

ANNEX I

ACTION FICHE FOR ARMENIA & UKRAINE

1. IDENTIFICATION

Title/Number	CIS3.01/12 - Support to the Armenian and Ukrainian Regulatory Authorities		
EU contribution	€3 million		
Aid method / Method of implementation	Project approach: Centralised direct management		
DAC-code	23064	Sector	Nuclear Safety

2. RATIONALE

2.1 Sector context

The first priority of the INSC policy objectives is "supporting the promotion of an effective nuclear safety culture" in the countries of the former Soviet Union in line with the principles of the Convention on nuclear safety. The Soviet design of the nuclear power plants (NPPs), as well as the common history within the region offer an opportunity to support the Nuclear Safety Authorities with a common approach, adapted however to the specific needs and priorities of the countries.

Component A: Safe radioactive waste management at Vektor industrial complex in the Chernobyl Exclusion Zone

The INSC and finished TACIS projects have identified areas that require additional support.

New near-surface disposal facilities for short-lived waste are under construction at the Vektor site. Two disposal facilities for solid radioactive waste, SRW-1 and SRW-2, are under completion; the disposal facility for the Chernobyl Nuclear Power Plant, NPP waste (Lot 3) has been constructed. The operator continues the safety reassessment of this disposal facility with implementation of up-to-date methodologies.

A centralised facility for long-term storage of spent radiation sources is also under construction at the Vektor site; and the design of a facility for storage of high-level vitrified waste to be generated from reprocessing of spent fuel of Ukrainian NPPs (VVER-440) and a facility for high-level and long-lived waste resulting from activities at the Shelter, Chernobyl NPP and operating NPPs of Ukraine has started. There are also plans to create radioactive waste treatment facilities at all NPP sites.

Further activities are planned to convert the contaminated Exclusion Zone into an environmentally safe system, which provide for comprehensive surveys of the temporary radioactive waste sites in order to make a decision on the level of their hazard and further actions.

The radioactive waste management strategy in Ukraine envisages siting, design and construction of a facility for disposal of high-level and long-lived waste in stable deep geological formations and, respectively, iterative safety assessments at separate stages of the disposal facility. To make a decision on siting of a geological facility, potential sites shall be investigated within the National Programme up to 2017 to select a suitable site for the geological repository.

Component B: Licensing of new nuclear subcritical facility - neutron source based on an electron accelerator-driven subcritical assembly

The National Science Centre Kharkov Institute of Physics and Technology of the National Academy of Sciences of Ukraine (NSC KIPT) is constructing a neutron source based on an electron accelerator-driven subcritical assembly (hereinafter referred to as the "neutron source").

The neutron source relates to accelerator driven sub-critical (ADS) facilities operating and planned to be constructed in EU Member States, e.g. GUINEVERE experiment under the EUROTRANS.

Construction of the neutron source is financed by U.S. Department of Energy in the framework of the Russian Research Reactor Fuel Return (RRFR) program.

The main objectives of the facility are:

- provide capabilities for performing research including the use of radial neutron beam ports of the subcritical assembly;
- produce medical isotopes and provide neutron source for performing neutron therapy procedures;
- support the nuclear power industry by providing the capabilities to perform physics experiments and to train specialists.

In order to guarantee the necessary safety during the operation of the installation, the Regulatory Authority of Ukraine and its TSO need support in the licensing procedure of the neutron source in its initial stage. The feasibility study of the facility has been prepared; development of the design and safety analysis report is in progress.

Component C: Oversight and assessment of nuclear and radiation safety in terms of the licensee management system and human factor

Analysis of all recently occurred significant industrial accidents demonstrate considerable or even decisive impact of the human factor on accident initiation and worsening of accident consequences.

This tendency is due to the following two reasons:

- continuous improvement of technologies resulting in more controlled use of nuclear energy, and
- development of social and psychological sciences allowing more reliable detection and prevention of deviations in personnel performance.

In the framework of continuous safety improvement in use of nuclear energy, Ukraine implements NPP upgrades and increases the safety of radiation technologies. SNRIU technical support organisation (TSO) and other organisations of Ukraine have experience in safety assessments and development of technical measures.

Nevertheless, there is a lack of scientific and practical developments related to human factor in Ukraine. Although the regulatory framework is updated to be brought into compliance with International Atomic Energy Agency (IAEA) standards, actual implementation of the relevant documents needs to be improved.

Component D: Institutional building of Armenian Nuclear Regulatory Authority (ANRA)

Armenia operates one nuclear power unit (ANPP2), has one unit in shutdown since 1989 (ANPP1) and uses ionising radiation for industrial and medical purposes. One of the objectives is to strengthen the nuclear regulator (ANRA) and its Technical Support Organisation (TSO), the Nuclear and Radiation Support Centre (N&RSC). These organisations need various supports in the area of regulation, technical safety assessment and licensing, inspection and enforcement. They also need support in organisational aspects like initial and continuous training, quality assurance, emergency planning.

Further supporting cooperation in the licensing of newly installed safety equipment and new operational procedures remain a priority within the context of the operation of ANPP2. Support to ANRA for the future decommissioning of both units is also essential.

2.2 Lessons learnt

The obtained experience may be used for further safety upgrade of radioactive waste storage/disposal facilities, regulation of priority areas related to assessment of the temporary radioactive waste facilities and disposal sites in the Chernobyl Exclusion Zone and in licensing of NPPs and other nuclear facilities.

It is expected that coordination and interaction with other regulatory authorities will be an important part of the project together with early interaction and regulatory dialogue with the industrial side. International experts shall mainly focus on consideration of the most important safety issues.

2.3 Complementary actions

To ensure proper implementation of assistance projects, when appropriate activities are carried out under associated projects with the nuclear operator ("2+2" approach).

Component A

This component is a logical continuation of the INSC U3.01/08 Project "Cooperation with SNRCU for the licensing of radioactive waste management facilities and for the validation of soft on-site assistance (NPP level)" and U3.01/10 Project "Regulation of priority issues of safe radioactive waste management".

Component D

Complementary EU actions are the previous projects related to institutional building and to technical support to ANRA and its TSO as well as other actions performed by the International Regulatory Review Team (IRRT) missions and the Nuclear Energy Safety Council to the President of Armenia.

All those actions have produced a thorough knowledge of the situation of the ANRA and its TSO, as well as of their interface with the licensee and with the Armenian Government.

The EU has conducted in 2009 an overall assessment of TACIS projects. For Armenia, the conclusion with respect to the efficacy of the assistance is positive in spite of some delays in the implementation of related On Site Assistance projects and understaffing of ANRA. Actually, the staffing problem of ANRA has improved recently following organisational changes.

2.4 Donor coordination

This project will be funded entirely by the EU and does not constitute an overlapping with existing bilateral or international donor activities. Since EU will remain the only funding authority, donor coordination, except the Beneficiary, will not be considered. Preliminary discussion and coordination of any aspects with International Atomic Energy Agency (IAEA) are envisaged.

3. DESCRIPTION

3.1 Objectives

The general objective is to improve the regulatory assessment capabilities of the nuclear regulatory bodies of Armenia and Ukraine and their TSOs, by transfer of EU nuclear safety regulatory practices.

The **component A** is aimed at support of the regulatory bodies in the field of making regulatory decisions with the use of state-of-the-art methodologies of safety assessment and EU best practices. This is to ensure efficient regulation of waste management safety with regard to top-priority issues, which are envisaged by the National Targeted Ecological Programme for Radioactive Waste Management, Strategic Road Map and must be solved and implemented by the industrial party in the first instance. Therefore, this project takes into account plans of the industrial side, envisaged, in particular, by the Strategic Road Map in the field of radioactive waste management, Annual Action Programmes 2010 and 2011 projects, as well as plans for decommissioning and rehabilitation of contaminated territories.

It is envisaged to implement the approach of constructive dialogue between the regulatory body and its technical support organisation and the industrial side.

The list of top-priority tasks in the field of radioactive waste management to be solved by the industrial party in the near future (including those in the framework of EU-funded projects) that will require regulatory decisions includes:

- classification of radioactive waste, characterisation of radioactive waste, accounting and control;
- development and implementation of quality assurance/management system for radioactive waste management according to up-to-date international standards;
- assessment of condition of existing radioactive waste storage sites, sites for temporary storage of radioactive waste and radioactive waste disposal sites in the Chernobyl Exclusion Zone;
- radioactive waste processing;
- management of disused sealed radioactive sources (SRS);
- long-term storage of high-level and long-lived radioactive waste;
- radioactive waste disposal (including very low-level radioactive waste);
- development of disposal capacity for high-level and long-lived radioactive waste in stable deep geological formations and site selection for the geological repository;
- clearance of material and site release from regulatory control (e.g. storage sites, contaminated as a result of practical activities).

