PHARE 2003
STANDARD SUMMARY PROJECT FICHE

1. Basic Information PHARE 2003/005-551.04.11

1.1 Title The implementation of an adequate environmental radioactivity monitoring and reporting system

1.2 Sector Environment (EN)
1.3 Location Romania

2. Objectives

2.4 Overall Objective

- implementation of an adequate environmental radioactivity monitoring and reporting system, compatible and harmonised with EU regulations

2.4 Project purpose

- improving the technical capacity of the existing National Environmental Radioactivity Surveillance Network (NERSN) and of the National Reference Laboratory (ERL) to fulfil the national and EU requirements related to radiological surveillance, both under routine and emergency conditions

- providing adequate training in order to ensure the expertise required to carry out the activities related to the implementation of the radioactivity monitoring and reporting system

2.4 Accession Partnership and NPAA priority

Accession Partnership

- Strengthening the enforcement capacity of the Environmental Protection Inspectorates (EPIs) at local level
- Compliance with Euratom requirements and procedures

NPAA priority

- Implementation of the Council Directive 96/29/Euratom which provides basic safety standards for the protection of the health of workers and general public against the dangers arising from ionising radiation
- Acceptance and compliance with terms and requirements of the Euratom Treaty
- Implementation of the Commission Recommendation 2000/473/Euratom (EURDEP) on the application of Article 36 of the Euratom Treaty concerning the monitoring of radioactivity levels in the environment for the purpose of assessing the exposure of the population as a whole
- Implementation of the Council Decision 87/600/Euratom on Community arrangements for early exchange of information in the event of a radiological emergency notification (ECURIE)

3 Description

3.1 Background and justification

The Romanian environmental legislation, particularly the Environmental Protection Law, and the Development Strategy of Romania in the Short, Medium and Long Term, foresee the realisation of an integrated monitoring system, including the radioactivity aspects of environment within the general context, based on the main principles concerning health, safety and environmental protection.

These aspects should be taken into account for the complete implementation of EU legislation in Romania.

The current environmental radioactivity monitoring and assessment structure address, to some extent, the early warning issues related to transboundary sources, without fully covering the assessment of local sources of radioactive pollution. Its improvement and strengthening will offer a solid base also for the future implementation of all EU specific Directives.

General organisation

The central authority for environmental protection is the Ministry of Waters and Environmental Protection (MoWEP) whose structure was established through the Governmental Decision no 17/2001. The MoWEP is the specialised body of the central public administration, subordinated to the Government. MoWEP develops the policy in waters and environmental protection field, and elaborates the strategy and the specific regulations for development and harmonisation of these activities within the general policy of the Government.

The MoWEP is a component of the national radiation protection system and constitutes the off-site authority. Within its legal capacities, the MoWEP controls and imposes measures for the radiological protection of the environment with the aim of protection of human health.

The Environmental Protection Law no. 137/1995, republished in 2000, gives powers to the MoWEP for licensing (permitting) practices and activities resulting in release of radioactivity to the environment. The environmental permit issued by the MoWEP is based on an environmental impact assessment (EIA) and several prerequisite licences, issued by other authorities, such as:

- National Commission for Nuclear Activities Control (CNCAN) with respect to use of radioactive sources and materials
- Ministry of Health and Family, with respect to health surveillance of professionally exposed individuals
- Ministry of Labour and Social Solidarity, with respect to working conditions in nuclear activities and conventional safety

According to article no. 33 of the Environmental Protection Law no. 137/1995, republished in 2000, MoWEP as the central authority for environmental protection is responsible for monitoring and surveillance of environmental radioactivity over the national territory, with the general purpose of ensuring compliance with regulations, and protecting the population and the environment from harmful exposure to radiation. According to the same article, MoWEP cooperates with the competent bodies on defence against disasters which is, for nuclear emergencies, the Central Committee for Nuclear Accident and Cosmic Objects Fall (CANCOC).

With respect to nuclear and radiological emergency planning, the MoWEP offers major inputs with regards to the review and approval of off-site emergency plans, and has legal specific responsibilities in off-site emergency planning and response.

With respect to nuclear and radiological emergency planning, the MoWEP is the national competent authority with regards to the review and approval of off-site emergency plans, and has legal authority in off-site emergency planning and response.

