Basic Information

1.1. CRIS No. 5812.04.03
1.2. Title Establishment of central processing and storage facility for institutional radioactive waste in Lithuania
1.3. Sector 23064
1.4. Location Radioactive Waste Management Agency (RATA) of Lithuania

2. Objectives

2.1. Overall Objective
The overall objective of this 1.8 MEUR institution-building and investment project with Lithuanian co-financing (0.45 MEUR) is to ensure effective radioactive waste management in compliance with a “high level of nuclear safety” according to EU requirements.

2.2. Project Purpose
The purpose of this project is to:

- Bring into line the work processes of the Radioactive Waste Management Agency with the practices in force in Member States of the EU.
- Assure safe and sound management of institutional radioactive waste.
- Establish a central processing and storage facility for institutional radioactive waste according to International Atomic Energy Agency and EU standards.

2.3. Accession Partnership and NPAA Priorities
The Accession Partnership 2001 sets out a priority "To implement the recommendations contained in the Council report on "Nuclear Safety in the Context of Enlargement" with due regard to the priorities assigned in the report".

The Council report on Nuclear Safety in the Context of Enlargement of June 2001 indicates in the general recommendation that “all Candidate States should continue to develop and implement their national programmes regarding the safe management of spent fuel and radioactive waste”.

The 2002 Regular Report on Lithuania’s Progress towards Accession underlines that “Radioactive waste and spent fuel management will need continued attention. In this respect, the recent start of the Radioactive Waste Management Agency's activities is welcomed. The agency should fully implement the Radioactive Waste Management Strategy and the action programme for 2002-2004. Lithuania should ensure that the agency is sufficiently funded and staffed with adequately trained employees, and that
appropriate measures are taken to improve current management practices for all kinds of radioactive waste generated during the operation of the Ignalina NPP and by various institutions. In this context, particular attention should be paid to the definition of waste acceptance criteria for storage and disposal operations and to the construction and/or modernisation of the corresponding facilities.”

3. Description

3.1. Background and Justification

As a part of the implementation of the Law on the Management of Radioactive waste, RATA was founded in May 2001. The agency was established to implement the management and final disposal of all radioactive waste transferred to it, generated by the Ignalina Nuclear Power Plant both during operation and the decommissioning process, and radioactive waste from small producers: hospitals, industry, research institutions etc (institutional radioactive waste, IRW).

Until the adoption of the Law on the Management of Radioactive Waste all institutional radioactive waste was processed by the Institute of Physics under its responsibility and was transferred to Ignalina NPP for storage. After the above-mentioned Law came into force, RATA, as the single authorized institution for radioactive waste management, signed a temporary agreement with the Institute of Physics so that IRW continued to be processed by the Institute. However, the conditions at the Institute of Physics are not suitable for radioactive waste processing and do not meet EU and international radiation protection requirements. The Institute’s licence to process IRW expires in 2004 but, due to fact that there are no other suitable facilities, the Institute of Physics will seek to extend their licence until RATA is able to take over the processing of IRW. Therefore, there is an urgent need to establish a new processing and storage facility for IRW with all necessary equipment and adequate storage capacity in compliance with EU requirements. The experience of Western countries in this area would be of considerable value.

In 2002, a Pre-feasibility Study was carried out by the Swedish Nuclear Fuel and Waste Management Co (SKB) in order to produce material upon which to make the decision on the best place for establishment of the proposed Institutional Radioactive Waste Processing & Storage Facility (IRWPSF). The study recommendation, which was supported by the Lithuanian Authorities, was to upgrade the Maisiagala site infrastructure and to establish the IRWPSF on the Maisiagala site close to the disused repository. The site of the Maisiagala Repository (which was operational from 1963 until 1988) occupies 2.7 hectares (6.642 acres) and is located 35 km northwest of Vilnius. Currently there are several buildings at the site: refurbished guard house, disused repository, a derelict former decontamination building and garage.