For **component B**, the objective is to strengthen the State Nuclear Regulatory Inspectorate of Ukraine - SNRIU (former SNRCU) capabilities in licensing of the neutron source based on an electron accelerator-driven subcritical assembly and for **component C**, the objective is to strengthen the SNRIU capabilities in regulatory activity related to oversight and assessment of nuclear and radiation safety (NRS) issues in terms of the licensee management system and human factor as well as transfer of know-how in the regulatory assessment and oversight of NRS issues in terms of the licensee management system and human factor.

The **component D** contributes to the following objectives:

- (a) supporting the promotion of an effective nuclear safety culture in Armenia in line with the principles of the Convention on Nuclear Safety, in particular through continuous support to regulatory bodies;
- (b) supporting ANRA in its institutional building efforts, in order to improve its effectiveness and efficiency through the transfer of Western European methodologies and practices.
- (c) supporting the development and implementation of spent fuel, decommissioning and nuclear waste management strategies.

3.2 Expected results and main activities

Component A: Safe radioactive waste management

The expected outputs will be the strengthening of SNRIU capabilities in use of international approaches and methodologies for safety assessments of activities and facilities for radioactive waste management and review (technical evaluation) of operator submittals.

The project will promote the harmonisation of safety regulatory practices in Ukraine and the EU.

Task 1 - Regulation of priority issues related to exemption/clearance from regulatory control

Assistance in regulation of projects intended for:

- a) Demonstration of exemption/clearance of radioactive materials from regulatory control;
- b) Remediation of territories contaminated as a result of past practices and their release from regulatory control.

This task is a logical follow-up of Task 2 «Regulation of priority issues of characterisation, monitoring and control over radioactive waste and radioactive waste exemption from regulatory control» of component a of the U3.01/10 project of AP-2010.

Task 2 - Regulation of priority issues related to safety in construction, commissioning and operation of radioactive waste treatment facilities

This task envisages assistance to the regulatory bodies on:

- a) Review (technical evaluation) of interim safety analysis reports (SAR) for radioactive waste treatment facilities, and regulatory decision-making;
- b) Review (technical evaluation) of final SARs and other documents for commissioning and operation of radioactive waste treatment facilities, and regulatory decision-making.

This task is also a logical follow-up of Task 4 “Regulation of priority issues in construction of radioactive waste treatment facilities and in radioactive waste transport” of component A of the INSC project U3.01/10.

Task 3 - Regulation of priority issues related to safety of radioactive waste storage and disposal facilities

This task envisages reviews (technical evaluation) of SARs and respective documents on construction, commissioning and operation of radioactive waste storage and disposal facilities submitted for regulatory decision-making. In particular, it will deal with three facilities for long-term storage of high-level, vitrified and long-lived radioactive waste at the Vektor site.

This task is a logical follow-up of project U3.01/08 and Task 4 “Regulation of priority safety issues of new facilities for long-term storage and disposal of radioactive waste at the Vektor site” of project U3.01/10. The task is directly linked with projects of the industrial side planned within AP-2011 and AP-2012 (e.g. U4.01/12 Part A).

Task 4 - Regulation of priority issues related to safety of high-level and long-lived waste disposal in deep geological formations

This task envisages assistance to the regulatory bodies on:

- a) Dialogue with the operator on site characterisation, determination of site suitability; and making a decision on further design and construction of the geological disposal facility;
- b) Reviews (technical evaluation) of documentation justifying the concept of multi-barrier system of radioactive waste containment and isolation in the geological disposal facility.

This task is a logical follow-up of Task 6 envisaged under component A of the INSC U3.01/10 project and intended to develop guidelines on preliminary survey programme to select a priority site and identify general criteria for radioactive waste acceptance for disposal. The task is directly linked to projects of the industrial side planned in the Strategic Road Map.

Component B

Task 1 - Familiarization with EU experience in operation of sub-critical assemblies (through the organisation of workshop and training).

This task should transfer the state of the art EU knowledge on regulation of sub-critical assemblies.

Task 2 - Development of regulations and methodologies on neutron safety:

This task will support the development of regulations and procedures or amendment of existing regulations and procedures to ensure nuclear safety for subcritical assemblies where existing regulations are insufficient.

Task 3 - Development of calculation models for the regulatory review:

This task should provide the regulatory tools for the safety review of the sub-critical assembly.

The following results are planned under the project:

- to improve the regulatory framework on the neutron source based on an electron accelerator-driven subcritical assembly;
- to implement up-to-date methodologies for safety analysis of the neutron source;
- to improve analytical capabilities for regulatory review of the neutron source safety analysis.

Component C

Task 1 - Performance of management system

State inspectors will familiarize with approaches of EU Member States and identify capabilities for improvement of regulation and oversight of management system of the utility for nuclear installation or the licensees using radiation sources for medical purposes.

Task 2 - Formation and maintenance of safety culture

Practical recommendations are expected to be obtained on organisation of state.

Regulation and oversight of safety culture depending on activities carried out by the licensee.

The following tasks mainly focus on regulation and oversight of operating organisations for nuclear installations and radioactive waste disposal facilities.

Task 3 - Personnel of the utility

Recommendations will be provided on implementation of current European practices in Ukraine related to authorisation of personnel and officials and training of personnel.

Task 4 - National system for training and examination on nuclear and radiation safety for separate categories of licensee personnel

This Task will focus on assessment and development of recommendations based on the best European practices related to national system for training and examination of licensee personnel on nuclear and radiation safety.

Task 5 - Licensee knowledge management system

This Task will focus on analysis of European practices and development of recommendations on regulation of the licensee knowledge management system.

Task 6 - Interaction of licensees with suppliers

This Task will focus on analysis of EU practices and development of recommendations on SNRIU regulatory activities in the following areas:

- requirements for suppliers of products for systems important to safety of nuclear installations;
- requirements for the licensee management system related to procedure for assessment and monitoring of suppliers;
- market monitoring of some products (nuclear installations and their components, radiation sources, generating devices, etc.);
- impact of the regulatory authority on suppliers' activities.

Task 7 - Analysis of human factor as part of initial cause analysis of nuclear and radiation safety events

This Task will focus on event initial cause analysis with emphasis on human and organisational factors. The following subjects will be discussed: HF event analysis methods; human and organisational factors; barriers linked to human and organisational factors; cultural aspects related to root cause analysis; corrective actions; learning from events.

Component D

It is expected that ANRA, on the basis of the results of the project, will integrate further EU methodologies and practices in the domains identified in the project and

acquire additional competence and experience in those domains. It is also expected that ANRA will increase its independence from the licensees and makes progress in becoming a self-sufficient regulator. The tasks to be performed are mostly technical tasks as a continuation of the tasks already started in the former regulatory assistance projects AR/RA/01 to AR/RA/05.

Task 1 - Improvement of legal and regulatory infrastructure

The Armenian government established and put efforts to maintain an appropriate governmental, legal and regulatory framework for safety within which responsibilities are allocated by means of different instruments, statutes and laws. The prime responsibility for safety is extended to all stages in the lifetime of facilities and the duration of activities, until their release from regulatory control (or closure in the case of disposal facilities for radioactive waste) of facilities. Where several authorities have responsibilities for safety within the regulatory framework for safety, the responsibilities and functions of each authority should be clearly specified in the relevant legislation.

Task 2 - Personnel training and retraining

Recruitment Plan and Training plans for newcomers is one of the key aspects of the ANRA strategic plan and one of the ways to reach the strategic plan objectives. This task should be implemented in strong connection with the EU project specifically dedicated to Training and Tutoring. Also training for trainers and for ANRA and N&RSC newcomers can be organized in other as Instrumentation & Control (I&C), operational safety, ageing management, etc.

Task 3 - Operational safety

This task will consist of inspections with the participation of EU experts to evaluate the effectiveness of the ANRA inspection process, in order to ensure the sustainability of this activity at ANRA, i.e. the verification that the existing inspection procedures are covering the issues of operational safety and are followed. The inspections should include, amongst other topics, the evaluation of the implementation of the IAEA Operational Safety Review Team (OSART) mission and OSART mission follow-up recommendations and findings.

Task 4 - Safety Review and Licensing

Review and assessment of the operator's safety submissions are among the principal functions of the ANRA and are a part of a licensing process. The task will focus on the following activities:

- Licensing of the ANPP Unit №2 safety upgrades
- Licensing of seismic safety upgrades
- Oversight of the safe operation and aging management of ANPP Unit №2.
- Gaining knowledge on specific innovative issues (to be defined with ANRA).