Links with EU legislation

Romania is a candidate country to the enlargement of the European Union (EU). Before joining the EU as a member state, Romania has to meet a number of criteria and needs to harmonise its national legislation to the European treaties (namely the Euratom treaty) and various directives. In the framework of its nuclear activities, the radiation protection of workers, general population and environment, Romanian legislation and structures must comply with the obligations and requests stipulated, namely, in the following official documents:

- **Euratom Treaty** – chapter 3, art. 30-33 and 35-38

- Council Decision **87/600/Euratom** on Community arrangements for early exchange of information in event of a radiological emergency notification (ECURIE)
- Council Directive **89/618/Euratom** on informing the general public about health protection measures to be applied and steps to be taken in the event of a radiological emergency
- Council Directive **96/29/Euratom** laying down basic safety standards for the protection of the health of workers and the general public against the dangers arising from ionising radiation
- Council Directive **98/83/CE L330/323/11/98**
- Recommendation (**2000/473/Euratom** – OJ L191/37-46 of 27/07/2000) (EURDEP) on the application of Article 36 of the Euratom Treaty concerning the monitoring of the levels of radioactivity in the environment for the purpose of assessing the exposure of the population as a whole
- Commission Recommendation (**2001/928/Euratom**) of 20 December 2001 on the protection of the public against exposure to radon in drinking water supplies

Presentation of the existing Environmental Radioactivity Surveillance Network (NERSN)

To fulfil its legal obligations, the MoWEP organises and operates, under its authority, the National Environmental Radioactivity Surveillance Network (NERSN). In line with the MoWEP responsibilities, the NERSN must respond to the following main requirements:

- to support an adequate radiological surveillance program to control and assure compliance with regulations
- to provide rapid detection and early warning
- to provide data needed in emergency management

The National Environmental Radioactivity Surveillance Network (NERSN) was set-up in the early 1960's with the aim to control the impact of the global fall-out from the nuclear weapon testing programs, as well as to meet requirements of the civil defence. With some exceptions, the present measurement and information system corresponds mostly to the technical requirements of that time.

Operating on the above principles, the importance of this radiological surveillance system has fluctuated with time, this being amplified at the occurrence of nuclear emergency events (e.g. the Chernobyl nuclear accident) and reducing in scale after a relatively short-time following the decrease of such events. Presently, the NERSN comprises 37 stations distributed over the Romanian territory (and operating under the administration of the Environmental Protection Inspectorates of each county) and a central co-ordinating laboratory in Bucharest.

The NERSN is organised under the authority of the MoWEP, through the General Commisariat of the Environmental Guard. Since 1962, the technical, scientific and methodological co-ordination has been the responsibility of the Environmental Radioactivity Laboratory (ERL) of the National Research and Development Institute for Environmental Protection - ICIM, Bucharest (that is under the co-ordination of MoWEP).

The present standard sampling and measurement programme of the network was established to respond to requirements explicitly expressed by existing legislation and according to good international practice in this field:

- to continuously monitor the environmental radioactivity over the national territory in order to characterise and provide a baseline reference of the radiological situation in the country
- to provide means for early warning to the competent authorities if any threshold levels of the background levels are exceeded
- to provide a data base of information for a quick and reliable dose assessment for the population after an accidental release of radioactivity to the environment
- to provide a database for assessment of maximum permissible contamination of key products such as milk and vegetables after an accidental release of radioactivity to the environment

Atmospheric aerosol and deposition (precipitation and suspended particulate matter), surface and drinking water, soil and vegetation are sampled, prepared and measured for gross beta activity. If the result of gross beta measurement exceeds a given limit, the sample is immediately forwarded to the ERL for detailed

analysis. Also, high-resolution low-background gamma spectrometric analyses are performed on monthly-cumulated samples at ERL.

From the network of 37 monitoring stations (laboratories), 10 provide continuous measurements of measured gross beta activity in air, while the remaining 27 stations are operating on a programme of 8-11 hours. The integration time for the atmospheric deposition is 1 day. Surface water spot samples are collected daily from the main water body located near the monitoring station. Samples of soil and vegetation are also collected once a week.

Analysis is performed by gross beta low background measurement equipment and (^{90}Sr/^{90}Y) standards are used for calibration. All measurement data are transmitted by telephone to the central laboratory (ERL) where data are validated and then reported to the responsible authorities.

The stations also perform local dose rate measurements, each of them using one detector for measuring gamma energies down to 60 keV and detecting variations within the range of 0.03 – 20 μGy in a 1-hour measuring cycle. As detectors are not equipped with appropriate interfaces for computerised data transfer or tele-transmission, data acquisition consists in hourly readings by the personnel and is limited to periods of physical presence, i.e. during the working hours.

