

STANDARD SUMMARY PROJECT FICHE - TRANSITION FACILITY

Support to andrad to develop a new Radioactive waste treatment and conditioning facility

1. Basic Information:

- 1.1. *CRIS Number : 2007/19343.06.05*
- 1.2. **Title:** SUPPORT TO ANDRAD TO DEVELOP A NEW RADIOACTIVE WASTE TREATMENT AND CONDITIONING FACILITY
- 1.2. **Sector :** Energy / Nuclear Safety
- 1.3. **Location:** Romania, National Agency for Radioactive Waste (ANDRAD)
- 1.4. **Duration :** 17 months

2. Objectives:

2.1. Overall Objective:

Support to ANDRAD to implement integral management for disposal of the radioactive waste at Saligny low and intermediate level waste (LILW) repository in accordance with the Romanian strategy concerning the management of spent nuclear fuel and radioactive waste in compliance with EU standards.

2.2. Project Purpose:

To develop a new waste treatment and conditioning facility in Romania for processing of all radioactive waste that will be disposed of at Saligny LILW repository in accordance with the national strategy.

2.3. Justification

Starting from the particularity of the nuclear safety sector, the project is in full compliance with the European Union position on this field, namely *"The Commission is proposing to help establish a high level of nuclear safety in the management of spent nuclear fuel and radioactive waste in the Member States, in order to protect public health and the environment. It believes that safe and effective management of spent nuclear fuel and radioactive waste can only be ensured through Community intervention."* In this context, it is necessary to stress that the "Proposal for a COUNCIL DIRECTIVE (EURATOM) on the management of spent nuclear fuel and radioactive waste" Brussels, 30.01.2003 COM (2003) 32 final, stated "Where there is no suitable alternative to disposal, and where such a disposal option is not yet available, Member States shall integrate the following decision points into their programmes: (a) **authorization for development of appropriate disposal site(s) to be granted no later than 2008.** and (b) in the case of short-lived low and intermediate-level radioactive waste, if this is to be disposed of separately from high-level and long-lived radioactive waste, **authorization for operation of the disposal facility to be granted no later than 2013**". In the same document, on Explanatory Memorandum, it was mentioned that **"Further delays in decisions on the development of repositories for the disposal of radioactive waste cannot be justified.** On the contrary, there is a sound basis on ethical, environmental and nuclear safety grounds for the rapid development of these facilities. Any delays that could be interpreted as passing on to future generations the responsibility for disposing of our wastes should be avoided, especially since such delays, particularly in the case of the more

LB

hazardous wastes, may also increase the potential risk of accidents and terrorist attacks. Consequently, Member States should develop appropriate strategies and prepare detailed programmes for the long-term management of all the waste types under their jurisdiction. Though the Community as a whole should maintain the capacity to store its wastes, the emphasis of these programmes should be on the development of repositories for the disposal of radioactive waste.” Later on, the European Parliament suppressed the Community timetable concept for the authorizations of development and operation of final disposal sites, recognizing that “Member States are free to determine their own dates. The discussions in the Council, in addition, showed clearly that Member States are deeply hostile to the Community timetable concept for final disposal”. (Brussels, 8.9.2004 COM(2004) 526 final Amended proposal for a COUNCIL DIRECTIVE (Euratom) on the safe management of the spent nuclear fuel and radioactive waste”.

Taking into account the previous technical assistance projects whose beneficiary was ANDRAD, it appears as a consequence that this project to be also a technical assistance.

This project was prepared bearing in mind Council Conclusions on Nuclear Safety and Safe Management of Spent Nuclear Fuel and Radioactive Waste (8784/04/07 ATO 63), the June 2004 Council conclusions on Nuclear Safety and Safe Management of Spent Fuel and Radioactive Waste (10823/04) and the work of the Working Party on Nuclear Safety (WPNS) in 2005 and 2006.

This project will support ANDRAD to fulfil its responsibilities related to the national strategy for the safe management of radioactive waste and spent fuel that includes all radioactive waste under its jurisdiction and covers all stages of management (National Strategy), namely to put into operation the LILW Saligny repository in 2014.