3.3. Risks and assumptions

The tasks in the framework of this project are developed in accordance with the expected activity of the industrial side planned under the INSC Action Plan (AP-2009, AP-2010, AP-2011 and AP-2012), and according to the Strategic Road Map for radioactive waste management sector, decommissioning and rehabilitation of territories.

It is expected to implement a constructive dialogue among the regulatory authority, technical support organisations and industrial side in order to solve safety issues at all stages of construction of radioactive waste management facilities.

Risks regarding implementation of this project can be related to:

- necessity to ensure sufficient manpower in case of simultaneous submittal of safety documents for regulatory review for different facilities designed for radioactive waste management identified by the scope and objectives of the project;
- delays in deadlines of projects and submittal of safety documents by the industrial side.

Any of the critical institutional factors should not affect efficiency of the project. The defined risks mainly concern sufficiency of support by the Beneficiary in view of providing the resources or delays in project implementation which relate to the industrial sector.

3.4 Crosscutting Issues

In general the project approach naturally addresses cross-cutting development issues as it part of human and environmental protection programmes.

3.5 Stakeholders

The beneficiaries of this project are the following: For Components A, B, C it is the SNRIU and for component D it is the ANRA.

4. IMPLEMENTATION ISSUES

4.1 Implementation method

Centralised direct management.

A Financing Agreement will be signed with the beneficiary countries, Armenia and Ukraine

4.2 Procurement and grant award procedures

All contracts implementing the action must be awarded and implemented in accordance with the procedures and standard documents laid down and published by the Commission for the implementation of external operations, in force at the time of the launch of the procedure in question.

Participation in the award of contracts for the present action shall be open to all natural and legal persons covered by the INSC Regulation (Council regulation (EURATOM)

No 300/2007 of 19 February 2007 establishing an Instrument for Nuclear Safety Cooperation).

4.3 Budget and calendar

Total estimated EU budget: €3 million (€2 million for Ukraine components A, B and C; €1 million for Armenia component D).

Estimated contract duration: 36 months

Type of contract(s): Service

4.4 Performance monitoring

The project will be monitored in compliance with the Commission's standard procedures. Monitoring and assessment should be based on periodic assessment of project progress, achievement of project outputs and objectives.

The performance will be assessed via progress meetings, progress reports and endorsement by the Beneficiaries of all the project deliverables.

Specific Project Key Performance Indicators will be defined during the preparation of the Terms of Reference.

4.5 Evaluation and audit

Financial transactions and financial statements shall be subject to the internal and external auditing procedures defined in the Financial Regulation.

4.6 Communication and visibility

Visibility activities will be implemented according to well-defined standards and rules: the EU visibility guidelines for external actions. These guidelines are a part of the contractual obligations of implementing partners/Consultants and must therefore be carried out in the same way as any other contractual element.

On a regular basis, the Consultant will submit Progress Reports to the European Commission. The Consultant shall pay particular attention to the confidentiality of the data.

Other deliverables dedicated to visibility may include:

- An inception press release at the start-up of the project;
- A final press release to be provided with the project final report;
- A final presentation meeting for the dissemination of the project results organised by the Consultant.

Other actions to disseminate results or increase the visibility of the EU action may be implemented in parallel to the present projects.

ANNEX II

ACTION FICHE FOR BRAZIL

1. IDENTIFICATION

Title/Number	BR3.01/12: Support to the Nuclear Safety Regulator of Brazil		
EU contribution	€2 million		
Aid method / Method of implementation	Project approach: Centralised direct management		
DAC-code	23064	Sector	Nuclear Safety

2. RATIONALE

2.1. Sector context

The first EU policy priority in this field is "to support the promotion of an effective nuclear safety culture" in countries within and outside of the EU, in line with the principles of the Convention on Nuclear Safety.

The most relevant characteristic of Brazil's policy in the nuclear sector is that the nuclear energy is considered as an important source of primary energy for electricity generation. The electricity generation from Nuclear Power Plants (NPPs) shall increase in the near future.

The Brazilian Federal Constitution of 1988 states that the Federal Government has the exclusive competence for managing and handling all nuclear energy activities, including the operation of nuclear power plants. It holds also the monopoly for the survey, mining, milling, exploitation and exploration of nuclear minerals, as well as the activities related to industrialization and commerce of nuclear minerals and materials. All these activities shall be solely carried out for peaceful use and always under the approval of the National Congress.

The national policy for the nuclear sector is implemented through the Plan for Science and Technology 2012/2015.

Another important target is to increase the participation of nuclear energy in the national electricity production. This involves the continuous development of technology, and the design, construction and operation of nuclear industrial facilities related to the nuclear fuel cycle. This includes also the technological and industrial capability to design, construct and operate nuclear power plants, to provide electrical energy to the Brazilian grid in a safe, ecologically sound and economic way.

Moreover, this also requires the development of necessary human resources for the establishment and continuity of the activities in all these fields.

Currently, Brazil has two nuclear power plants in operation (Angra-1, 626 MWe net, 2-loop PWR and Angra-2, 1275MWe net, 4-loop PWR), and one under construction (Angra 3, 1229 MW net, 4-loop PWR). Angra 3 has had the construction temporarily interrupted since 1991 but the re-start of the licensing process has been decided by the Federal Government and in 2010 the CNEN (Comissão Nacional de Energia Nuclear) issued the Construction License.

Angra 1, 2 and 3 are located near the city of Angra, some 215 km south of Rio de Janeiro.

In June 2007, the Federal Government approved the re-start of construction of Angra 3 after a 23-year interruption. Most of its components of imported scope are already in Brazil and the site is ready for concrete pouring. All the required engineering is essentially available since for economy and standardization reasons Angra 3 is to be as similar as possible to Angra-2. This concept has been submitted to and accepted by the Brazilian National Regulatory Nuclear Energy Commission CNEN, proposing “Angra-2 as-built” as the reference plant for Angra 3.

CNEN has been designated as the regulatory body entrusted with the implementation of the legislative framework related to safety of nuclear installations.

Effective separation between the functions of the regulatory body (CNEN) and the organization concerned with the promotion and utilization of nuclear energy for electricity generation, Eletrobrás Termonuclear S/A (Eletronuclear), is provided by the structure of the Brazilian Government in this area. CNEN has to face a lot of challenges in the near future because of large back fitting measures in Angra-1 related to life extension, modernization of Instrument and Control (I&C) and power up-rate, in Angra-2 with the Periodic Safety Review (PSR), power up-rate and Probabilistic Safety Analysis (PSA), in Angra-3 with the construction and commissioning activities, power up-rate, and with the licensing process of the Brazilian Multipurpose Reactor (RMB). Beside that, CNEN has also the necessity to develop a comprehensive review of the PSA Level-1 of Angra-2 and Angra-3, and the preparation of the activities in the frame of the licensing of Angra-3. Particularly in the PSA review and special areas of licensing, like approval of Digital Instrumentation and Control, CNEN needs support to consolidate the existing experience.

2.2. Lessons learnt

This is the second project in Brazil but the previous actions held in the Tacis countries have shown the importance of a good preparation of the programmes and the documents related to the projects in order to enhance their implementation and efficiency.

2.3. Complementary actions

The project is directly linked to previous project BR3.01/09. Three projects with the Brazilian operator "Eletronuclear" are also ongoing (SAMG, human factors engineering, and I&C upgrade).

In the field of Training and Tutoring, the multi-country projects MC3.01/10 and MC3.01/11 are available in order to provide a number of Training and Tutoring opportunities to the regulators and TSOs in several countries, including Brazil.

2.4. Donor coordination

This action is self standing and is not to be linked to the potential actions of other donors or the International Atomic Energy Agency (IAEA). The preparation or updating of a Strategic Plan and Action Plan for the Regulatory Authority will help the partners to avoid the risk of duplication. In addition, the European Community will continue to coordinate its actions with the IAEA.

This project will be funded entirely by the EU, and does not constitute an overlapping with other existing bilateral or international donor activities. No donor coordination is foreseen as the EU will remain the only fund provider besides the beneficiary country.

3. DESCRIPTION

3.1. Objectives

This project is aimed at contributing to meeting the Instrument for Nuclear Safety Cooperation (INSC) goals, as part of the Indicative Action Programme (IAP) 2013-2015.

The European Commission adopted a "Communication addressing the international challenge of nuclear safety and security"¹ in spring 2008. Further to this Communication, the Council Conclusions on assistance to third countries in the field of nuclear safety and security² provide the criteria to be used for selection of projects. This project fulfils these criteria.

The overall objective of the project is the enhancement and strengthening of a nuclear safety regulatory regime in Brazil in compliance with internationally used criteria and practices.