Real-time dose rate measurements are performed only at the Bechet station directly. The system comprises 11 probes that are located on different directions from the Kozloduy power station. These probes communicate by radio-modem with the central computer located at Bechet station. The system encounters however technical problems due to the limited transmission range of the radio-modem.

Additionally, air monitors for Iodine, Tritium and Noble Gases (1 monitor per compound) are based at the Cernavoda environmental monitoring station. The monitors are designed for stationary use at the laboratory headquarters thus, covering one wind direction only. These monitors have also high detection limits (10^3 Bq/m$^{3)}$. Therefore, this equipment is not suitable for routine monitoring and would not provide reliable means for routine monitoring of discharges from nuclear powerplant.

All data produced within NERSN are sent to ERL.

Results of the immediate gross beta measurements and the daily mean for gamma dose rate in the air are reported by telephone to ERL, where data is checked and validated prior to transmission of reports to the MoWEP and other governmental organisations. The other data of delayed measurements, Radon and Thoron results, and meteorological parameters) are compiled in a monthly report prepared by the monitoring stations and send by mail to ERL.

The resulting environmental radioactivity database is used by ERL to establish an overview on the state of the environmental radiological situation and forecast its development.

Justification for improvement of NERSN

In recent years, a number of evaluations of NERSN have been carried out by several expert missions, e.g.:

- IAEA experts mission (IAEA report no. RU-5915/1996, RU-4758/1994, RU-4512/1994, RU-3514/1992, ROM/0/010-1/1991).
- PHARE 1993 (Master Plan for the National Environment Monitoring System which provides a framework for the future developments of monitoring in Romania).
- ECHO, 1995 (“Needs Assessment Study” – investigation of overall situation in emergency preparedness and in environmental surveillance in eastern Europe).
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The overall conclusion of these studies/missions revealed that, although with respect to detection capability, the overall performance of the environmental radiological surveillance system is considered good, **the existent measurement equipment and information system, are not sufficient to assure early detection and notification. Moreover, the gross beta measurements performed in the network (which are of a qualitative or semi-quantitative nature) are of very limited value in case of an emergency when doses**

have to be estimated. Also, the technical capabilities are not sufficient to achieve full compliance with environmental regulations.

Moreover, from the technical and organisational point of view, the complexity of the present data flow from the monitoring stations to the central laboratory is very high, requiring intensive manual interaction, thus having a high risk for malfunction in an emergency situation.
With the development of nuclear energetic and associated industries in the region (uranium mining and milling), and existence of nuclear facilities in the neighbouring countries, there is a strong need for an adequate national environmental radiation monitoring and information system, to:

- operate and provide support for enforcement activities to assure compliance with regulations
- operate and provide rapid detection followed by prompt, consistent and comprehensive support for off-site emergency management at local, national and trans-national levels at all times following an occurrence in increase levels of radiation in the environment

Presentation of the Environmental Radioactivity Laboratory (ERL) of the National Research and Development Institute for Environmental Protection - ICIM, Bucharest

As mentioned previously, the scientific and methodological co-ordination of NERSN is performed by the Environmental Radioactivity Laboratory (ERL), which forms part of the National Research and Development Institute for Environmental Protection – ICIM, Bucharest.

The National Research and Development Institute for Environmental Protection – ICIM, Bucharest, is co-ordinated by the MoWEP and serves as technical and scientific support institution for the MoWEP.

Through the Governmental Decision no. 337/1999, several laboratories that form part of the ICIM were established as national reference laboratories for different types of measurements on environmental samples (e.g. the ERL is the national reference laboratory for measurement of radioactivity in environmental samples).

As the national reference laboratory for measurement of radioactivity in the environment, ERL acts as a reference laboratory for the environmental radioactivity network, and is responsible for quality of data and regular reporting to the MoWEP (the General Commissariat of Environmental Guard and the National Commission for Nuclear Activities Control), as well as to other authorities (the Ministry of Interior and the Ministry of Defence). However, such reporting, especially to the Ministry of Interior and CNCI, has to be improved as it is currently accomplished through regular e-mail which is not reliable for warning in case of emergencies. ERL is responsible for the design and periodical revision of sampling, sample preparation and sample measurement procedures and methodologies, as well as for training of NERSN staff.

Furthermore, ERL has the responsibility in case of emergencies, of co-ordinating the Monitoring and Dose Assessment Sub-Group within the Experts Group of the Central Committee for Nuclear Accidents and Cosmic Falling Objects (CCANCOC).