The basic design of the IRWPSF was prepared by SKB in the Feasibility Study based on the IAEA Safety Standards Series No. WS-R-2 Predisposal Management of Radioactive Waste Including Decommissioning. Under the study, the draft layout plan of the equipment and preliminary safety analysis were also performed. The following functions were identified as required in the facility: receiving of waste, verification and registering of the main waste characteristics as required by the waste acceptance criteria, dismantling of equipment, operations in a small-scale hot-cell, nuclide scanning, concrete mixing, packaging of waste in containers suitable for storage and
transportation, decontamination of equipment and environment, storage of waste containers.

3.2. **Linked Activities**

RATA receives support from the Swedish International Project Nuclear Safety (SIP). A cooperation agreement between RATA and SIP was signed on 14 November 2001. Under this agreement SIP has financed Pre-feasibility and Feasibility Studies carried out by the Swedish Nuclear Fuel and Waste Management Co (SKB) to upgrade the radioactive waste processing facility. The outputs of these studies helped in the estimation of the costs of construction of the IRWPSF and procurement of necessary equipment under this project. Further details about Feasibility Study are presented in Annex 4.

Within the framework of the technical co-operation project with the International Atomic Energy Agency (IAEA) in the period 2003-2005, RATA will obtain technical assistance for institutional radioactive waste management. The project budget is 246,930 USD. The project includes: RATA staff training, IAEA expert assistance in preparation of necessary improvements, implementation of relevant techniques and procedures, preparation of corresponding documentation, including QA/QC, harmonization of the Radioactive Source registry at Radiation Protection Centre and Radioactive Waste Management registry at RATA, supply of equipment for radioactive waste processing.

Ongoing Phare project 2002/000/632.06 “Safety Assessment and Upgrading of Maisiagala Repository in Lithuania”, 2.03 MEUR, will prepare the Safety Analysis Report for Maisiagala repository and will upgrade safety of the Repository by implementing physical protection and environmental monitoring equipment and by engineering works for radiological safety.

3.3. **Results.**

- Documents for permission of the construction of the Institutional Radioactive Waste Processing and Storage Facility prepared, and necessary permissions from the competent authorities received.
- Detailed technical design and Tender Dossier for the construction of the Institutional Radioactive Waste Processing and Storage Facility prepared.
- Equipment required for waste processing delivered and installed.
- Staff of RATA trained to use the new facility and equipment.
3.4. **Activities**

**Service:**
- Preparation of all the necessary documentation needed to receive permission for construction works.
- Preparation of a detailed technical design for the Institutional Radioactive Waste Processing and Storage Facility.
- Preparation of Tender Documents for the works and supply contracts.
- Training of staff to use the new facility and equipment.

**Works**

**Supply**
The equipment needed was defined by SKB in the Feasibility Study (Annex 4).

4. **Institutional Framework**
The State Atomic Energy Safety Inspectorate (VATESI) and Radiation Protection Centre (RPC) are the essential institutions regulating the safety of radioactive waste management. VATESI and the RPC will be involved in the Project as competent authorities licensing the IRWPSF. However, the main co-ordinator and beneficiary of the project will be RATA. The organisational structure of RATA is presented in Annex 5.

The Steering Committee, which will consist of representatives from RATA, VATESI, Ministry of Economy, Ministry of Finance, Central Project Management Agency, Radiation Protection Centre, and EC Delegation, will be established before the start of the project.

5. **Detailed Budget (in € million)**

<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>
</tr>
</thead>
<tbody>
<tr>
<td>Service</td>
<td>0.45</td>
<td>0.45</td>
<td>0.15</td>
<td></td>
<td>0.6</td>
<td>1.8</td>
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<tr>
<td>Works</td>
<td>0.525</td>
<td>0.525</td>
<td>0.175</td>
<td></td>
<td>0.7</td>
<td>1.8</td>
</tr>
<tr>
<td>Supply</td>
<td>0.375</td>
<td>0.375</td>
<td>0.125</td>
<td></td>
<td>0.5</td>
<td>1.8</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1.35</strong></td>
<td><strong>1.35</strong></td>
<td><strong>0.45</strong></td>
<td></td>
<td></td>
<td><strong>1.8</strong></td>
</tr>
</tbody>
</table>
The Phare amount is binding as a maximum amount available for the project. The ratio between the Phare and national co-finance amounts is also binding and has to be applied to the final contract price.