Inside CNEN, CGRC (General Coordination for Reactors and fuel Cycle) is more specifically the body in charge of regulatory activities.

More specifically, the project focuses on the following aspects:

- Co-operation with the Nuclear Regulatory Authority in the assessment of the Probabilistic Safety Analysis
- Co-operation with the Nuclear Regulatory Authority in the assessment of the deterministic analyses of large break Loss of Coolant Accidents (LOCAs)
- Co-operation with the Nuclear Regulatory Authority in the assessment of ageing management and long term operation
- Co-operation with the Nuclear Regulatory Authority in the follow up of Severe accident Management
- Co-operation with the Nuclear Regulatory Authority in the follow up of assessment of the deterministic analyses of fuel performance
- Support the Nuclear Regulatory Authority in the follow up of assessment systems with digital I&C commissioning activities in Angra 3 project
- Co-operation with the Nuclear Regulatory Authority in emergency preparedness.

3.2. Expected results and main activities

Task 1 - Co-operation with CNEN in Probabilistic Safety Analysis (PSA)

The main objective of this task is to support CNEN in the Strengthening of Probabilistic Safety Assessment Capabilities such as licensing procedures, updating regulatory requirements and guidance, and training.

The completion of PSA level 1 related to fire and external events, PSA for low power and shutdown modes and PSA level 2 of Angra-2 and 3 is expected between 2013 and 2015. The work items of interest are addressed in the subtasks below.

¹ Council Conclusions on assistance to third countries in the field of nuclear safety and security, 2913th TRANSPORT, TELECOMMUNICATIONS and ENERGY Council meeting Brussels, 9 December 2008.

² COM (2008) 312 final of 22 May 2008 Communication from the commission to the Council and the European Parliament addressing the international challenge of nuclear safety and security

Subtask 1.1: Regulatory PSA Application

Support CNEN to perform an overview of the current status of application of PSA in the licensing process, and support CNEN in the selection of regulatory PSA applications to be envisaged for the Brazilian NPPs.

Subtask 1.2: PSA Requirements Update

Support CNEN in the update of the Brazilian regulatory guide for performance and use of PSAs according to international state of art and in the perspective of the regulatory PSA applications to be envisaged.

The main interests could include: Treatment of uncertainty, lack of treatment of ageing issues, Fire PSA, Level 2 PSA, External Events, Digital systems modelling. The main result would be a draft Regulatory Guide for a Probabilistic Safety Assessment program: requirements, methodology and implementation.

Subtask 1.3: PSA Review Process

Support CNEN in establishing and implementing a PSA Review Process according to the international state of the art, particularly in developing specific review guides and training for application. The specific topics of interests could be:

- to perform an analysis of success criteria for safety systems and accident progression;
- to perform a review of the fault tree modelling, principally those associated with the limitation systems;
- in establishing a reactor performance data collection program;
- in developing requirements for the development of a Quality assurance program for PSA projects.

Subtask 1.4: PSA computer code

Support CNEN in considerations regarding the need for independent and/or harmonised calculations related to Probabilistic Safety Analysis, taking into account that the existing PSAs for Angra 1, 2 & 3 use different platforms. CNEN considers to adapt the PSA to use a common computer code and therefore to adapt the existing PSAs for regulatory purposes.

Any purchase of computer codes will not be covered by this service contract and remains the responsibility of the Beneficiary.

Subtask 1.5: Staff training in PSA topics

Support CNEN to develop specific competence in PSA, such as fire PSA, external events PSA, low power and shutdown PSA methodology.

Task 2 - Co-operation with CNEN in Deterministic Safety Assessment

The objective of this task is to cooperate with CNEN in the performance of a review of the Deterministic Safety Assessment for Angra-1, 2 and 3. Possible items of interest are addressed in the subtasks below.

Any purchase of computer codes will not be covered by this service contract and remains the responsibility of the Beneficiary.

Subtask 2.1: Angra-2 and 3 Large-Break Loss of Coolant Accident

Support CNEN to perform an independent uncertainty analysis to quantify uncertainties associated with the Angra-2 Large-Break Loss of Coolant Accident

evaluation model with a best estimate code, in the licensing process of power-upgrade and new fuel design.

Subtask 2.2: Angra-1 Large-Break Loss of Coolant Accident

Support CNEN to perform a review of the preliminary assessment over the application of the methodology used to quantify uncertainties associated with the Angra-1 Large-Break Loss of Coolant Accident evaluation model with a best estimate code, in the licensing process of Steam Generators replacement. In addition, support CNEN to define a regulatory process related to the Power Upgrade and New Fuel Design.

Subtask 2.3: Safety of new fuels (follow-up of task 6 of the BR/RA/01 project)

After the achievement of task 6 (safety of new fuels) of the first project BR/RA/01, CGRC will also have to perform safety evaluations of fuel design based on the Transuranus code. In this case, cooperation is sought for training in the use of this code. CGRC also needs to improve its competency in Thermo-Hydraulic 3D code.

Task 3 - Co-operation with CNEN in ageing management and long-term operation

Subtask 3.1: Ageing Management Program Assessment

In the field of Ageing Management Program Assessment, there is a need of transfer of knowledge and know-how to identify the appropriate parts which must be evaluated in the periodic safety review as far as long term operation is concerned, and on the way to carry out such evaluation.

Specific topics may include: identification of the scope, ageing mechanisms; activities to mitigate or prevent the ageing effects; specific ageing management programs, program review requirements, integrated management.

Subtask 3.2: Draft of Regulatory Guide for Assessment of Ageing Management Program Methodology and Implementation

After having achieved the development of a state-of-the-art general regulatory guide to evaluate ageing management programs, CNEN is now envisaging the development and the application of specific requirements for Brazilian NPPs based on the existing documents developed by the Foro IberoAmericano de Organismos Reguladores Radiológicos y Nucleares (FORO) and other existing documents in other countries. Support CNEN in the improvement and the application of this Brazilian guide.

Subtask 3.3: Technical Visit (optional)

Task 4 - Cooperation with CNEN in Emergency Preparedness

Sub-task 4.1: Emergency Room

CGRC needs to have available in its emergency room all the information necessary in case of emergency and related to the state of components, systems, emergency functions and related parameters given by the Computerized Information Systems of Angra (SICA), located at each NPP main control room. This information could be also helpful in operational supervision and in event analysis.

All the information is available at the plant (SICA), and CGRC seeks advice on how to select the relevant information related to emergency situations, to be available in its emergency room on-line and in real time. Moreover, CGRC needs advice about computerised infrastructure used in other countries for treating this information, and

regarding the concept and the development of the interface with the operational information available at the NPP main control rooms.

Sub-task 4.2: Follow-up of Task 4 of the BR/RA/01 Project (ARGOS project):

Support CGRC in the development of predefined source terms that are more representative for the Brazilian reactors, their fuel and their fuel cycle, as well as their subsequent use in ARGOS for the confirmation or refinement or redefinition of the management of adequate nuclear emergency planning zones.

In addition, further collaboration is proposed to enable ARGOS-BR and CNEN personnel to deal with the 3 different phases of an accident: prognosis, real time and post-accident. Some grounds may have resulted from the Fukushima accident. Lessons learned from the Fukushima accident should be included.

Task 5 - Cooperation with CNEN in follow up of Task 3 of the BR/RA/01 project – Severe Accident Management (SAM)

After the achievement of Task 3 of the BR/RA/01 project, the corresponding operator support project on the development of SAMG for Angra-2 might not have been finalised yet. CGRC will have to perform the safety evaluation of the Severe Accident Programs for Angra 2 and 3. In this case, further cooperation is needed in supporting the Beneficiary in the assessment of SAM, possibly also including the capacity to review and/or revise MELCOR nodalizations used in both NPPs.

The role of the Consultant will be limited to provide oversight and direction to the Beneficiary who will be fully responsible for the assessment.

Task 6 - Cooperation with CNEN in follow up of Task 2 of the BR/RA/01 project (Safety of digital instrumentation and control (I&C) systems)

After the achievement of Task 2 of the BR/RA/01 project, and as the Angra-3 I&C components will be defined, CGRC will have to perform safety evaluations and supervise the construction and commissioning of the Digital System.

Cooperation is needed for specific safety analyses, inspections and commissioning in support of the licensing of the digital I&C systems, the man-machine interface and the information systems important to safety (covering normal and emergency situations).

The role of the Consultant will be limited to provide oversight and direction to the Beneficiary who will be fully responsible for the assessment.

3.3. Risks and assumptions

No critical institutional factors liable to affect the effectiveness / efficiency of implementation and the sustainability of the results. No specifically identified risks (institutional, legislative...).