ERL is located at the headquarters of ICIM in Bucharest, and the laboratory facilities comprise:

- 3 radiochemistry laboratories (having a total surface of 110 m^2) equipped each with fume hood, analytical balance, acid-base storage cabinets and water distillator
- 1 low-level counting room (having a surface of 32 m^2)
- office spaces (having a total surface of 87 m^2)
- 1 emergency evaluation centre

ERL has a staff of about 15, of which 12 are employed on permanent basis: including 7 Physicists, 3 Radiochemists and 2 lab technicians. The professional staff includes: 2 PhD in Physicists, 2 PhD prep. in Radiochemistry, 1 MSc in Physics and 1 MSc in Radiochemistry.
The technical and scientific capabilities of ERL include:

- high resolution gamma spectrometry
- alpha spectrometry
- liquid scintillation analyses
- radiochemical separation (e.g. Plutonium, Americium, Strontium, Polonium)

- dispersion and dose prediction

ERL also has a mobile unit for intervention in emergency (having low volume air sampler -4m^3/h-, GPS, portable meteorological station and portable dosimeter) that needs to be complete with adequate equipment.

3.2 Linked activities

The Phare 2000 Programme includes, under the Project Preparation Facility (PPF), some technical assistance provided to prepare the present project, including the elaboration of the Terms of Reference (ToRs). This activity started in early 2002 and was completed in October, 2002.

A related EU-PHARE 1999 Multi-Country Project is under implementation by the MoWEP and the Ministry of Interior. The overall objective of this project is to increase the capability of Romania to respond to any potential nuclear emergency by implementing an environmental radioactivity monitoring system in the Cernavoda NPP area and the Romanian EPZ of the Bulgarian Kozloduy NPP. It shall provide consistent and comprehensive support for the decisions and recommendations for emergency management at local, national and regional levels, and also for communication and exchange of information in accordance with bilateral and international agreements.

With respect to the MoWEP, the expected results of this PHARE Multi-Country Project, is to implement an independent, real-time radioactivity monitoring system and an adequate radiological data management within the National Environmental Radioactivity Surveillance Network for NPP Cernavoda and the area neighbouring Kozloduy NPP

The total budget of the project is 1 million Euro, of which 500,000 Euro is to be used by the MoWEP. The started date of this project is the third quarter of 2003.

An EU-PHARE project in 1993 assisted in developing the National Integrated Environmental Monitoring System. The Master Plan for the National Environmental Monitoring System (NEMS) in Romania provides a framework for the further development of environmental monitoring in Romania. Following the recommendations of Phare Master Plan, the following activities were carried out:

- establishment of technical support institution for the MoWEP through Governmental Decision no. 337/1999 - National Research and Development Institute for Environmental Protection – ICIM, Bucharest
- establishment of national reference laboratory for measurement of radioactivity in the environment – the Environmental Radioactivity Laboratory of ICIM, Bucharest (ERL – ICIM, Bucharest) through Governmental Order no. 337/1999
- development and implementation of quality system according to ISO 17 025 for measurement of radioactivity in the environment under routine and emergency conditions – international accreditation of the national reference laboratory (namely ERL – ICIM, Bucharest) in progress – PHARE project no. RO9804.04.01
- development of central environmental radioactivity database at ERL – ICIM, Bucharest by implementation of the EU – **R**adioactivity **E**nvironmental **M**onitoring database format (REM) with the in-kind guidance of the Environmental and Sustainability Institute, JRC Ispra, Italy
- development of technical means at ERL for participation in the **E**uropean **U**nion **R**adiological **D**ata **E**xchange **P**latform (EURDEP) with the in-kind guidance of the Environmental and Sustainability Institute, JRC Ispra, Italy
- optimisation of NERSN (with respect to monitoring activities and distribution of the NERSN measurement stations over the territory) – project funded by the MoWEP (on-going at ERL–ICIM, Bucharest)
- development of rapid methods for assessment of environmental radioactivity under emergency conditions – project funded by the Ministry of Research and Education (on-going at ERL–ICIM, Bucharest)
- development and implementation of an automatic system for measurement of air gamma dose rate related to Magurele nuclear facility - project funded jointly by the MoWEP and the Ministry of Research and Education (on-going at ERL–ICIM, Bucharest and the Nuclear Physics Department of University of Bucharest)