3. Description

3.1. Background and justification:

ANDRAD started its activity in 2004, being responsible for the coordination of the safe management of spent nuclear fuel and radioactive waste in Romania. A valuable tool for development of ANDRAD's activities was the results of the project “Technical assistance for establishing a Romanian radioactive waste management organisation (ANDRAD)” executed in the framework of the Dutch MATRA programme on behalf of the Romanian Ministry of Economy and Trade. At that time, the experts familiar with the safety requirements for radioactive waste management in EU Member States identified that, as near term priority (about 3 years), the waste management strategy for CNE Cernavoda should be updated, taking account of plans to have in place a disposal facility for short-lived NPP waste by 2010. Issues to be addressed include: a) Waste characterization; b) Treatment of liquid organic waste; c) Future interim storage of solid waste (current storage in stainless steel drums should be re-examined); d) Humidity control in waste store. Related to new near surface repository, as medium term priority (4-10 years), it was mentioned that a decision is needed on whether to proceed with siting for a new repository near CNE Cernavoda is required. To inform this decision the current design and safety assessments should be revisited, taking account of: a) Waste inventory (e.g. considering future operational and decommissioning wastes from CNE Cernavoda); b) Latest geological and hydrogeological information for the potential sites; c) Cost; and d) Considerations of public acceptance. In 2004, as a result of this project was published in Official Monitor of Romania the National Strategy on Medium and Long Term Management of Spent Fuel and Radioactive Waste. The National Strategy foresees that a new national repository for low and intermediate level waste will be brought into operation in 2014. To achieve this deadline, ANDRAD, in close collaboration with specialized Romanian organisations, started to prepare technical documentations (e.g. Initial Safety Analysis Report, Environmental Impact Assessment) necessary to grant the siting license from the regulatory body (CNCAN) for the Saligny repository. Chapter 3 on Initial Safety Analysis Report (ISA) deals with treatment and conditioning technologies for radioactive waste to be disposed of in Saligny repository. Because at this time, no conditioning and treatment facilities are available for the radioactive wastes from NPP operation in Romania, we took into consideration in ISA that radioactive waste processing and

bringing them to an acceptable form for disposal will be made through a Waste Treatment and Conditioning Plant (WTCP), which should ensure the following functions:

- super compacting of the metallic drums containing compactable waste;
- cementation of the spent ionic resins, excepting those resulting from moderator;
- cementation of the pellets from supercompaction and the drums containing low level non-compactable waste into the final containers;
- cementation of the 200 l drums with ionic resins - intermediate level waste into the disposal containers, or cementation of the resins directly into containers;
- cementation of the drums with filters – intermediate level waste into containers. The filters are previously cut to pieces and fixed through cementation into 200 l drums;
- transferring the stored waste previously the operation of the WTCP, from the stainless steel drums into 200 l standard metallic drums;
- organic liquids and other waste in various quantities that will be treated and conditioned in the same facility, in accordance with international good practices;
- transport of the containers that are considered disposal packages to the repository cells.

In 2006 ANDRAD has requested the International Atomic Energy Agency (IAEA) to organise a WATRP peer review of the Programme on the development of a Low and Intermediate Level Waste (LILW) near surface disposal facility. It is necessary to mention that potential waste treatment and conditioning activities were not assessed by the review team.

In the same context, ANDRAD applied within the framework of Phare assistance to Romania, Horizontal Programme for Community Support in the Field of Nuclear Safety for Romania in 2004 for a new project "Support to ANDRAD to extend and accelerate development of a new national L/ILW disposal". The main objective of this project is to provide support to the Romanian Radioactive Waste Management Agency (ANDRAD) in completion of the documentation package (Initial Safety Analysis Report, Environmental Impact Analysis Report, etc) for the licensing of the Saligny site and to ensure the preparedness for the construction of the repository.

Based on the experience gained during the development of PHARE Project RO 5812.06.04 "Characterization of radioactive waste at Cernavoda NPP", in 2007 Cernavoda NPP started the waste characterisation of the radioactive waste stored in their storage facility and they expect that the work will be completed by the end of 2008. This information will be used by ANDRAD to improve the design both of the repository and of the treatment & conditioning plant and the safety assessments.

ANDRAD does not have in its staff specialized experts for evaluation and development of treatment and conditioning technologies as well as any employee specially educated or trained to assess or develop design for radioactive waste treatment and conditioning facility. ANDRAD also has limited human resources, mainly for daily operational and administrative duties, so assistance of external experts is highly needed in order to implement in safe manner the Programme on the development of a LILW near surface disposal facility.

This project should also take into account the previous projects as are mentioned in following section 3.2.

This request is launched under the Transition Facility provisions, by taking into account the fact that radioactive waste management activities are not eligible under the Structural Funds Regulations 2007-2013, being not included in any priority axis.

3.2. Linked activities.

- PHARE Project: PH4.10/94 "Technical Basis and Methodological Approach for Waste Acceptance Criteria" The purpose of the report was to develop preliminary Romanian waste acceptance criteria (WAC) for disposal of L/ILW waste to the planned near surface repository (Saligny site) designed for the waste produced primarily by Cernavoda NPP, for fuel cycle waste and possibly other radwaste arising in Romania.