3.4. Crosscutting Issues

In general, the project approach naturally addresses cross-cutting development issues, as it is part of human and environmental protection programmes.

3.5. Stakeholders

The main stakeholder is the "National Regulatory Nuclear Energy Commission" (CNEN).

4. IMPLEMENTATION ISSUES

4.1. Method of implementation

Centralised direct management

A Financing Agreement will be signed with the beneficiary country.

4.2. Procurement and grant award procedures

All contracts implementing the action must be awarded and implemented in accordance with the procedures and standard documents laid down and published by the Commission for the implementation of external operations, in force at the time of the launch of the procedure in question.

Participation in the award of contracts for the present action shall be open to all natural and legal persons covered by the INSC. Further extensions of this participation to other natural or legal persons by the concerned authorising officer shall be subject to the conditions provided for in Article 14 of the Instrument.

4.3. Budget and calendar

Total estimated EU budget: €2 million

Estimated contract duration: 36 months

Type of contract(s): Service

4.4. Performance monitoring

The project will be subject to Results Oriented Monitoring (ROM) providing valuable insights for each specific task but also on the performance of the contractor on the global aspect.

Next to ROM the project will be monitored internally using traditional project management Key Performance Indicators (KPI), such as:

- Achievement of milestones,
- Progress reports and technical reports,
- Use of resources.

The long term aspects will be based on Key Performance Indicators to be specified in the Terms of Reference (ToR). They will be defined so as to quantify the medium-long term impact of the Project. The implication of the partner country in this evaluation exercise is important for the sustainability of the activities.

Possible specific KPIs could be:

- Number of "PSA" procedures fully reviewed,
- Number of "Deterministic safety Assessment" reviewed,
- Training programme (material, number of staff trained).

Each of the KPIs should be amenable to an exercise of goal setting, whereby milestones for the values of the KPI can be set in conjunction with global strategic plans.

4.5. Evaluation and audit

The project will be monitored in compliance with standard procedures. Monitoring and assessment should be based on periodic assessment of project activity progress, achievement of project outputs and its objectives.

In addition to the follow-up and controls carried out on the spot, as necessary, by the Commission's services, including the European Antifraud Office (OLAF) and the Court of Auditors, projects shall be monitored on a regular basis by appropriately qualified specialists based in the field. Independent ex-post evaluations will be

conducted periodically, in order to assess the relevance, effectiveness, efficiency and impact of the programme.

4.6. Communication and visibility

Visibility activities will be implemented according to well-defined standards and rules: the EU visibility guidelines for external actions. These guidelines are a part of the contractual obligations of implementing partners/Consultants and must therefore be carried out in the same way as any other contractual element.

On a regular basis, the Consultant will submit Progress Reports to the European Commission. The Consultant shall pay particular attention to the confidentiality of the data.

Other deliverables dedicated to visibility may include:

- An inception press release at the start-up of the project;
- A final press release to be provided with the project final report;
- A final presentation meeting for the dissemination of the project results organised by the Consultant.

Other actions to disseminate results or increase the visibility of the EU action may be implemented in parallel to the present projects.

ANNEX III

ACTION FICHE FOR MEXICO

1. IDENTIFICATION

Title/Number	MEX3.01/12: Support to Mexico in the implementation of the “stress test” and severe accident management for Nuclear Power Plants according to EU experience		
EU contribution	€2.5 million		
Aid method / Method of implementation	Project approach: Centralised direct management		
DAC-code	23064	Sector	Nuclear Safety

2. RATIONALE

2.1. Sector context

The first EU policy priority in this field is "to support the promotion of an effective nuclear safety culture" in countries within and outside of the EU, in line with the principles of the Convention on Nuclear Safety.

In Mexico, the Laguna Verde Nuclear Power Station is the only nuclear plant in the country at present and has been in operation since 1990 in the State of Veracruz, on the coast of the Gulf of Mexico. It is operated by the national utility, the Federal Electricity Commission (CFE) and has 2 BWR type reactors of 682 MWe each, which under normal circumstances account for about 5% of the total power generation in the country. Since 1999, its current power rating was a “stretched” uprate performed of 5% over the original operating power. In February 2012, the plant has completed an “extended” power uprate which has achieved a 20% increase from its original rating.

In view of the Fukushima nuclear accident, it is of prime importance to the Mexican authorities and the nuclear power plant to perform a reassessment of the plant’s safety margins as implied in the safety analysis report and the probabilistic safety assessments for events and accidents beyond the design basis limits such as those that occurred at the Japanese nuclear site.

The National Institute for Nuclear Research (ININ), which serves as a technical support organisation on nuclear matters for the Mexican Ministry of Energy, and which performs studies and analyses for the nuclear power plant, considers it a valuable exercise to embark on such an assessment of the safety parameters of the Laguna Verde Nuclear Power Plant (LVNPP). All the necessary information would be obtained from the plant in this joint effort to determine its safety margins in severe events beyond design basis. It is considered that such an exercise would be beneficial to the plant to use as a basis for a work plan with the national regulator to develop the necessary guidelines and to evaluate the possible upgrades to the plant as necessary.

2.2. Lessons learnt

This project is part of the second wave of projects in Latin America and also for Mexico. The previous actions held in the Tacis countries have shown the importance

of a good preparation of the programmes and the documents related to the projects in order to enhance their implementation and efficiency.

2.3. Complementary actions

Mexico currently has an ongoing project with the International Atomic Energy Agency (IAEA) for the analysis of BWR reactors during severe accidents by modelling the effects of such events on the reactor core and on the primary containment using state of the art best-estimation computational methodologies and tools. This project is not directly related to the proposed European Commission project but is compatible and complementary in that it will allow performing specific analyses of reactor core and primary containment behaviour necessary to determine the safety margins of the plant in different severe accident scenarios. Together, the outcomes of both projects will help establish a solid infrastructure for safety analyses for nuclear power plants in Mexico.

In the field of Training and Tutoring, the multi-country projects MC3.01/10 and MC3.01/11 are available in order to provide a number of Training and Tutoring opportunities to the regulators and Technical Support Organisations (TSOs) in several countries, including Mexico.

2.4. Donor coordination

This action is self standing and is not to be linked to the potential actions of other donors or the IAEA. This project will be funded entirely by the European Community, and does not constitute an overlapping with other existing bilateral or international donor activities. No donor coordination is foreseen as the Community will remain the only fund provider besides the beneficiary country.

3. DESCRIPTION

3.1. Objectives

This project is aimed at contributing to meeting the Instrument for Nuclear Safety Cooperation (INSC) goals, as part of the Indicative Action Programme (IAP) 2013-2015.

The European Commission presented a Communication addressing the international challenge of nuclear safety and security³ in spring 2008, on the basis of which Council Conclusions on assistance to third countries in the field of nuclear safety and security⁴ provide the criteria to be used for selection of projects. This project fulfils these criteria.

The overall objective of the project is the enhancement and strengthening of a nuclear safety regulatory regime in Mexico in compliance with internationally used criteria and practices.

This contributes to the following objectives:

- enhancing the inspection and safety assessment capabilities for licensing activities;

³ Council Conclusions on assistance to third countries in the field of nuclear safety and security, 2913th TRANSPORT, TELECOMMUNICATIONS and ENERGY Council meeting Brussels, 9 December 2008.

⁴ COM (2008) 312 final of 22 May 2008 Communication from the commission to the Council and the European Parliament addressing the international challenge of nuclear safety and security

- the implementation of a comprehensive safety and risk assessment of the Mexican nuclear power plant, in line with similar assessments performed in EU countries (Post-Fukushima nuclear safety “stress tests”);
- enhancement of the safety culture within the nuclear plant by means of improving severe accident management documentation.

3.2. **Expected results and main activities**

It is expected that the Mexican nuclear institute (ININ), the LVNPP and the regulator CNSNS will acquire additional competence and experience in the domains identified in the proposed project.

Specifically, it is expected to have a report of the re-assessment of the Laguna Verde Nuclear Power Station’s safety margins in severe event scenarios involving the extended loss of electrical power, the extended loss of cooling capabilities or a combination of both, and conclusions regarding possible changes to the plant’s systems and to operational procedures to enhance the safety or to increase the robustness of the plant. Also ININ and the LVNPP will be supported in their development of severe accident management guidelines (SAMGs) for the NPP.

Prior to the implementation of the project the final list of activities will be defined in the Terms of reference with the help of EU experts.

Task 1- Comprehensive safety and risk assessment and determination of potential modifications to design and operational procedures to enhance safety under stress test scenarios.

