STANDARD SUMMARY PROJECT FICHE- TRANSITION FACILITY

1. Basic Information
   1.1 CRIS Number: CZ2004/006-237/03
   1.2 Title: Reconstruction of the Hot Cell at the Richard Repository
   1.3 Sector: Energy/ Nuclear Safety
   1.4 Location: Czech Republic

2. Objectives
   2.1 Overall Objective(s):
   • To achieve ability to take on the obligations of membership in the EU and compliance with practices in relevant EU waste management organizations.
   • To achieve compliance of Czech waste management practice with the general recommendation Type II and requirements of the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management.
   2.2 Project purpose:
   • to reconstruct a hot cell situated in a building just outside the Richard repository so that packaging, repackaging and physical control of the integrity of disused long-lived sealed radioactive sources - removed from users' premises - can be performed according to current Czech safety regulations. This operation is a prerequisite for a subsequent long-term storage of these sources into chambers of the Richard repository pending the availability of a deep underground disposal facility.
   • to provide testing facility operation for transport packages of radioactive waste material
   2.3 Justification
   This project will create conditions for accomplishment of the medium-term priorities of the NPAA in sectorial policies and in the Accession Partnership. It is part of a comprehensive nuclear safety policy being implemented at the national level. The Council Report on Nuclear Safety in the Context of Enlargement of June 2001 issued recommendations concerning the safety of other types of nuclear installations than nuclear reactors. It is notably stated, "all candidate states should continue to develop and implement their national programmes regarding the safe management of spent fuel and radioactive waste" (recommendations of type II). In this context the reconstruction of the hot cell and long-term storage of disused long-lived sealed radioactive sources in the Richard repository would constitute an important safety improvement against their current storage at users' premises. Realization of the proposed project belongs to the actions that will help the Czech Republic to implement the acquis in nuclear safety and radiation protection in the area of environment.

3. Description
   3.1 Background and justification:
   At present there are some disused sealed radioactive sources in the Czech Republic for which no long-term storage or disposal route exists. These are mainly long-lived sealed radioactive sources that are provisionally stored at users' premises. The State organisation RAWRA (Radioactive Waste Repository Authority) as owner and operator recognises that it has a responsibility to provide a disposal route for such wastes and is examining the possibility of receiving such sources into Richard for interim storage prior to disposal in a deep underground repository. According to Czech regulations, interim storage in the chambers of the Richard repository would require packaging or re-packaging of these sources, and control of their physical integrity. In order to do so, a suitable hot-cell must be operational near the Richard repository. The existing hot cell that is situated in the operational building (the former irradiation facility) at the Richard repository site is out from service because it does not meet the recent safety requirements.

   To improve that situation, the project CZ 01-14-04 „Reconstruction of the Hot Cell at the Repository Richard” was proposed and approved within the Phare projects from 2001 budget. During the preparation of the Project Fiche and TOR there were several changes in the approach to the character and scope of the project. Therefore as final result of this the total project budget was underestimated, and because all bids exceeded the available budget, the tender failed and project was canceled. Taking that experience into account, it is proposed an increasing of the allocation of the resources accordingly to the real situation on the market i.e. up to 300 000 EUR, which is only 50,000 EUR more than for the project when it was included under the 2001 Nuclear Safety programme.
The reconstruction of the hot cell is closely bound to the Phare project CZ 632.02.03 Upgrade of the testing facility for transport packages. The testing facility cannot be fully functional without possibility to use the hot cell, e.g. for testing of the packages integrity and shielding capability, etc.