- PHARE Project RO 5812.06.02 “Technical assistance to Romania in establishing the activity of the National Agency for Radioactive Waste (ANDRAD)” - the project involved the provision of technical assistance to ANDRAD staff on a wide range of topics together with providing advice to the Government of Romania on the overall infrastructure for management of waste, including the arrangements for financing of future liabilities. In task 6 (National Strategy for Radioactive Waste) of this project, it is mentioned that “The waste treatment and conditioning facilities at Cernavoda must be available before the L/ILW disposal facility is operational. It is also necessary to have all power plant wastes well characterised in order to provide information to the waste repository safety case. This requirement has cost implications. Any decision to postpone decisions could have serious consequences for the operation of waste management and disposal in Romania”.
- PHARE Project RO 5812.06.04 “Characterisation of radioactive waste at Cernavoda NPP”. The overall objective of this project was to improve the current strategy for the management of radioactive waste management at Cernavoda NPP with reliable methodologies for radioactive waste characterization according to good practices in European Union. In task 7 “Preliminary Assessment of Waste Categories based on disposal route” of this project, the **recommendations** provided by the experts, involved in the development of mentioned project are:
 - The results regarding the characteristics of radioactive waste arising at operation of Cernavoda NPP obtained during this project have not identified any potential influence on the strategies as they have been proposed or that are under preparation and discussion;
 - The implications of super absorbent polymers for long-term storage and disposal of contaminated oils must be considered, given the low compressive strength of the product and potential damage to the polymer caused by radiation. The implications of such features for disposal options need to be investigated prior to a final decision regarding management of this waste stream;
 - As incineration is the established best practice for CANDU-type wastes, its application to the combustible Cernavoda waste streams, including ion exchange resins, is recommended. An assessment is needed comparing the available incineration options (but excluding incineration in another country), namely: use of off-site incinerators in Romania; or construction of a new incinerator at Cernavoda, specifically designed to accommodate the combustible waste streams. Any assessment of incineration options must include consideration of the potential future waste arisings of Units 2, 3 and 4;
 - “Technical review of the Romanian programme on the development of the L/ILW near surface disposal facility” developed in the framework of TC project ROM/3/004 ‘Sustainability of national nuclear waste management’, IAEA, 2007.

3.3. Results

The results envisaged to be obtained within the project are oriented as follows, in accordance with the components identified below:

Result 1: a comprehensive report containing recommended treatment and conditioning technologies consistent with international best practices of all radioactive waste to be disposed of at Saligny LILW repository in accordance with the national strategy;

Result 2: a comprehensive report containing the recommended site (including justifications) and the design of the radioactive waste treatment and conditioning facility;

Result 3: a comprehensive report containing the safety case and supporting safety assessment and operational limits and conditions including waste acceptance criteria.

3.4. Activities:

Technical Assistance Contract.

Activity 1: Establish the treatment and conditioning technologies for all radioactive waste to be disposed of at Saligny repository;

As input data the Consultant should use at least the reports mentioned at "Linked activities".

The main activities to be undertaken by the Consultant should be:

- Gain a thorough understanding of the technical situation based on existing technical reports concerning treatment and conditioning technologies for radioactive waste that will be disposed of at Saligny repository, including applicable standards, norms, and regulations;
- Detailed review of all radioactive waste streams to be disposed of at Saligny repository in accordance with the national strategy;
- Comprehensive review of treatment and conditioning technologies existing in Romania and EU which could be implemented for the new treatment and conditioning facility, considering at least the following: waste characteristics, the capacity of Saligny LILW repository, advantages and disadvantages of using a particular technology, scale of technology application, maturity of technology, robustness of technology, flexibility of technology, ease of engineering, economics and safety;
- Prepare a draft task report containing feasible treatment and conditioning technologies of all radioactive waste to be disposed of at Saligny LILW repository in accordance with the Romanian strategy along with a technical description of recommended technologies, descriptions of input and output streams illustrated by process flow diagrams where possible, potential risks and benefits for people and environment, technology status and associated costs and available vendors that provide a service with that technology. The amounts of primary and secondary waste generated by the different treatment options and the associated occupational dose exposures will be evaluated. Cost-benefit analysis of recommended treatment and conditioning technologies will be included in the draft report.

The output of this task shall be a comprehensive report containing recommended treatment and conditioning technologies consistent with international best practices of all radioactive waste to be disposed of at Saligny LILW repository in accordance with the national strategy.

The estimated cost for this activity is estimated by 398.867 Euro

Activity 2: Draw up a report containing the design of the radioactive waste treatment and conditioning facility.

At the beginning of this activity, the Contractor shall analyze the possibility to site the radioactive waste treatment and conditioning facility on two potential sites, namely: on Cernavoda NPP site or on Saligny site, using as input data the existing technical report related to the characterisation of the sites. The justification of the selected location shall include potential risks and benefits for people and environment and a cost-benefit analysis.

The Consultant will draw up a report containing the design of the radioactive waste treatment and conditioning facility. As input data, the Consultant should use the report resulted from the development of activity 1. The facility shall be designed to provide reasonable assurance of safety during anticipated operational period and its decommissioning. The design of the facility shall be prepared taking into account applicable standards, norms, and regulations governing the design activities in Romania. The report shall include the need for operational maintenance, testing, examination and inspection of the facility.

The output of this task will be a comprehensive report containing the recommended site (including justifications) and the design of the radioactive waste treatment and conditioning facility.