Starting from 1990, the International Atomic Energy Agency (IAEA) has also provided support to environmental radioactivity surveillance activities through technical assistance projects developed and implemented by the Environmental Radioactivity Laboratory – ICIM, Bucharest:

- IAEA TC – ROM/9/010- " NERSN Mission to Romania" (1991-1992) - consisting in 2 experts missions and representing IAEA' s response to the request of ERL and the Secretary of State for Environment, to assess the NERSN and provide recommendation for short and long-term priorities for the improvement of the network.
- IAEA TC – ROM/9/012 "Upgrading of Environmental Radioactivity Lab" (1995-1996) – consisting in 6 expert missions and equipment for ERL to improve its capability for environmental radiation monitoring
- IAEA TC – RER/2/003 (started in 1995, on-going at ERL, Bucharest) "Marine Environmental Assessment of the Black Sea Region" - concerning development and implementation of a Black Sea regional monitoring network; coordination and harmonisation of national monitoring programmes and methodologies and development of regional monitoring and emergency response with respect to marine environment radioactive pollution

3.3 Results

The main results of this Project will be:

- An Radioactive Monitoring System at national level compatible and harmonised with EU regulations and radiological surveillance systems
- Functionality of Radioactive Monitoring System as Early Warning System for the notification and reporting to the Central Committee for Nuclear Accidents and Cosmic Objects Fall (CANCOC) within CNCI premises, in order to implement an adequate informational system between the radiological data manager (MoWEP) and decision factors from CANCOC
- Capabilities to detect and quantify levels of radioactive contamination in the various elements of the environment under routine and emergency conditions and to provide data that meet the requirements of decision making
- Strengthened ERL (the scientific and technical co-ordinator of the NERSN)
- Trained personnel having the expertise to carry out the activities related to the implementation of the radioactivity monitoring and reporting system. Training local trainers who will be able to maintain the know-how, by regularly recycling training sessions.

3.4 Activities

The upgraded NERSN is conceived as an integrated system of a number of specialised components that will enable:

- monitoring of the environmental radiological situation over the territory of Romania
- enforcement of standards and control of compliance
- rapid detection of releases or nuclear accidents and/or radioactivity releases related to national and transboundary sources, followed by notification/alarming of authorities
- quick estimation of emergency extent and its development
- provision of radiological data to support decision on measures for protection of population
- review of enforced countermeasures based on actual monitoring situation and its forecast

The specialised components are:

1. The Radioactive Monitoring System (RMS), comprising of the territorial and source-related air gamma dose network (RAS) and the source-related water radioactivity monitoring network (RAW).

The RMS will consist of:

- remote automatic air gamma dose measuring stations
- submersible intelligent probes for monitoring water radioactivity (RAW)

It should be mentioned that the RMS will incorporate also the RAS set-up through the Phare 1999 multicountry project, in the areas of Cernavoda and Bechet (related to Cernavoda and Kozloduy NPP's).

2. The network of thermoluminescent dosimeters (TLD network),

3. The radioactivity monitoring laboratory (ies)

4. The central network coordinating laboratory (ERL)

5. Data management and reporting system,

It should be mentioned that the communication system that will be set-up through the project, is designed as an open system in order to accommodate and support several other types of environmental data (i.e. meteorological, air and water quality) allowing thus integration of all data fluxes within the MoWEP into this system.

All the raw radiological monitoring data will be centralised within the ERL.

The intent is to increase the flexibility to manipulate radiological data, increasing the capability to perform predictions and improve data interpretation, presentation and reporting at different decision levels.

The ERL has also developed the software necessary to perform routine reporting to the EU, the EURDEP transmission being already operational for Romania. The equipment that will be provided will allow for permanent connection with the EU- databases.

Consequently, the following project has been identified:

"Supply of Equipment and Training for adequate environmental radioactivity monitoring and reporting system", which includes the following **activities**:

3.4.1 Activity 1: Procurement and installation of the necessary equipment

3.4.2 Activity 2: Training for:

- Use of monitoring and informational equipment
- Use of environmental radioactivity monitoring data in the decision making process
- Environmental sampling, sample preparation and measurement strategies and techniques in both routine and emergency conditions
- Interpretation and evaluation of radiological monitoring data in routine and emergency condition;
- Implementation of data reporting system at national and EU level

It should be mentioned that instruction on the operation and management of the equipment will be provided as part of the supply contract (3.4.1).

This project will be tendered in two contracts:

- One Supply contract for equipment acquisition
- One Technical Assistance contract for the training activities

A first set of technical specifications for the supply component and the terms of reference for the training component were prepared through PPF assistance, together with the ERL-ICIM experts. However PPF results will be revised to identify first priority investment.