The national co-financing commitment is a tax-excluded net amount.

6. Implementation Arrangements

The Central Project Management Agency is responsible for tendering, contracting and accounting of the project. Responsibility for technical preparation, control and management of the service, works and supply will remain with the beneficiary.

6.1 Implementing Agency

Implementing Agency
Aloyzas Vitkauskas, Director of Central Project Management Agency, Ministry of Finance

Address: J. Tumo-Vaizganto 8A/2, room 241, Vilnius, Lithuania
Telephone: +370 5 212 66 21
Fax: +370 5 212 53 35
E-mail: info@cfcu.lt

Beneficiary Organization
Dainius Janenas, Director of Radioactive Waste Management Agency

Address: Algirdo g. 31, LT- 2006 Vilnius, Lithuania
Telephone: +370 5 213 31 39
Fax: +370 5 213 31 41
E-mail: dainius_janenas@rata.lt

Beneficiary’s Contact person
Nerijus Skridaila, Radioactive Waste Management Agency

Address: Algirdo g. 31, LT- 2006 Vilnius, Lithuania
Telephone: +370 5 213 31 39
Fax: +370 5 213 31 41
E-mail: nerijus_skridaila@rata.lt

6.2. Twinning

Twinning arrangements are not envisaged.

6.3. Non-standard aspects

The Practical Guide for the implementation of PHARE, ISPA&SAPARD will strictly be followed.

6.4. Contracts

1. Service – total value of 0.6 M€ including national co-financing of 0.15 M €
2. Works – total value of 0.7 M€, including national co-financing of 0.175 M€
3. Supply – total value of 0.5 M€, including national co-financing of 0.125 M€

7. Implementation Schedule.

<table>
<thead>
<tr>
<th>Component</th>
<th>Start of Tendering</th>
<th>Start of Project Activity</th>
<th>Project Completion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Service</td>
<td>1Q, 2004</td>
<td>3Q, 2004</td>
<td>4Q, 2006</td>
</tr>
<tr>
<td>Works</td>
<td>2Q, 2005</td>
<td>4Q, 2005</td>
<td>3Q, 2006</td>
</tr>
<tr>
<td>Supply</td>
<td>2Q, 2005</td>
<td>4Q, 2005</td>
<td>3Q, 2006</td>
</tr>
</tbody>
</table>

8. Environment
The environmental impact assessment will be carried out under the Service contract.
The equipment to be acquired for the project will respect all applicable environmental standards.

9. General Criteria

9.1. Catalytic effect: The Phare contribution will act as catalyst for priority Accession-driven actions in the field of nuclear safety.

9.2. Co-financing: The Lithuanian Government will contribute 25 percent of the service, works and supply component costs.

9.3. Additionality: PHARE intervention does not displace other financiers.

9.4. Project readiness and size: The beneficiary will prepare the TORs for the service components. Tender Documents for the supply and works components will be prepared under the service contract.

9.5. Sustainability: Maintenance to be supported by RATA as is foreseen in the project.

9.6. Compliance with state aids provisions: The investment part of the project will respect the state aids provision of the Europe Agreement should they be applicable.

10. Conditionality and sequencing
National co-financing must be secured
Annexes to project Fiche

1. Logical framework matrix in standard format.
2. Detailed implementation chart.
3. Contracting and disbursement schedule.
4. Reference to Feasibility/Pre-feasibility Studies.
5. Organisational structure of RATA.
**LOGFRAME PLANNING MATRIX**

**For Project:**

*Establishment of central processing and storage facility for institutional radioactive waste in Lithuania*

<table>
<thead>
<tr>
<th>Programme:</th>
<th>5812.04.03</th>
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</thead>
<tbody>
<tr>
<td>Contracting Period Expires:</td>
<td>Disbursement Period Expires:</td>
</tr>
<tr>
<td>30.11.2005</td>
<td>30.11.2006</td>
</tr>
<tr>
<td>Total Budget:</td>
<td>Phare Budget:</td>
</tr>
<tr>
<td>1.8 M€</td>
<td>1.35 M€</td>
</tr>
</tbody>
</table>

**Overall Objective:** To ensure effective radioactive waste management in compliance with a “high level of nuclear safety” according to EU requirements.