The estimated cost for this activity is estimated by 309.817 Euro

Activity 3: Derivation of operational limits and conditions including waste acceptance criteria

As input data, the Consultant will use the reports resulted from the development of activities 1 and 2. The Consultant will develop a safety case and supporting safety assessment which:

- shall be sufficient detailed and comprehensive to justify the facility design;
- shall be documented at a level of detail and quality sufficient to demonstrate the safety;
- shall be sufficient detailed and comprehensive to provide necessary technical input data to support authorization request.

The Contractor shall elaborate the content of the safety assessment which shall be endorsed by ANDRAD and CNCAN. The Consultant will derive the operational limits and conditions including waste acceptance criteria ensuring that the facility will be operated in accordance with assumption documented in the safety case. In order to perform this activity, the Consultant will use his software.

The output of this task will be a report containing the safety case and supporting safety assessment and operational limits and conditions including waste acceptance criteria.

The estimated cost for this activity is estimated by 299.317 Euro

NOTE:

1. The Consultant shall perform the above mentioned activities in close cooperation with ANDRAD staff having responsibilities in this project,
2. The results of the above mentioned activities shall be disseminated in dedicated workshops with participation of the main Romanian institutions with responsibilities in the nuclear field. Costs for the organization of workshops (rental of meeting room, equipment, including the coffee breaks and catering and the support materials used) will be borne by ANDRAD.

Annex concerning the proposed qualifications of the necessary experts

Key expert 1/Team Leader -International expert

General professional experience	<ul style="list-style-type: none"> • Demonstrated project management experience in similar projects either as representative of a waste treatment and conditioning facility operator, that applied for a license from regulatory body or a technical support organization for a waste treatment and conditioning facility operator or regulatory body that licensed such a facility (at least 5 years) • Demonstrated capacity to co-ordinate the contribution of several organisations and multidisciplinary team in the implementation of large and complex projects in radioactive waste management in EU and Central and Eastern Europe • Good communication skills
Specific professional Experience	<ul style="list-style-type: none"> • A minimum of 15 years work experience in radioactive waste management • Experience of minimum 10 years in dealing with a safety case and safety assessments for a waste treatment and conditioning facilities; • Good knowledge of Quality Assurance in radioactive waste management

Key expert 2-International expert

General professional experience	<ul style="list-style-type: none"> • At least 15 years in the field of radioactive waste technologies. • Experience of at least 3 years in the field of radioactive waste field in similar projects in EU and/or Central Europe and Eastern Countries
Specific professional Experience	<ul style="list-style-type: none"> • Experience of minimum 10 years in treatment and conditioning technologies for radioactive waste • Demonstrated experience in development of waste inventory for a near surface repository • Good knowledge in CANDU reactors type waste

Key expert 3-International expert

General professional experience	<ul style="list-style-type: none"> • At least 10 years in the field of radioactive waste management. • Experience of at least 3 years in the field of radioactive waste field in similar projects in EU and/or Central Europe and Eastern Countries
Specific professional Experience	<ul style="list-style-type: none"> • Minimum 5 years experience regarding technologies and techniques for LILW treatment, conditioning and storage • Demonstrated experience in development in design of waste treatment and conditioning facilities • Good knowledge in CANDU reactors type waste

Key expert 4-International expert

General professional experience	<ul style="list-style-type: none"> • At least 10 years in the field of radioactive waste management. • Experience of at least 3 years in the field of radioactive waste field in similar projects in EU and/or Central Europe and Eastern Countries
Specific professional Experience	<ul style="list-style-type: none"> • Minimum 5 years experience regarding the safety assessment of the radioactive waste facilities • Experience in reviewing and/or coordinating safety assessments for nuclear facilities • Experience in applying EU directives on environmental protection

Other experts:

General professional experience	<ul style="list-style-type: none"> • At least 10 years in the field of radioactive waste management. • Experience of at least 3 years in the field of radioactive waste field in similar projects in EU and/or Central Europe and Eastern Countries
Specific professional Experience	<ul style="list-style-type: none"> • Minimum 5 years experience regarding the safety assessment of the radioactive waste facilities • Experience in reviewing and/or coordinating safety assessments for nuclear facilities • Experience in applying EU directives on environmental protection

3.5 Lessons learned

See Annex No.5

4. Institutional Framework

LB

In Romania the coordination of radioactive waste management processes and the legal responsibilities concerning the disposal of spent fuel and radioactive waste have been assigned to ANDRAD since 2006.

As national competent authority with specific responsibilities in these areas, ANDRAD is empowered to elaborate and periodically review the National Strategy concerning the management of radioactive waste and to implement the activities established by the strategy, within its legal competences. The key partners involved in the implementation of this project are: CNCAN as regulatory authority, the major radioactive waste producers in Romania (i.e. SNN-Nuclearelectrica, ICN-Institute for Nuclear Research Pitesti, IFIN"HH"-National Institute for Physics and Nuclear Engineering) and SITON-Center for Design of Nuclear Objectives.