3.1 **Linked activities:**
Completed or on-going activities that are connected with proposed project are:

- Study on safe management of disused sealed sources that are not acceptable for disposal at existing Czech repositories, (Ipron,a.s., 04/2000)
- Feasibility study on general reconstruction of the building of former irradiation facility at the Richard repository site, (Ipron,a.s., 04/2001).
- Program on decontamination of laboratories of former irradiation facility building, used in the past for $^{226}$Ra sources production, (expected end 07/2004).
- Program on Reconstruction and Maintenance of the Repository Richard Structures and Systems, co-ordinated by RAWRA.
- Inspection of Shielding Constructions in a Hot Chamber at the Richard Repository, (Technical University Brno, 12/2002).
- Inspection of existing equipment of the hot cell at the repository Richard, (SKODA JS, a.s. Plzen 12/2002).
- Assessment of manipulations in the hot cell and requirements on new equipment delivery, (P. Cesak, 02/2003).
- Management of spent sealed radioactive sources in Central and Eastern Europe. EUR 18186 report issued in 2000 (is available at the following web site [http://europa.eu.int/comm/energy/nuclear/reports.htm](http://europa.eu.int/comm/energy/nuclear/reports.htm)).
- Phare project CZ 01.14.04 Reconstruction of the hot cell at the Richard repository facility Czech Republic (cancelled during negotiation procedure).
- Phare project CZ 632.02.03 Upgrade of the testing facility for transport packages (approved, a contractor selection in progress).

Besides above-mentioned projects RAWRA plans to begin in advance preparatory steps for the project realization that will include dismantling of existing manipulators, clean up of the hot cell and adjacent space, etc.

3.2 **Results:**
- The hot cell refurbishment plan drafted
- The hot cell equipped by recent state of updated technology for its operation
- Operational and inspection conditions comply with relevant regulations
- Trained hot cell operation personnel

3.3 **Activities:**
- **Preparation of a detailed work programme**
The work programme will prepare the Contractor in cooperation with the Beneficiary. It will be based on review of recent situation at the site (e.g. state of preparatory activities realized in advance within the national co – financing), extent of necessary adaptation of the hot cell construction, available human resources and expected terms of the equipment delivery. The results will be summarized in the technical report, 1 month after the *contract signature (below T-0).*
- **Preparation of a refurbishment plan**
The Czech subcontractor on the basis of Supplier’s technical requirements and under its supervision will prepare the Hot Cell refurbishment plan, 3 months after the T-0.
- **Hot Cell construction adaptation, equipment supply**
The local subcontractors will realize the construction adaptation; the equipment supply is fully in responsibility of the Contractor. End of these activities is expected no later then T-0 + 6 months.
- **Equipment installation, hot cell refurbishment**
The staff of the contractor, using the international and local experts, will manage the equipment installation. The general refurbishment of the hot cell (e.g. painting, construction work, etc.) will be provided by local subcontractors. Expected term of its completion is T-0 + 9 months.
• **Licensing documentation preparation**
  The licensing documentation will be developed in close cooperation of RAWRA personnel
  with the Contractor’s staff as well with local subcontractors. The licensing documentation
  development will begin after the Hot Cell refurbishment plan completion. Its completion is
  expected T-0 + 10 months.

• **The hot cell preparation and training of personnel**
  The Contractor in cooperation with the Beneficiary will manage the Hot Cell preparation and
  training of the personnel. End of these activities is expected T-0 + 12 months

• **Licensing procedures and start up of the hot cell operation**
  The Beneficiary, in cooperation with the Contractor, will organize the licensing. The expected
  term of its completion is T-0 + 15 months.

3.4 **Lessons learned:**
RAWRA had analysed the reasons that lead to the cancellation of the originally proposed 2001
project CZ 01.14.04 (see 3.1), and avoided their repeating during preparation of this proposal.

4. **Institutional Framework**
The project would support the work of the state organisation "Radioactive Waste Repository Authority
(RAWRA)".