**Objectively Verifiable Indicators:** Management of radioactive waste in Lithuania is according to international safety standards and practices  
**Source of Verification:** Government records

**Project Purpose:**
- Bring into line the work processes of the Radioactive Waste Management Agency with the practices in force in Member States of the EU.
- Assure safe and sound management of institutional radioactive waste.
- Establish a central processing and storage facility for institutional radioactive waste according to International Atomic Energy Agency and EU standards.

**Objectively Verifiable Indicators:** Lithuanian Radioactive Waste Management Agency operates at the same level and efficiency as equivalent organisations in EU Member States  
**Source of Verification:**  
- Project Reports  
- Reports of RATA

**Assumptions:**
- Continued funding of the Radioactive Waste Management Agency operations
- Sites for storage of radioactive waste can be provided as necessary

**Results:**
- Documents for permission of the construction of the Institutional Radioactive Waste Processing and Storage Facility prepared and necessary permissions from the competent authorities received.
- Detailed technical design and Tender Dossier for the construction of the Institutional Radioactive Waste Processing and Storage Facility prepared.
- Equipment required for waste processing delivered and installed.
- Staff of RATA trained to use the new facility and equipment.

**Objectively Verifiable Indicators:**
- Permission for construction works received as planned
- Detailed technical design of Institutional Radioactive Waste Processing and Storing Facility according to schedule
- On schedule completion of construction of IRWPSF
- Licences for exploitation of Institutional Radioactive Waste Processing and Storage Facility received according to schedule
- Equipment delivered and installed on time and at the right quality, as planned

**Source of Verification:**
- Project Reports
- Reports of RATA

**Assumptions:**
- Successful implementation of linked Phare and bilateral support projects

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**Notes:**

- Annex1
<table>
<thead>
<tr>
<th>Activities:</th>
<th>Means:</th>
<th>Assumptions:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Preparation of all the necessary documentation needed to receive</td>
<td>- supply contract</td>
<td>Successful start of the project.</td>
</tr>
<tr>
<td>permission for construction works.</td>
<td>- works contract</td>
<td>Smooth process of procedures concerning</td>
</tr>
<tr>
<td>- Preparation of detail technical design for Institutional Radioactive</td>
<td>- service contract</td>
<td>tendering, contracting and implementation</td>
</tr>
<tr>
<td>Waste Processing and Storage Facility;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Preparation of Tender Documents needed for the works and supply</td>
<td></td>
<td></td>
</tr>
<tr>
<td>contracts.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Preparation of the Safety Analysis Report and other necessary documents</td>
<td></td>
<td></td>
</tr>
<tr>
<td>for licensing the Institutional Radioactive Waste Processing and Storage</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Facility;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Construction of the Institutional Radioactive Waste Processing and</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Storage Facility</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Provision and installation of equipment needed for Institutional</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Radioactive Waste Processing and Storage Facility.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- Training of staff to use the new facility and equipment.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Preconditions
National co-financing available.
# DETAILED IMPLEMENTATION CHART FOR THE PROJECT

<table>
<thead>
<tr>
<th>Year</th>
<th>2003</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Month</td>
<td>11 12 1 2 3 4 5 6 7 8 9 10 11 12</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12</td>
<td>1 2 3 4 5 6 7 8 9 10 11 12</td>
</tr>
<tr>
<td>Service</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Works</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Supply</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

- **Design**
- **Tendering**
- **Implementation**
# CUMULATIVE CONTRACTING AND DISBURSEMENT SCHEDULE (Phare Contribution only –1.35 M€)

<table>
<thead>
<tr>
<th>Date</th>
<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>31/03</td>
<td>30/06</td>
<td>30/09</td>
<td>31/12</td>
</tr>
</tbody>
</table>