5. Detailed Budget

MEuro	Transition Facility support			Co-financing			Total cost
	Investment	Institution Building	Total Transition Facility (=I+IB)	National Public Funds (*)	National Public Funds (**)	Total co-financing of the project	TF plus cofinancing
<i>Contract-Technical Assistance</i>	0.000	1.000	1.000	0.000	0.008**	0.008	1.008
Total	0.000	1.000	1.000	0.000	0.008**	0.008	1.008

(**) joint co financing

VAT is not an eligible expenditure under both the Transition Facility and national cofinancing funds indicated in the above budget table. Where contracts are subject to VAT due to provisions of national legislation, these funds have to be provided from national resource outside and in addition to the amounts indicated in the budget table.

6. Implementation Arrangements

6.1. Implementing Agency

The project will be implemented in accordance with the national rules governing the public acquisition. The Central Financing and Contracting Unit (CFCU) within the Ministry of Economy and Finance will be the Agency responsible for implementing the project

Contact person within CFCU:

Ms. Carmen Rosu

Director

Mircea Voda Avenue no. 44, Entrance B, District 3, Bucharest, Romania

Tel: +4021326 55 55

Fax: +4021326 87 09

Implementing Authority:

The Implementing Authority (IA) is the Ministry of Economy and Finance.

Ms. Steluta Goanta

Director

Ministry of Economy and Finance

Managing Authority for the Sectorial Operational Programme "Increase of Economic Competitiveness"

152, Calea Victoriei, Sector 1, Bucharest

Fax: (4021) 202.52.71

Phone: (4021) 202.52.75

The Main Beneficiary of the project will be the ANDRAD-National Agency for Radioactive Waste as the national competent authority in the field, represented by:

Dr. Gheorghe Ionita
President
ANDRAD-National Agency for Radioactive Waste
1, Str.Campului, Mioveni, 115400, Arges, Romania
Phone: (40 248) 291200
Fax: (40 248) 291400
www.andrad.ro

6.2. Twinning

N/A.

6.3. Non-standard aspects

The national procurement rules on public acquisition shall be strictly followed.

6.4. Contracts

Technical assistance, 1.008 MEuro.

7. Implementation Schedule

7.1. Start of tendering/call for proposals

January 2007

7.2. Start of project activity

July 2008

7.3. Project completion

November 2009

8. Sustainability

The results of the project are integral parts of the development programme of Saligny LILW Repository, supporting ANDRAD to gain the public confidence concerning the safe radioactive waste management in Romania.

The resources in terms of staff and budget to secure the sustainability of the project after their completion will be ensured.

9. Conditionality and sequencing

The proposed project represents a logical and important step in implementing the time schedule regarding the development of Saligny LILW Repository. This project is a logic continuation of PHARE 2004 Project "Support to ANDRAD to extend and accelerate development of a new

national L/ILW disposal". The development of a new treatment and conditioning facility represents conditionality for implementation of LILW management programme in Romania.

LIST OF ANNEXES

- Annex No.1** Log frame - Transition Facility programme for Romania
- Annex No.2** Detailed time implementation chart
- Annex No.3a** Cumulative contracting schedule
- Annex No.3b** Cumulative disbursement schedule
- Annex No.4** Romanian legislation in nuclear field
- Annex No.5** Lessons learnt from previous years
- Annex concerning the proposed qualifications of the necessary experts**

Log frame
Transition Facility programme for Romania

LOGFRAME PLANNING MATRIX FOR Project Fiche				
<u>Title of the project</u> Support to ANDRAD to develop a new radioactive waste treatment and conditioning facility		Programme name and number 2007/19343.06.05		Transition facility
		Contracting period expires: 15 12 2009		Disbursement period expires: 15 12 2010
		Total budget : 1.008 MEURO		TF budget : 1.000 MEURO
Overall objective	Relates to Copehagen criterion and aquis chapter <ul style="list-style-type: none">- Council Conclusions on Nuclear Safety and Safe Management of Spent Nuclear Fuel and Radioactive Waste (8784/04/07 ATO 63);COUNCIL OF THE EUROPEAN UNION, Working Party on Nuclear Safety, Subgroup 1, Safety of Nuclear Installations, Final Report;- COUNCIL OF THE EUROPEAN UNION, Working Party on Nuclear Safety, Subgroup 2, Safety of the Management of Spent Fuel and Radioactive Waste, Final Report;- COUNCIL OF THE EUROPEAN UNION, Working Party on Nuclear Safety, Subgroup 3, Financial resources for decommissioning of nuclear installations, waste management and spent fuel disposal, Final Report;	List of other projects with same objective <ul style="list-style-type: none">- PHARE Project: PH4.10/94 "Technical Basis and Methodological Approach for Waste Acceptance Criteria";- PHARE Project RO 5812.06.02 "Technical assistance to Romania in establishing the activity of the National Agency for Radioactive Waste (ANDRAD)";- PHARE Project RO 5812.06.04 "Characterisation of radioactive waste at Cernavoda NPP".The project RO 016-815.02.04 - "Support to ANDRAD to extend and accelerate development of a new national L/ILW disposal"		
Project purpose To develop a new waste treatment and conditioning facility in Romania for processing of all radioactive waste that will be disposed of at Saligny LILW repository in accordance with the national strategy.	Objectively verifiable indicators At least 3 technical reports, as mentioned at point 3.3, "Results", completed and accepted by ANDRAD;	Sources of Verification statement of the main Romanian stakeholders involved in the management of radioactive waste concerning recommended treatment and conditioning technologies; Statistics Regular reports		Assumptions - A preliminary inventory of characterization campaign of radioactive waste owned by Cernavoda NPP will be available when the project will start.
Results	Objectively verifiable indicators	Sources of Verification		Assumptions