The task involves the support to the Mexican stakeholders in the actual execution of the stress tests and analysis of its results according to the European Nuclear Safety Regulation Group (ENSREG) specifications. This task also includes a transfer of the important Lessons Learnt from the EU Stress Test exercise.

The scope of the comprehensive safety and risk assessment must include the analyses of the performance of the plant under different scenarios and identification of the safety margins as well as cliff edge effects for earthquake, for flooding, for loss of electrical power and loss of the ultimate heat sink and severe accident management.

A review of the safety system’s capabilities for the prevention or mitigation of severe accidents will be performed within this task in order to assess the safety system’s capabilities for the prevention or mitigation of severe accidents and to identify:

- provisions taken in the design basis of the plant and plant conformance to its design requirements;
- robustness of the plant beyond its design basis. For this purpose, robustness of safety related systems, structures and components and the effectiveness of the defense-in-depth concept have to be assessed; and
- any potential for modifications likely to improve the considered level of defense-in-depth, in terms of improving the resistance of components or strengthening the independence with other levels of defence.

Also support will be provided to Mexican personnel in order to increase their capabilities to perform the required analyses, including support to complete simulation models of Laguna Verde type BWR reactors to be used.

Task 2 - Review of generic SAMGs for BWR reactors and elaboration of specific SAMGs for the Laguna Verde plant.

The task objective is to define a methodology for the establishment and review of severe accident management guidelines (SAMGs) specific for the LVNPP, using generic SAMGs as a basis. This would include the selection of relevant accident scenarios, criteria for the selection of plant damage states that would lead to severe accidents, selection of parameters for monitoring, transfer of results into severe accident guidelines (flow chart and bases) for main control room operator decision-making. The task will also involve the development of related sample cases (sample applications) in PSA level 2 and in severe accident computer simulation, such as those involving primary containment overpressure and venting with and without hydrogen.

The task will include the review of selected existing LVNPP SAMGs for comments or modifications and the development of a selected set of severe accident management guidelines (SAMGs) and their integration into the emergency documentation system of the nuclear plant. Additionally, a methodology will be defined for the harmonisation of the SAMGs with existing emergency documents of the operator.

3.3. Risks and assumptions

No critical institutional factors liable to affect the effectiveness / efficiency of implementation and the sustainability of the results. No specifically identified risks (institutional, legislative...).

3.4. Crosscutting Issues

In general, the project approach naturally addresses cross-cutting development issues, as it is part of human and environmental protection programmes.

3.5. Stakeholders

The main stakeholders are the National Institute for Nuclear Research (ININ), the Laguna Verde Nuclear Power Plant (LvNPP) and the nuclear safety regulator (CNSNS).

4. IMPLEMENTATION ISSUES

4.1. Method of implementation

Centralised direct management

A Financing Agreement will be signed with the beneficiary country.

4.2. Procurement and grant award procedures

All contracts implementing the action must be awarded and implemented in accordance with the procedures and standard documents laid down and published by the Commission for the implementation of external operations, in force at the time of the launch of the procedure in question.

Participation in the award of contracts for the present action shall be open to all natural and legal persons covered by the INSC. Further extensions of this participation to other natural or legal persons by the concerned authorising officer shall be subject to the conditions provided for in Article 14 of the Instrument.

4.3. Budget and calendar

Total estimated EU budget: €2.5 million

Estimated contract duration: 36 months

The work by ININ will be the Mexican contribution to the project.

Type of contract(s): Service

4.4. Performance monitoring

The project will be subject to Results Oriented Monitoring (ROM) providing valuable insights for each specific task but also on the performance of the contractor on the global aspect.

Next to ROM the project will be monitored internally using traditional project management Key Performance Indicators (KPI), such as:

- Achievement of milestones,
- Progress reports and technical reports,
- Use of resources.

The long term aspects will be based on Key Performance Indicators to be specified in the Terms of Reference (ToR). They will be defined so as to quantify the medium-long term impact of the Project. The implication of the partner country in this evaluation exercise is important for the sustainability of the activities.

Possible specific KPIs could be:

- Number of "SAMG" procedures fully reviewed,
- Training programme (material, number of staff trained).

Each of the KPIs should be amenable to an exercise of goal setting, whereby milestones for the values of the KPI can be set in conjunction with global strategic plans.

4.5. Evaluation and audit

The project will be monitored in compliance with standard procedures. Monitoring and assessment should be based on periodic assessment of project activity progress, achievement of project outputs and its objectives.

In addition to the follow-up and controls carried out on the spot, as necessary, by the Commission's services, including the European Antifraud Office (OLAF) and the Court of Auditors, projects shall be monitored on a regular basis by appropriately qualified specialists based in the field. Independent ex-post evaluations will be conducted periodically, in order to assess the relevance, effectiveness, efficiency and impact of the programme.

4.6. Communication and visibility

Visibility activities will be implemented according to well-defined standards and rules: the EU visibility guidelines for external actions. These guidelines are a part of the contractual obligations of implementing partners/Consultants and must therefore be carried out in the same way as any other contractual element.

On a regular basis, the Consultant will submit Progress Reports to the European Commission. The Consultant shall pay particular attention to the confidentiality of the data.

Other deliverables dedicated to visibility may include:

- An inception press release at the start-up of the project;
- A final press release to be provided with the project final report;

- A final presentation meeting for the dissemination of the project results organised by the Consultant.

Other actions to disseminate results or increase the visibility of the EU action may be implemented in parallel to the present projects.

ANNEX IV

ACTION FICHE FOR THE CHERNOBYL SHELTER FUND

1. IDENTIFICATION

Title/Number	CSF2012 - EU contribution to the Chernobyl Shelter Fund		
EU contribution	€35.3 million		
Aid method / Method of implementation	Project approach: Joint management		
DAC-code	23064	Sector	Nuclear Safety

2. RATIONALE

2.1 Sector context

The INSC Revised Strategy 2010-2013 (C/2009/9822) and Indicative Programme 2012-2013 (to be approved soon) constitute the strategic framework for AAP2012. Contributions to international donor funds, including the Chernobyl Shelter Fund (CSF) and the Nuclear Safety Account (NSA), are foreseen as important components of the Commission's Nuclear Safety program.

The Chernobyl Shelter Fund (CSF) is an international fund managed by the European Bank for Reconstruction and Development (EBRD). The Fund was created for the realisation of the Shelter Implementation Plan (SIP), which includes major projects to remediate the consequences of the 1986 nuclear accident in Chernobyl. Among these, the realisation of the New Safe Confinement (NSC) is the most important and is in the construction phase

The SIP addresses the strategy and plan for the conversion of the existing Chernobyl shelter into a stable and environmentally safe system. The SIP was developed in 1997 by a group of Western and Ukrainian experts and financed by the TACIS Program and the US Department of Energy. Approved and supported by Ukraine, the G7 and EU, the SIP provided the roadmap to the implementation of remedial activities and a basis for financial contributions for its implementation.

The CSF was established at the end of 1997, and is managed by the EBRD on behalf of and under the supervision of the Assembly of Contributors. Twenty-three countries and the European Commission are represented in the Assembly, which in general meets twice a year.

A framework agreement between the EBRD and Ukraine was signed on 20.11.1997 and ratified by the Ukrainian Parliament on 04.02.1998. A Joint Committee was constituted to manage the project, as well as an International Advisory Group (IAG).

The EU is the largest contributor to the CSF, its contributions amounted to some €310 million by the end of 2011, corresponding to the cumulative amounts of three pledges: €90.5 million (New York, November 1997), €100 million (Berlin, July 2000) and €49.1 million (London, May 2005), respectively, plus the initial instalments of the fourth pledge (Kiev, April 2011, see below).

At the Assembly of Contributors in July 2010, the Project Management Unit (PMU) and the contactor for the New Safe Confinement (Novarka) made detailed presentations justifying the cost increases and the measures that had been taken to minimize them. The Bank presented the financial situation. It was subsequently acknowledged by the Contributors that the financial shortfall to complete the projects amount to €604 million for the projects under the CSF and €137 million for the projects under the NSA (some €740 million in total).

The situation is critical for the CSF, unless fresh payments are made to the fund in the near future it will be necessary to demobilize the contractors during the second half of 2011. For the NSA it is estimated that the funds currently available are sufficient to cover the expenditure over the next two years.

There is an agreement in principle for a contribution in the order of €400 million to both Funds by the former G7 plus a substantial contribution by Russia. According to the historical burden-sharing, the EU's contribution would amount to some €110 million for both funds combined.