5. **Detailed Budget (in M €)**

<table>
<thead>
<tr>
<th>Project Component</th>
<th>Transition Facility Support</th>
<th>National Co-financing*</th>
<th>TOTAL</th>
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6. **Implementation Arrangements**
The decentralised implementation scheme will be followed for the project. The CFCU will be the Agency
responsible for implementing the Project:

6.1 **Implementing Agency**
CFCU Mr. Jan Slavíček,
Letenská 15 - CZ - 118 10 PRAHA 1
Ph +420-2-57044551 /Fax: +420-2-57044550
E-mail: jan.slavicek@mfcr.cz

**Final Beneficiary:**
RAWRA - Dlazdena 6, 110 00 Prague 1,
Director: Mr. Vitezslav Duda, MBA
phone: + 420 2 214 215 26
Contact Point: **Mr. Miroslav Kucerka**
phone: + 420 2 214 215 28 /Fax: + 420 2 214 215 44
E-mail: kucerka@rawra.cz

6.2 **Twinning N/A**
6.3 **Non-standard aspects:**
Direct Contract, based on the results of the cancelled CZ 01-14-04 project tender, is proposed
6.4 **Contracts:**
(1) Supply Contract – 0,300 MEUR
(2) National co-financing contract – 0, 100 MEUR
7. **Implementation Schedule**

7.1 Start of tendering/call for proposals: 4. Q. 2004
7.2 Start of project activity: 1. Q. 2005
7.3 Project Completion: 1. Q. 2006

8. **Sustainability** N/A

9. **Conditionality and Sequencing**

The co-funding in 2005 of the project by the Czech authorities (RAWRA) must be secured. A decision should be taken in autumn 2004.

As far as applicable, measures taken should be in line with obligations under the Waste Framework Directorate (Directive 75/442/EEC as amended by Directive 91/156/EEC) as well as with the Directives on water quality, in particular, the Groundwater Directive 80/68/EEC, as well as the EIA Directive (Directive 85/337/EEC, 97/11/EC).

The project will be sequenced as follows:

- 1. Q. 2005 Work programme and refurbishment plan completed
- 2. Q. 2005 Hot Cell construction adaptation, equipment delivery and installation
- 3. Q. 2005 End of reconstruction works
- 4. Q. 2005 Hot cell testing and preparation, training of the personnel.
- 1. Q. 2006 End of Project

**ANNEXES TO PROJECT FICHE**

1. Logframe Planning Matrix
2. Detailed implementation chart
3. Contracting and disbursement schedule
4. Reference to feasibility /pre-feasibility studies
**LOGFRAME PLANNING MATRIX**

**Programme name and number:** TF CZ 2004  
**Total Budget:** €0,400  
**TF contribution:** €0,300

### Overall Objective(s)
- Ability to take on the obligations of membership in the EU
- Compliance with the general recommendation Type II and requirements of the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management
- To achieve compliance with practices in relevant EU waste management organizations

### Project Purpose
To establish a centralized system for management and handling of disused sealed sources that are not acceptable for disposal at existing repositories and their long-term storage for their future disposal in the deep geological repository and to improve RAWRA ability to fulfill its obligations given by recent Czech nuclear legislation as well as reach compliance with EU best practices

### Objectively verifiable indicators

<table>
<thead>
<tr>
<th>Overall Objective(s)</th>
<th>Objectively verifiable indicators</th>
<th>Sources of verification</th>
</tr>
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</table>
| • Ability to take on the obligations of membership in the EU  
• Compliance with the general recommendation Type II and requirements of the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management  
• To achieve compliance with practices in relevant EU waste management organizations | • acknowledgment by the European Commission in harmonization practice  
• recognition of RAWRA management and performance as comparable with waste management agencies in EU countries | • report on radioactive waste management and peer review of practices according the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management  
• RAWRA internal instructions and documentation |