43

<p>Result 1: a comprehensive report containing recommended treatment and conditioning technologies consistent with international best practices of all radioactive waste to be disposed of at Saligny LILW repository in accordance with the national strategy;</p> <p>Result 2: a comprehensive report containing the recommended site (including justifications) and the design of the radioactive waste treatment and conditioning facility;</p> <p>Result 3: a comprehensive report containing the safety case and supporting safety assessment and operational limits and conditions including waste acceptance criteria.</p> <p>Activities</p> <p>Activity 1: Establish the treatment and conditioning technologies for all radioactive waste to be disposed of at Saligny repository; As input data the Consultant should use at least the reports mentioned at "Linked activities".</p> <p>The main activities to be undertaken by the Consultant should be:</p> <ul style="list-style-type: none"> • Gain a thorough understanding of the technical situation based on existing technical reports concerning treatment and conditioning technologies for radioactive waste that will be disposed of at Saligny repository, including applicable standards, norms, and regulations; • Detailed review of all radioactive waste streams to be disposed of at Saligny repository in accordance with the national strategy; • Comprehensive review of treatment and 	<p>At least 3 technical reports, as mentioned at point 3.3., completed and accepted by ANDRAD</p> <p>By the end of the project, the technical design of radioactive waste treatment center and waste requirements and acceptance criteria shall meet all regulatory requirements</p>	<p>- statement of the main Romanian stakeholders involved in the management of radioactive waste concerning recommended treatment and conditioning technologies;</p> <p>statement of the Romanian regulatory body on: a) the design of radioactive waste treatment and conditioning facility, b) the safety case and supporting safety assessment and operational limits and conditions including waste acceptance criteria.</p> <p>Statistics</p> <p>Regular reports</p>	<p>- A preliminary inventory of characterization campaign of radioactive waste owned by Cernavoda NPP will be available when the project will start.</p>
<p>Means</p> <p>Technical assistance</p>			<p>Assumptions</p> <p>A preliminary inventory of characterization campaign of radioactive waste owned by Cernavoda NPP will be available when the project will start.</p>

conditioning technologies existing in Romania and EU which could be implemented for the new treatment and conditioning facility, considering at least the following: waste characteristics, the capacity of Saligny LILW repository, advantages and disadvantages of using a particular technology, scale of technology application, maturity of technology, robustness of technology, flexibility of technology, easy of engineering, economics and safety;

- Prepare a draft task report containing feasible treatment and conditioning technologies of all radioactive waste to be disposed of at Saligny LILW repository in accordance with the Romanian strategy along with a technical description of recommended technologies, descriptions of input and output streams illustrated by process flow diagrams where possible, potential risks and benefits for people and environment, technology status and associated costs and available vendors that provide a service with that technology. The amounts of primary and secondary waste generated by the different treatment options and the associated occupational dose exposures will be evaluated. Cost-benefit analysis of recommended treatment and conditioning technologies will be included in the draft report.

The output of this task shall be a comprehensive report containing recommended treatment and conditioning technologies consistent with international best practices of all radioactive waste to be disposed of at Saligny LILW repository in accordance with the national strategy.

<p>Activity 2: Draw up a report containing the design of the radioactive waste treatment and conditioning facility.</p> <p>At the beginning of this activity, the Contractor shall analyze the possibility to site the radioactive waste treatment and conditioning facility on two potential sites, namely: on Cernavoda NPP site or on Saligny site, using as input data the existing technical report related to the characterisation of the sites. The justification of the selected location shall include potential risks and benefits for people and environment and a cost-benefit analysis.</p> <p>The Consultant will draw up a report containing the design of the radioactive waste treatment and conditioning facility. As input data, the Consultant should use the report resulted from the development of activity 1. The facility shall be designed to provide reasonable assurance of safety during anticipated operational period and its decommissioning. The design of the facility shall be prepared taking into account applicable standards, norms, and regulations governing the design activities in Romania. The report shall include the need for operational maintenance, testing, examination and inspection of the facility.</p> <p>The output of this task will be a comprehensive report containing the recommended site (including justifications) and the design of the radioactive waste treatment and conditioning facility.</p> <p>Activity 3: Derivation of operational limits and conditions including waste acceptance criteria</p> <p>As input data, the Consultant will use the reports resulted from the development of activities 1 and 2. The Consultant will develop a safety case and supporting safety assessment which:</p> <ul style="list-style-type: none"> • shall be sufficient detailed and 	
--	--