**Contracting**

- **Service**: 0.45
- **Works**: 0.525
- **Supply**: 0.375

**Total contracting (cumulative)**: 0.45, 1.35

**Disbursement**

- **Service**: 0.135, 0.17, 0.205, 0.24, 0.275, 0.31, 0.345, 0.38, 0.415, 0.45
- **Works**: 0.08, 0.21, 0.34, 0.47, 0.525
- **Supply**: 0.225, 0.335, 0.375

**Total disbursement (cumulative)**: 0.135, 0.17, 0.205, 0.24, 0.275, 0.645, 0.78, 1.055, 1.22, 1.35
REFERENCE TO FEASIBILITY/PRE-FEASIBILITY STUDIES

Scope of the Feasibility Study

This study identified the process applied and equipment needed for the Institutional Radioactive Waste Processing Facility. Furthermore, the study provided the material needed for a decision on upgrading the Maisiagala infrastructure for receiving radioactive waste from small users and for the necessary pre-treatment, treatment and final conditioning. The structure of this study is based on the IAEA Safety Standard documents, IAEA Safety Standards Series No. WS-R-2 Predisposal Management of Radioactive Waste Including Decommissioning. A Preliminary Safety Assessment has also been performed.

The study:

- Identified the function of the facility and required capacity.
- Defined the general requirements as outlined. The following procedure and functions shall be implemented in the facility:
  - Collection of waste from small users. Vehicle and containers needed.
  - Receiving the waste at the facility at Maisiagala
  - Documentation, verification and registration of main characteristics as required by the waste acceptance criteria (the documentation should be compatible with the documentation system used by the authorities and by INPP)
  - Dismantling of equipment (equipment with small activity sources or where there are large inactive parts that can be removed without exposing the operators to unacceptable radiation). A “small size hot-cell” should be considered.
  - Packaging the waste (disused sealed sources, trash-waste) in containers suitable for storage and transportation. Containers for storage and transport necessary.
- Analysed options and prepared a detailed flow sheet for the future management of radioactive waste from small users in Lithuania (collection, processing/conditioning, interim storage, final disposal and transports).
- Defined, based on the flow sheets, the overall functional requirements of the facility.
- Defined, based on the flow sheets, the overall functional requirements of all major components of the facility.
- Assessed the status of the present building(s) to be used and possibility for their refurbishment, especially the structural stability.
- Identified the optimal technical concept for the restructuring (refurbishment of existing building(s), new building(s) or combination).
- Designed the premises of the facility.
- Drafted layout of the equipment
- Prepared a detailed plan for the implementation of a new facility with cost breakdown and time schedule.
- Made a preliminary SAR for the facility to demonstrate that it can be established and operated in accordance with Lithuanian requirements and good international practice.

The study provides for a two-storey IRWPF building, constructed of in-place cast concrete, with area of around 400 m² with premises of around 1000 m². The facility comprises an area for handling of waste, personnel area, offices, buffer storage, auxiliary systems and communications. A small Hot Cell, constructed of in-place cast concrete is included.

**Evaluation of the investment cost for the IRWPSF**

<table>
<thead>
<tr>
<th>Activity</th>
<th>Cost Million Euro 1)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Construction of the facility</td>
<td>0.404</td>
</tr>
<tr>
<td>Upgrading of utilities on site</td>
<td>0.024</td>
</tr>
<tr>
<td>Waste handling equipment</td>
<td>0.404</td>
</tr>
<tr>
<td>Total investment</td>
<td>0.832</td>
</tr>
</tbody>
</table>

1) The costs in the study were given in Litas including VAT (18%). In this table the costs are presented in euros (1 EUR=3.4528 Litas, VAT excluded).

**List of equipment:** hot cell and hot cell tools; overhead crane (30 ton), sliding hatch for the HC, instruments for dose rate control; decontamination equipments, personal monitors, nuclide scanner, concrete mixer etc. ventilation equipment: fans, HEPA filters, heat recovery unit.

**Facility Drawing**
STRUCTURE OF RADIOACTIVE WASTE MANAGEMENT AGENCY

Annex 5