At the Pledging Conference in Kiev on 19 April 2011 the Commission pledged the agreed €110 million on behalf of the EU. However the total of the pledges by the donors fell some € 29 million below the €550 million target above which the EBRD would contribute €190 million to cover the totality of the €740 million shortfall. In order to definitely close the issue of underfunding of the Chernobyl projects and the G8 commitment, a number of G8 members including the Commission agreed to make complementary pledges. In accordance to the historical burden share the Commission agreed to pledge an additional €12.1 million, as a result the 2011 EU pledge amounts to €122.1 million in total.

2.2 Lessons learnt

The Court of Auditors in its 2008 audit report found that that there was not sufficient real time monitoring of the Chernobyl projects by the donors to permit them to act promptly, if the circumstances so require. As a first step to solve the problem the Commission helped to create the G8 Nuclear Safety and Security Group (NSSG) – EBRD *Chernobyl Contact Group*, which meets regularly (4-6 times per year) and keeps the information flowing through correspondence or conference calls, as needed. The Group reviews the progress of the projects and has intervened, in particular with the Ukrainian authorities, when required.

As the projects are now in the crucial construction phase, during which problems and delays may be rather costly, some donors (the EU and the US in particular) decided that a more continuous and on-site specialized monitoring would be required, this would be done by a specialist monitoring consultant. In order to fund this consultant it was proposed to create the 'Chernobyl Monitoring Account'. The donors would pay their contributions to the Account in the same way as they do to the CSF (same projects and part of the same donors). The reason why the funding of the consultant was not done under the CSF is that the Monitoring Account covers the projects under both the CSF and the Nuclear Safety Account (NSA) and only a limited number of donors participates in the funding effort.

2.3 Complementary actions

The Fund financed the necessary research and engineering, infrastructure and preparatory works to achieve the SIP objectives, as well as stabilisation measures

inside and outside the shelter to minimise the risk of the old structure collapsing, these measures were successfully completed in 2008.

The detailed design for the New Safe Confinement is being finalised and work on the foundations is complete. Delivery of the first batch of structural steel for the construction of the confinement was made in March 2012. This allowed the assembly work to begin on site. An official ceremony to launch the assembly phase was held at the site on 26 April 2012.

Other activities at the Chernobyl site include the realisation of an Industrial Complex for Solid Radwaste Management (ICSRM), which was financed under the TACIS programme and will provide for treatment, conditioning and safe storage of solid waste deriving from the realisation of the NSC. The completion of the ICSRМ was achieved in February 2009. The establishment of other ancillary radwaste management facilities were funded under the TACIS programme and the INSC.

A Liquid Radwaste Treatment Plant (LRTP) and an Interim Storage Facility for spent fuel (ISF 2) are funded by the Nuclear Safety Account (NSA), another multilateral fund, which is also managed by the EBRD. The LRTP is nearing completion and construction phase under the contract with Holtec has started.

The Commission presented a first progress report on the implementation of the CSF in October 1999⁵, a second report in September 2001⁶, a third report in July 2004⁷ and a fourth report in December 2007⁸.

2.4 Donor coordination

An Assembly of Contributors monitors the implementation of the CSF. The Commission services are actively involved in the works of the Assembly, on behalf of which the CSF is managed by the EBRD.

The G8 NSSG – EBRD Contact Group follows the implementation of the projects, the financial situation and was instrumental in establishing the need for additional funding and the organization of pledges.

For the technical aspects of the SIP, the EBRD is supported in fulfilling its role effectively and in accordance with scientific standards by the International Advisory Group (IAG), constituted of twelve experts who provide the highest level of independent technical advice and consultancy.

3. DESCRIPTION

3.1 Objectives

The objective of the present action is to provide a further contribution of €35.3 million to the Chernobyl Shelter Fund as an instalment of the 2011 pledge. The EU's 2012 contribution was foreseen in the Multiannual Indicative Programme for 2012-2013. The balance of the EU's 2011 pledge will be made under the Action Programmes for 2013.

⁵ COM(1999)470 of 12.10.1999

⁶ COM(2001)251 of 29.05.2001

⁷ COM(2004)481 of 14.05.2004

⁸ COM(2007)825 of 19.12.2007

3.2 Expected results and main activities

Delays due to the complexity of the project have been experienced but the latest information provided to the Assembly of Contributors maintains the completion of the NSC in 2015.

The present EU contribution is necessary for the continued implementation of the projects funded by the CSF according to the identified needs. The timely transfer of this contribution to the fund will ensure continuity in project implementation with further funds being made available by other donors.

3.3 Risks and assumptions

The main risk for the completion of the SIP projects is availability of funds from international donors. The situation was aggravated by considerable cost increases, particularly for items for which the price could not be precisely defined at the time of the tender for the NSC (provisional sums items), and delays in the implementation of the project which inevitably result in a further escalation of costs. The 2011 pledges cover the totality of the identified financial shortfall; as such they constitute the last round of pledges by the international community to the Chernobyl funds.

Other potential risks to be taken into account include the timely licensing approval, the correct performance of the NSC contractor and a stable institutional framework for the project to be implemented according to the agreed revised cost and schedule.

3.4 Crosscutting Issues

Not applicable.

3.5 Stakeholders

The main stakeholders are the EBRD and the Assembly of Contributors. The beneficiary of this Joint Project is the Ukrainian Government; the end-user is the Chernobyl Nuclear Power Plant.

4 IMPLEMENTATION ISSUES

4.1 Method of implementation

The contribution to the Fund will be implemented using a joint management approach with the signature between the European Commission and the EBRD of a contribution agreement. The EBRD and the rules of the CSF fully respect the obligations imposed by the Financial Regulation concerning joint management actions with international organisations.

An assessment of the EBRD procedures was performed by the Commission . A "four-pillar-assessment" has been launched. In anticipation of the results of this assessment, required under Article 53d of the Financial Regulation, the authorising officer deems that, based on the problem-free cooperation with the EBRD, joint management can be proposed and a Contribution Agreement can be signed in accordance with the provisions laid down in Article 43 of the Implementing Rules to the Financial Regulation.

4.2 Procurement and grant award procedures

All contracts implementing the action shall be awarded and implemented in accordance with the procedures and standard documents laid down and published by the EBRD.

4.3 Budget and calendar

Total estimated EU budget: €35.3 million

Type of contract(s): Implementation contract

4.4 Performance monitoring

This project is implemented by the EBRD under the monitoring of the Assembly of Contributors.

The G8 NSSG – EBRD Contact Group follows closely the implementation of the SIP as recommended by the Court of Auditors. In addition it is foreseen that the projects will be followed by a site Monitoring Consultant which will concentrate, in particular, on the cost and schedule of the projects.

4.5 Evaluation and audit

Financial transactions and financial statements shall be subject to the internal and external auditing procedures laid down in the Financial Regulations, rules and directives of the EBRD.

4.6 Communication and visibility

The EBRD shall take all appropriate measures to publicise the fact that this project has received funding from the EU (<http://www.ebrd.com/index.htm>).

In addition, other actions to disseminate results and increase the visibility of the European Union's action may be implemented in parallel by the European Commission.

Such visibility activities will be implemented according to well-defined standards and rules: the Communication and Visibility Manual for European Union External Actions.

ANNEX V

ACTION FICHE FOR IRAQ

1. IDENTIFICATION

Title/Number	IQ.4.01/12 - Equipment of a radiochemical laboratory and establishment of a mobile radiochemical laboratory		
EU contribution	€4 million		
Aid method / Method of implementation	Project approach: Centralised direct management		
DAC-code	23064	Sector	Nuclear Safety

2. RATIONALE

2.1. Sector context

The Iraq Decommissioning Programme is carried out under the responsibility of the Ministry of Science and Technology (MoST), who is the waste management operator in Iraq and the license holder for the ten Iraqi nuclear sites (all presently shut-down and most of which heavily damaged). The Iraqi nuclear regulator is the Radiation Protection Centre (RPC), depending on the Ministry of the Environment (MoEN); in addition, the Iraqi Radioactive Sources Regulatory Authority (IRSRA) is responsible for both orphan radioactive sources (which represent a serious safety and security concern) and for the correct management of new radioactive sources that may be imported into Iraq for medical and industrial applications.

In the past few years the progress registered in the implementation of the Iraq Decommissioning Programme was impressive. The related activities were mostly concentrated on the Al-Tuwaitha site (by far the largest nuclear site in the country) and concerned the facilities that presented a lower level of contamination. Ten nuclear sites in Iraq need to be decommissioned, the biggest one is Al-Tuwaitha which has 18 facilities and storage places. This approach has allowed for the transfer of expertise and best practices in dismantling and radioactive waste management techniques to Iraqi engineers, while performing activities that entail a lower radiological risk. Iraqi scientists and engineers are therefore now better equipped to address the problems related to the dismantling of the facilities with a higher contamination level and responsibly manage the resulting radioactive waste.