LB

<p>comprehensive to justify the facility design;</p> <ul style="list-style-type: none"> • shall be documented at a level of detail and quality sufficient to demonstrate the safety; • shall be sufficient detailed and comprehensive to provide necessary technical input data to support authorization request. <p>The Contractor shall elaborate the content of the safety assessment which shall be endorsed by ANDRAD and CNCAN. The Consultant will derive the operational limits and conditions including waste acceptance criteria ensuring that the facility will be operated in accordance with assumption documented in the safety case. In order to perform this activity, the Consultant will use his software.</p> <p>The output of this task will be a report containing the safety case and supporting safety assessment and operational limits and conditions including waste acceptance criteria.</p>			
---	--	--	--

Annex 2 - Detailed time implementation chart

	2007					2008					2009					2010											
calendar months	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J
Technical assistance contract				D	D	D	D	D	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C	C
	D = Design C = Contracting I = Implementation																										

ig

Annex 3

Annex 3a - Cumulative contracting schedule

	31/03/07	30/06/07	30/09/07	31/12/07	31/03/08	30/06/08	30/09/08	31/12/08	31/03/09	30/06/09	30/09/09	31/12/09
CONTRACTED Technical assistance						1.00						
NB: All contracting should normally be completed within 6-12 months and must be completed within 24 months of signature of the FA.												

Annex 3b - Cumulative disbursement schedule

	31/03/08	30/06/08	30/09/08	31/12/08	31/03/09	30/06/09	30/09/09	31/12/09	31/03/01	30/06/01	30/09/01	30/09/01
DISBURSEMENT Technical assistance			0.24	0.48	0.48	0.72	0.96	1.00	0	0	0	0
NB: All disbursements must be completed within 36 months of signature of the FA.												

LB

Annex 4 – Romanian legislation in nuclear field

- The National Medium and Long Term Strategy concerning Careful Management of the Spent Nuclear Fuel and of The Radioactive Wastes, including Final Disposal and Decommissioning of the Nuclear and Radiological Facilities elaborated by the National Agency for Radioactive Waste – ANDRAD and approved by the Nuclear Agency – AN by Order 844/ 09.08.2004.
- Law 111/1996 regarding safe deployment of the nuclear activities:
- Law No. 43/1995 for the ratification of the Convention regarding nuclear safety adopted in Wien on the 17th of June 1994 and published in the Official Gazette of Romania No. 104/29.05.1995.
- Law 105/1999 which ratifies the common Convention regarding the safe management of the spent fuel and the safe management of the radioactive wastes, adopted in Vienna on the 5th of September 1997 and published in the Official Gazette of Romania No. 283/21.06.1999
- Governmental Decree No. 11/30.01.2003 regarding the management of the spent fuel and the radioactive wastes, including final disposal, published in the Official Gazette of Romania No. 61/01.02.2003, modified and later completed by the Law No. 320/08.07.2003, the Decree No. 31/19.07.2006 and Law 26/2007;
- Fundamental Norms for the safe management of the radioactive wastes (NDR-01) approved by the CNCAN President's Decree No. 56/25.03.2004 and published in the Official Gazette of Romania No. 393/04.05.2004.
- Norms regarding surface disposal of the radioactive wastes (NDR-05) approved by the CNCAN President's Decree No. 400/13.12.2005 and published in the Official Gazette of Romania, Part I No. 345/17.04.2006.
- Fundamental Norms on Radiological Safety (NSR-01) approved by CNCAN Decree No. 14/24.01.2000 and published in the Official Gazette of Romania No. 404 bis/29.08.2000
- Governmental Decree No. 7/30.01.2003 regarding the exclusively peaceful usage of nuclear energy approved by Law No. 321/08.07.2003, modified and ratified by Law No. 57/17.03.2006
- Norms regarding the classification of radioactive wastes (NDR-03) approved by the CNCAN President's Decree No. 156/14.06.2005 published in the Official Gazette of Romania No. 571/04.07.2005
- Norms regarding the authorization of executing constructions with nuclear specific (NCN-01) approved by the CNCAN President's Decree No. 407/21.12.2005 published in the Official Gazette of Romania, Part I No. 193/01.03.2006
- Norms regarding the release of radioactive effluents into the environment (NDR-04) approved by the CNCAN President's Decree No. 221/25.08.2005 published in the Official Gazette of Romania No. 820/09.09.2005
- Norms regarding general requests for the quality management systems applied to the designing, functioning and decommissioning of the nuclear installations (NMC-02) approved by CNCAN Decree No. 66/30.05.2003 published in the Official Gazette of Romania No. 681/26.09.2003 and modified by CNCAN Decree No. 286/27.08.2004 published in the Official Gazette of Romania, Part I, No. 874/24.09.2004
- Norms concerning the monitoring of the environment radioactivity in the vicinity of a nuclear or Radiological installation approved by CNCAN Decree No. 275/26.09.2005 published in the Official Gazette of Romania No. 923/17.10.2005
- Norms concerning the monitoring of the radioactive emissions from the nuclear and Radiological installations approved by CNCAN Decree No. 276/26.09.2005 and published in the Official Gazette of Romania No. 923/17.10.2005
- Norms of Radiological safety regarding the operational radioprotection of the external workers (NSR-02) approved by CNCAN Decree No. 353/20.08.2001 and published in the Official Gazette of Romania No. 764/30.11.2001
- Norms of Radiological safety – procedures of external companies acceptance (NSR-09) approved of by the CNCAN Decree No. 228/16.12.2002 and published in the Official Gazette of Romania, Part I, No. 50/29.01.2003
- Norms of physical protection in the nuclear field (NPF-01) approved by CNCAN Decree No. 382/24.10.2001 and published in the Official Gazette of Romania No. 766 bis/30.11.2001
- Norms concerning the radioactive materials transportation approved by CNCAN Decree No. 357/21.11.2005 and published in the Official Gazette of Romania No. 1.152 bis/20.12.2005.