3.5 Lessons learned

The "Needs Assessment" Study (ECHO) sponsored by the European Commission (EC), which focused on identifying the needs for assistance on the **o**ff-**s**ite **e**mergency **p**reparedness (OSEP) in 14 countries of Central and Eastern Europe and the former Soviet Union, was completed in February 1996. Lack of early warning and radioactivity monitoring systems, reliable data transmissions in the Cernavoda and Bechet (Kozloduy) areas were identified to be important limiting factors in the successful functioning of OSEP in Romania.

Consequently, the Commission has identified a multi-country project entitled **"Enhancement of off-site emergency preparedness in Romania",** with special emphasis on the environmental radioactivity monitoring in area of Cernavoda NPP and Kozloduy NPP.

This project is following and completing the a/m project, aiming to fully implement the environmental radioactivity monitoring and reporting system, compatible and harmonised with EU regulations. Therefore, the project is comprising 2 main activites one related to acquisition and implementation of necessary equipment, and the second related to use of the equipment and data resulted, interpretation and evaluation.

4. Institutional Framework

As described in Sub-chapter 3.1, the National Environmental Radioactivity Surveillance Network (NERSN) is organised under the authority of the Ministry of Waters and Environmental Protection, being co-ordinated by the Secretary of State for Environmental Protection through the General Commissariat of the Environmental Guard.

The Environmental Radioactivity Laboratory (ERL) belongs to the National Research and Development Institute for Environmental Protection – ICIM, Bucharest, which is co-ordinated by the MoWEP.

The owner of the equipment will be the MoWEP for the equipment related to the surveillance network – NERSN, and through ICIM, for the equipment related to the radioactivity laboratory, ERL.

Once the system implemented, the operating costs will be borne by the MoWEP as part its support toward the national environmental monitoring and surveillance programme.

Given the development of nuclear energetics and related industries (Romania has officially opted for nuclear power as one of its energy sources, the second reactor being under construction at Cernavoda NPP and planned to become operational by 2006) and in view of obligations derived from international conventions at which Romania is Part as well as obligations as Accession country, budgetary funds will continue to be allocated to environmental radioactivity monitoring activities.

It is estimated that the only additional cost required by operation of the upgraded network are incurred by real time transmission of monitoring data (of about 2000 USD/ month for about 200 stations).

5. Detailed Budget (MEUR)

Activities	Phare Support			National Co-financing*	IFI*	TOTAL
	Investment Support	Institution Building	**Total Phare (=I+IB)**			
a) Procurement of the necessary equipment for adequate environmental radioactivity monitoring and reporting system	1.7	-		0.567	-	2.267
b) Assistance for implementation of an adequate environmental	-	0.3	0.3	-	-	0.3

radioactivity monitoring and reporting system						
Total	**1.7**	**0.3**	**2**	**0.567**		**2.567**

** The Ministry of Waters and Environmental Protection will provide the national co-financing in cash*

6. Implementation Arrangements

6.1 Implementing Agency

The Implementing Agency is the **Central Finance and Contracting Unit (CFCU)** of the Ministry of Public Finance, which retains overall responsibility for the implementation of the project as approval of terms of reference, of tender documents, of evaluation criteria, of evaluation of offers, signature of contracts, authorisation and payments of invoices.

6.2 Implementing Authority

The Implementing Authority is the **Ministry of Waters and Environmental Protection** through the **Department of International Programmes and Projects** and the **General Commissariat of the Environmental Guard**. MoWEP is responsible for the operational management of the project: preparation of Terms of Reference, tender documentation, evaluation criteria, evaluation of offers, contracts, invoices of payment.

6.3 Non-standard aspects

There are no "non-standards aspects". The "Practical Guide to Phare, Ispa and Sapard contract procedures" will strictly be followed.

6.4 Contracts

The respective values of the expected contracts are the following:

Supply Contract MEUR (MEUR from Phare)
Technical Assistance Contract 0.3 MEUR

7. Implementation Schedule

The contracts for the project will have duration of 18 months.

7.1 Start of tendering/call for proposals: March 2004

7.2 Start of project activity: September 2004

7.3 Project Completion: March 2006

8. Equal opportunity

Equal opportunity for men and women to participate in all the components of the project will be ensured. The Implementing Authority will develop parameters to monitor the ongoing equal opportunity to participate in the projects, and where unequal opportunity for participation is observed, will take necessary and appropriate actions.