### Assumptions
- Hot Cell in operation allowing RAWRA to accept institutional radioactive waste and prepare it for long-term storage and future disposal in the deep geological repository
- RAWRA operational documentation complies with the Czech concept on radioactive waste management that has been adopted by the Czech Government
- RAWRA internal instructions on the hot cell operation and on disused sealed sources management
- Licence by the State Office for Nuclear Safety on the Hot Cell and the repository Richard operation
### Results
- The hot cell refurbishment plan drafted
- The hot cell equipped by recent state of art technology for its operation
- Operational and inspection conditions comply with the relevant regulations
- Trained hot cell operation personnel

### Objectively verifiable indicators
- Approved reconstruction plan by the stakeholders
- Equipment supplied compliant with the requirements specified in the supply specification and in the reconstruction plan
- License awarded by the State Office for Nuclear Safety on the Hot Cell
- Hot Cell in Richard repository in operation within 15 months after the beginning of the project
- Internal RAWRA documents developed in compliance with the project requirements and recommendations
- 2 – 3 employees trained and granted a certificate

### Sources of verification
- Project documentation
- Refurbished hot cell with license for its operation
- RAWRA internal instructions
- RAWRA annual report
- SUJB decision

### Assumptions
- Approval of the reconstruction plan by RAWRA and the stakeholders
- Operational license granted by the State Office for Nuclear Safety

### Activities
- Preparation of a detailed work program
- Preparation of a refurbishment plan
- Equipment supply
- Equipment installation, hot cell refurbishment
- Licensing documentation preparation
- The hot cell preparation
- Training of personnel
- Licensing procedures and start up of the hot cell operation

### Means
- **Supply contract 0,300 M €:**
  - Engineering organization for the new special equipment supply and the hot cell reconstruction realization
- **National co-financing 0,100 M €**
  - Local subcontractors of RAWRA for the Hot Cell reconstruction documentation development and remaining equipment and construction refurbishment

### Assumptions
- Supply specifications prepared in time
- Financial resources allocated within the state budget for co-financing by RAWRA
- Approved reconstruction documentation for its utilization
- Completed decontamination of the building (RAWRA)
- License for the hot cell operation granted by the State Office for Nuclear Safety

### Preconditions
## DETAILED IMPLEMENTATION CHART FOR THE PROJECT

**Project Title:** Reconstruction of the Hot Cell at the Richard Repository

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## ANNEX 3

### CONTRACTING AND DISBURSEMENT SCHEDULE

#### Cumulative Quarterly Contracting Schedule (M€)

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#### Cumulative Quarterly Disbursement Schedule (M€)

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REFERENCE TO FEASIBILITY /PRE-FEASIBILITY STUDIES

Study on safe management of disused sealed sources that are not acceptable for disposal at existing Czech repositories, (Ipron,a.s., 04/2000)

In the study are discussed the approaches how manage the disused sealed sources in accordance with new regulatory requirements.

As an optimal option, the reconstruction of the hot cell at the repository Richard has been selected as result of multi-criteria evaluation of 5 possible solutions. (Chapter 3)

In the Chapter 4 the requirements and recommendation on the hot cell reconstruction are discussed. Necessary resources for its reconstruction were estimated, that varied from 2,3 M CZK to 12,0 M CZK, i.e. from required minimum up to general renovation.

Feasibility study on general reconstruction of the building of former irradiation facility at the Richard repository site, (Ipron,a.s., 04/2001).

The study deals with reconstruction of the former irradiation facility building, which part is also the hot cell. In the Chapter B2 are defined the recent regulatory requirements concerning radiation protection and monitoring system.

In the Chapters C and D are proposed actions (replacement of equipment, refurbishment of structures, and possession of new equipment) that will assure that the planed building reconstruction and its further operation will meet all regulatory requirements. Particularly the chapter C7 deals with the radiation protection and monitoring of the environment.

The minimal resources needed for the building reconstruction were estimated at 13,6 M CZK without costs on reconstruction of the hot cell.

The Environmental impact assessment is not required by the Czech regulation at this level of studies, but all proposed actions are leading to the improvement of the safety in general, regardless if it concerns the radiological or common safety, as e.g. fire protection.