ig

LB

Annex 5 - Lessons learnt from previous years

<i>Identified Gaps or Recommended courses of intervention</i>	<i>Action for covering the Gap or implement the recommended intervention</i>	<i>Phare Programming (Project Reference)</i>	<i>Transition Facility</i>
<p>"The waste treatment and conditioning facilities at Cernavoda must be available before the L/ILW disposal facility is operational. It is also necessary to have all power plant wastes well characterised in order to provide information to the waste repository safety case. This requirement has cost implications. Any decision to postpone decisions could have serious consequences for the operation of waste management and disposal in Romania"</p> <p>- PHARE Project RO 5812.06.02</p> <p><i>"Technical assistance to Romania in establishing the activity of the National Agency for Radioactive Waste (ANDRAD)"</i></p>	<p>Cernavoda NPP started to characterize their radioactive waste. A preliminary radioactive waste inventory should be available in 2008;</p>		<p>Project to be financed under TF Programme: "Support to ANDRAD to develop a new radioactive waste treatment and conditioning facility" - Technical assistance</p>
<p>Following the recommendations issued by EU experts, contained in Appendix C "Recommendations Regarding the Role and Responsibilities of ANDRAD of Concern" of the Final Report of the PHARE Project RO 5812.06.02</p> <p><i>"Technical assistance to Romania in establishing the activity of the National Agency for Radioactive Waste (ANDRAD)"</i>, having as Beneficiary the National Agency for Radioactive Waste (ANDRAD), the following comments were provided by the Consortium:</p>	<p>The ANDRAD responsibilities were recently modified (Law 26/2007). The Government Decision (GD) concerning the fee that will be paid by waste producers to the funds earmarked for management of radioactive waste and decommissioning of nuclear installations is under development. The GD will be published this year.</p>		

LB

5

<p>Issue no. 4</p> <p>The taking over by ANDRAD of responsibility of the transport, treatment, conditioning and intermediary storage of the low and intermediate level radioactive waste generated by operating the CANDU units from Cernavoda</p> <p>In compliance with the viewpoints from the meeting at MEF on 05.06.2006, regarding the issues of decommissioning fund, SC Nuclearelectrica SA considers that the Low And Intermediate Level Waste Final Repository (DFDSMA) must include also the Radioactive Waste Treatment Plant, the capital costs of building this facility coming from the radioactive waste management fund (administred by ANDRAD), to be set up from the contributions of the waste producers. ANDRAD will be responsible for the operation of the DFDSMA, including the Radioactive Waste Treatment Plant for disposal.</p> <p>Consortium Comment - The Consortium agrees with the approach adopted by the meeting attendees, which is in line with its own proposals.</p>				
--	--	--	--	--

LB

Budget

	Working day/ activity				
	Activity 1	Activity 2	Activity 3	Total	Allocati on Euro per day
Key expert 1 - Team Leader	100	100	100	300	950
Key expert 2	200	50	50	300	850
Key expert 3	25	100	50	175	850
Key expert 4	18	50	100	168	850
Other experts:					
3 Short term senior	45	20	15	80	700
Incidental Expenditure					
co-financing (
Total					8,450
					1.008.000

Activity 1 398.867 €
 Activity 2 309.817, €
 Activity 3 299.317 €
 1.008.000 €
 1.008.000 €

co-financing
 rental of meeting room for 3 workshops (including equipment)
 coffee breaks, catering and support materials used
TOTAL

€ 3,950.00
 € 4,500.00
 € 8,450.00

