced capabilities to combat illicit trafficking of radioactive nuclear materials
- Strengthened emergency response capabilities of regulatory body
- Increased credibility of regulatory body and improving its working practices

Guaranteed results from technical assistance via services contract:

- Regulatory body prepared for implementation of QA/QC
- Prepared feasibility study and assessment of the costs for implementation of QA/QC
- Elaborated work plan for implementation of QA/QC
- Prepared draft QA manual
- Elaborated training programs and carried out training of staff
- RDC laboratory prepared for implementation of QA/QC

#### Indicators of Achievement

- New TLD system is operational
- Alpha spectrometer and portable x-ray equipment is operational
- Decontamination equipment is in place and staff trained
- Status of accreditation of RDC

#### Sources of Information

- Annual Report of RDC
- Annual Report of RAPA, Ltd
- Reports under PECO project

#### Assumptions

- Reports under PECO can be used if any training is arranged under this project, relevant to illicit trafficking combat

### Activities

#### Component 1

Ensure sustainability of occupational exposure control by supply of TDL equipment

- Procurement of RADOS Dosacus TLD reader;

#### Means

Supply of equipment

- Project reports
- Annual report of RDC
- Developed Programme for technical assistance

#### Assumptions

- Activities are scheduled based on the assumption that money is available in
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- Procurement of 1000 LiF-N TLD badges;
- Procurement of Win TLD DOSACUS Management software including PC workstation;
- Enhance capability to combat illicit trafficking of radioactive and nuclear materials by upgrade of investigation possibilities
  - Procurement of Alpha spectrometer;
  - Procurement of Mobile X-ray equipment;
- Strengthen emergency response capability by upgrade of decontamination capabilities
  - Procurement of decontamination equipment
  - Procurement of measurement equipment for control contamination

Component 2
Increase credibility and improve working practices of RDC by implementation of QA/QC
- Preparation of feasibility study and assessment of the costs for implementation of QA/QC, including analysis about time for implementation, actual expenses, time for accreditation process, etc;
- Elaboration of work plan for implementation of QA/QC;
- Preparation of draft QA manual;
- Assistance in accreditation process commencement;
- Elaboration of necessary training programs;
- Organization of workshops;
- Organization of study visit on practical experiences of implementation of QA/QC and accreditation under ISO in the work of nuclear regulatory body;
- Assistance in preparation of training programmes;
- Assistance in preparation QA for laboratory (under ISO 17025);
- Assistance in General QA under 9001:2000

<table>
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<tr>
<th>Services contract that provides</th>
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<tr>
<td>1 Long term expert, Short term experts workshops study visit</td>
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January 2003

**Preconditions**
- Project Steering Committee established in the project inception phase
- Adequate financial support from the State budget (financial years 2003-2004)
Annex 2

DETAILED IMPLEMENTATION SCHEDULE OF ACTIVITIES

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<th>Investment Support (Component 1)</th>
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Institution Building (Component 2) Services contract:
Implementation of agreed action plan:

- Long term expert:
  - Assessment of current situation in Latvia and EU member states | X X X X X X |
  - Workshop | X |
  - Elaboration of necessary training programs | X X X |
  - Organization of study visits | X X |
  - Elaboration of draft QA manual | X X X X X X X X |
  - Assistance in accreditation process commencement |

- Short term expertise:
  - Assistance in preparation of training programmes | X X |
  - Assistance in preparation QA for laboratory (under ISO 17025) | X X X X |
  - Assistance in General QA under 9001:2000 | X X |
  - Report on implementation | X |
Annex 3

CUMULATIVE CONTRACTING and DISBURSEMENT SCHEDULE (EUR million)

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