9. Environment

The project will have no impact on the environment. On the contrary, the investment will be carried out to monitor the quality of the environment.

10. Rates of return

Financial rate of return %: N/A
Economic internal rate of return %: N/A

A Technical Assistance for the preparation of the present project, including the elaboration of the Feasibility Study, was provided through a PPF framework contract.
Conclusions will be refined to identify the first priority investments.

11. Investment criteria

11.1 Catalytic effect

The strengthening of the MoWEP is a pre-requisite to further implement a realistic environmental policy.

11.2 Co-financing

The Romanian Government will ensure the co-financing of this investment project (25% of the total cost of the investment component).

11.3. Additionality

No other donors are likely to finance similar actions.

11.4 Project readiness and size

The implementation of the project can start according to the implementation chart (Annex 2). The project complies with the 2 MEUR minimum Phare allocation requirement.

11.5 Sustainability

Once the system implemented, the operating costs will be borne by the MoWEP.

11.6 Compliance with state aids provisions

The project complies with the state aids provisions since it does not finance any private entity.

12. Conditionality and sequencing

- MoWEP will provide the necessary co-financing in cash.
- The project requires the full commitment and participation of the senior management of the MoWEP and ICIM, which will provide the necessary resources to operate effectively, and will be fully involved in the activities
- Once the system implemented, the operating costs will be borne by MoWEP
- MoWEP undertakes to finance any additional costs which may arise in order to ensure timely completion of the project
- A revised proposition regarding first priority investments to be financed by this project will have to be approved by Commission services before contracting supply and TA contracts. In case the needs would be less that the initial estimated budget, the EU Commission reserves the right to reallocate the funds.

ANNEXES TO PROJECT FICHE

1. Logical framework matrix
2. Detailed implementation chart

3. Contracting and disbursement schedule by quarter

Annex 1

Logframe Matrix for Project: **The Implementation of an Adequate Environmental Radioactivity Monitoring and Reporting System**		**Contracting period expires: 30 November 2005**	**Disbursement period expires: 30 November 2006**
		Total budget: **2.567**	**Phare budget:** **2.0 MEUR**
Overall objective	**Objectively Verifiable Indicators**	**Sources of Verification**	
• Implementation of an adequate environmental radioactivity monitoring and reporting system, compatible and harmonised with EU regulations	- A complete and operational network and reporting system - Enforcement of EU Directives in the field	Internal (Government) and international (EU / EURDEP) reporting means	
Project purpose	**Objectively Verifiable Indicators**	**Sources of Verification**	**Assumptions and risks**
• Improving the technical capacities of the existing National Environmental Radioactivity Surveillance Network (NERSN) and of the National Reference Laboratory (ERL) to fulfil the national and EU requirements related to radiological surveillance, both under routine and emergency conditions	- Improved NERSN' capacity to monitor activities involving releases of radioactivity in the environment - Improved capacity of the Environmental Radioactivity Laboratory (ERL) capacity to co-ordinate the NERSN, to elaborate monitoring methodologies, and to provide reporting - Enforced county Environmental Protection Inspectorates (EPI's) capacity for environmental permitting of the activities involving releases of radioactivity in the environment - Early warning system	EURDEP reporting and other bilateral and international conventions	Access to appropriate locations for the monitoring stations will be provided Once the system is implemented, the operating costs will be borne by the Romanian Government as part of its support towards the national environmental monitoring and surveillance programme

	operational at national level - Enhanced response capability in case of radiological and nuclear emergency		
• Providing adequate training in order to ensure the expertise required to carry out the activities related to the implementation of the radioactivity monitoring and reporting system	- Practices and standards exist for the operation and management of the system	Internal reporting of standards of competence Mission reports (Quarterly) of Contractor Minutes of the Project Steering Committee	Commitment of the Government of Romania - MoWEP Collaboration of other parties involved - EPIs and ERL will make available the necessary, qualified, permanent staff for training throughout this project and to gradually take over full operation of the monitoring network by the end of the project
Results	**Objectively Verifiable Indicators**	**Sources of Verification**	**Assumptions and risks**
• A fully automatic Early Warning System at national level (comprising a real-time, on-line measuring net for air gamma dose rate and water radioactivity) compatible and harmonised with EU regulations and radiological surveillance systems • Capabilities to detect and quantify levels of radioactive contamination in various compartments of the environment under routine and emergency conditions and provide data that meet the requirements of decision factors • Strengthen national reference laboratory (ERL) for measurement of radioactivity in the environment (the scientific and technical co-ordinator of the National Environmental Radioactivity Surveillance Network) capable to carry out the following activities: - elaboration of sampling, sample	- Operational early warning system - Operational network - Operational local environmental radioactivity laboratories - Operational mobile units - Necessary equipment purchased and installed - Improved ERL capable to fulfil responsibilities of co-ordination of the network - Necessary equipment purchased and installed	Data reported to EU/ EURDEP Data reported to the central co-ordinator and EU Data reported to the national and international level On site inspections/site visits Stakeholder acknowledge-ment	MoWEP will make available the institutional facilities already present within the county EPI's MoWEP will make available its central technical and scientific support institute (the ERL) of the National Research and Development Institute for Environmental Protection - ICIM MoWEP, EPIs and ERL will make available the necessary, qualified, permanent staff for training through this project and to gradually take over full operation of the monitoring network by the end of the project Access to appropriate locations for the monitoring stations will be provided MoWEP will provide the necessary data management staff associated with the monitoring network and to prepare the required reports to the EU (EURDEP); if sufficient permanent staff are not made available to be trained and to operate the network, the equipment will quickly loose

preparation and measurement methodologies - assurance of quality for measurements (by set-up and implementation of an adequate QA/QC system at national level) - verification and validation of radiological data - reporting at national and international level (EU – REM database)			calibration and fall into disrepair. Funds also required for continued operation to provide accurate and reliable monitoring data, and to develop on-going management and maintenance of equipment MoWEP and other institutions responsible for the use of radioactivity monitoring system information are ready to fully cooperate on the implementation of the measures and to make effective use of the new monitoring data Once the system is implemented, the operating costs will be borne by the Romanian Government as part of its
• Trained personnel having the expertise to carry out the activities related to the implementation of the radioactivity monitoring and reporting system	- No. of organised training courses (5), workshops (1) and scientific visits (1) - Nos of trained local trainers (15-20) - No. of trained personnel (ca. 200) in the various disciplines - Course graduation (or equivalent) certificates	Mission reports (Quarterly) by Contractor Minutes of the Project Steering Committee	support toward the national environmental monitoring and surveillance program Competence of trainers Local trained trainers do not leave the various operating agencies Trained staff do not leave the various operating agencies Know-how is successfully transferred to other staff
Activities	**Means**	**Sources of Verification**	**Assumptions and risks**

<u>Activity 1:</u> Procurement and installation of the necessary equipment	- Organisation of the tendering and procurement process, as well as the installation, for the equipment to be procured and installed according to Annex 4	Quality Assurance/Tests of acceptance	Delays in starting the activities Inappropriate communication with local staff
<u>Activity 2:</u> Training (technical training, scientific visits and workshops)	- Organisation of training courses, workshop, scientific visits according to Annex 5 - Relevant training material	Mission reports (Quarterly) of contractor Minutes of the Project Steering Committee	Training depends on the level of turnover the staff Workshops, seminars, other training are carried out successfully

THE IMPLEMENTATION OF AN AEQUATE ENVIRONMENTAL RADIOACTIVITY AND REPORTING SYSTEM

	2003												2004												2005												2006											
Calendar months	F	M	A	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	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
Activities																																																
Supply Contract	D	D	D	D	D	D	D	D	D	D	D		D	D	T	T	T	T	T	T	T	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I									
Technical Assistance Contract	D	D	D	D	D	D	D	D	D	D	D		D	D	T	T	T	T	T	T	T	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I									
	D = Design **C = Contracting** **I = Implementation**																																															

Annex 3 : Cumulative contracting and disbursement schedule for project "The Implementation of an Adequate Environmental Radioactivity Monitoring and Reporting System"

THE IMPLEMENTATION OF AN ADEQUATE ENVIRONMENTAL RADIOACTIVITY MONITORING AND REPORTING SYSTEM

CUMULATIVE CONTRACTING AND DISBURSEMENT SCHEDULE

CONTRACTING	2003				2004				2005				2006			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Supply Contract								1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
Technical Assistance Contract								0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
TOTAL CONTRACTS (EU ONLY)								2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0

DISBURSEMENT	2003				2004				2005				2006			
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Supply Contract								0.68		1		1.36		1.5		1.7
Technical Assistance Contract								0.12		0.17		0.22		0.27		0.3
TOTAL CONTRACTS (EU ONLY)								0.8		1.17		1.58		1.97		2.0