Many of the nuclear facilities on the Al-Tuwaitha site were originally provided with the support of France, Italy and the Soviet Union in the 1960s and 1970s. During the turmoil within Iraq over the last decade and longer, most of the records, plans and documentation for these facilities have been lost or destroyed. France, Italy and the Russian Federation have agreed to examine their historical records and make available information relevant to the decommissioning activities.

The International Atomic Energy Agency (IAEA) coordinates a programme of international support for the Iraq Decommissioning Programme aimed at ensuring that best international experience and practice is brought to bear on this difficult challenge. Many governments and supporting national organisations have provided technical

expertise, supporting visits to their nuclear sites and facilities and training for Iraqi staff in order to help build decommissioning and regulatory capability.

In this framework, several donor countries have provided support to the MoST, RPC and IRSRA. Germany and France have hosted visits to their decommissioning and waste management facilities in order to assist Iraqi experts to develop their waste management strategy for the materials arising from the decommissioning programme.

Ukraine supports the radiological assessment of characterisation samples (through a programme based at its International Radioecology laboratory) and a training programme on the characterisation of contaminated facilities.

The USA has provided extensive support for this programme, both through the IAEA and through a bilateral programme with Iraq, the US Department of State being the national focus for this activity. Extensive input has been provided by the US Nuclear Regulatory Commission, mainly in supporting the development of the nuclear regulatory framework. Sandia Laboratories and Texas Technical University have provided expertise in decommissioning, characterisation, radioactive waste management and health surveillance.

Since 2009, the EU has supported the Iraq Decommissioning Programme through a dedicated capacity building effort, in the framework of the Instrument for Stability. This project has aimed at building capacity in decommissioning of nuclear facilities and radioactive waste management through training of Iraqi scientists and engineers and the provision of waste characterisation and radiation protection equipment. The overall budget devoted to the above activities is about €3 million.

In this context, it has been approved in the Annual Action Programme 2011 a project to establish a Low and Intermediate Level Waste (LILW) disposal facility, for implementation of the Iraq Decommissioning Programme. The facility could be sited within the Al-Tuwaitha complex, in order to minimise the safety and security risks related to the transport of waste.

The completion of a radio-analytical laboratory, whose realisation is presently ongoing, in cooperation with the US, and the establishment of a mobile radiochemical laboratory have also been indicated among the top priorities, in order to strengthen the Iraqi regulatory authority and the safe and secure handling and management of orphan radioactive source.

2.2 Lessons learnt

The European Commission has acquired considerable experience in contributing to the Iraq Decommissioning Programme through the capacity building project adopted in the framework of the 2009 Annual Action Programme of the Instrument for Stability (Priority 1: chemical, biological, radioactive and nuclear materials and agents (CBRN) risk mitigation).

The cooperation with Iraqi authorities has been excellent and solutions have been readily found for the problems related to the implementation of this action, particularly its supply component.

The long-lasting cooperation with other donors, coordinated through the IAEA has also provided excellent examples that are regularly shared among the donors, in biannual meetings organised by the IAEA.

2.3 Complementary actions

This project is complementary to the capacity building activities implemented in the framework of the Instrument for Stability.

In addition, links with activities carried out by other international donors are identified; the overall effort displayed by the US Department of State having been, so far, the single most relevant contribution.

A close relationship will be maintained with the Commission services in charge of the implementation of the Instrument for Stability (IfS), the EEAS geographical desks and with the EU Delegations, in order to help maintaining a coherent approach vis-à-vis third countries. Possible synergies between the INSC and the IfS will be examined notably in the framework of the IfS Regional CBRN Centres of Excellence initiative.

2.4 Donor coordination

A coordination mechanism is already in place, through the IAEA project supporting the Iraq Decommissioning Programme. This provides a forum for the regular exchange of experience and information concerning the objectives and results of bilateral cooperation programmes with Iraq.

Further coordination can be pursued with the bilateral activities carried out by EU Member States, while excellent communication has already been established with the US Department of State.

3. DESCRIPTION

3.1 Objectives

The project is aimed at contributing to meeting the INSC goals and is in line with the INSC priorities on nuclear waste management, decommissioning and remediation of former nuclear sites as described in the Nuclear Safety Strategy Paper⁹.

The overall objective of the project is the safe decommissioning of Iraqi shut-down nuclear installations and also directing all the activities towards waste minimization and the long-term goal of permanent, safe disposal.

The general objectives include the following:

- Supporting the development of a new nuclear law and implementing regulations, together with the formation of a new regulatory body building from the experience of the existing regulators, thereby ensuring a proper legal basis for effective regulatory scrutiny and control of the decommissioning programme and continue assistance as Iraq drafts and passes its own nuclear law (building upon work done previously in the project).
- Supporting and improving the ongoing and proposed decommissioning activities
- Supporting the ongoing radioactive waste management policy and strategy
- Developing the radioactive waste disposal activities and suggesting areas where further work is required in accordance with IAEA safety standards and guidance

⁹ Commission Decision 8 August 2007 C(2007)3758

- Assisting in developing a skilled workforce and a sustainable infrastructure that fully supports the mission and goals of the concerned Iraqi organizations, including building the capacity and experience of Iraqi personnel and organizations in the field of decommissioning of nuclear facilities, radioactive waste management, radiation protection and environmental protection.
- Assisting with the establishment of mechanisms for Iraq to ‘reach out’ to, and cooperate with, other Member States on decommissioning of nuclear facilities, radioactive waste management, radiation protection and environmental protection activities.

3.2 Expected results and main activities

The expected outcome is to strengthen the national capacity for environmental protection against radiological hazards through the successful decommissioning of nuclear facilities and remediation of contaminated sites.

In the short-term, the immediate objectives are:

a. the refurbishment of a radiochemical laboratory located inside the Al-Tuwaittha Nuclear Complex (AIT NC) and develop new functionalities with the specific equipment for

- i. Determination of uranium concentration
- ii. standard characterization of radioactive waste,
- iii. standardisation of quality assurance and quality control for instruments and procedures, including measurements and records
- iv. the treatment of naturally occurring radioactive materials (NORM);

b. the design, construction, commissioning and testing of a mobile radiochemical laboratory, to be functionally integrated with the laboratory of the AIT NC as well as used in for the decommissioning and monitoring activities of the other ten nuclear sites. The establishment of such a laboratory can be a unique opportunity for the entire region.

It will comprise the following main activities:

3.2.1. Task 1 Assessment of the needs for the radiochemical laboratory

- to assess the current status of the radiochemical laboratory: (buildings, rooms, equipment, etc)
- to define the analytical capabilities needed based upon the nature of the hazards to the environment, and current best practices.
- to define the tools, techniques, and equipment for the laboratory (including sample preparation, handling, conditioning and storage; hardware and software for analysis and/or storage and/or transmission of the measurements results, etc)
- To define the layout of the laboratory.

3.2.2. Task 2 Supply and installation of equipment in the radiochemical laboratory

- To prepare the Technical Specifications for the equipment.
- To prepare the Technical Specifications for the refurbishment of the laboratory and installation of the equipment.

- Refurbishment works, supply, installation and test of the equipment

3.2.3. Task 3 Design of mobile radiochemical laboratory

- Development of design criteria
- Development of the basic design of the facility;
- Development of Preliminary Safety Analysis Report for the facility and other necessary preliminary documentation
- Finalisation of the engineering design of the facility;
- Finalisation of the Safety Assessment Report for the facility and other necessary documentation.

3.2.4. Task 4 Equipment of mobile radiochemical laboratory

- To prepare the Technical Specifications for the equipment.
- To prepare the Technical Specifications for the mobile laboratory and installation of the equipment.
- Supply, installation and test of the equipment

This project is consistent with the criteria of the Council Regulation establishing the Instrument for Nuclear Safety Cooperation (INSC)¹⁰ and with the revised multiannual strategy¹¹ and indicative programme¹².

3.3 Risks and assumptions

A close and effective cooperation with Iraqi authorities is assumed. This must include the MoST (radioactive waste management operator and eventual operator of the disposal facility) and the RPC (the nuclear regulator). Due to the presently ongoing discussion on the role of the regulator(s) in Iraq, continued contacts will have to be maintained with the Iraq Radioactive Sources Regulatory Authority - IRSRA.

Based on present experience in managing the ongoing cooperation project with Iraq in the domain of decommissioning of nuclear facilities, the risk of a lack of communication with the involved Iraqi stakeholders is considered very low. Nonetheless, the necessary interfaces will be put in place to ensure further reduce such risk, through the establishment of the necessary measures (including, e.g., scheduled periodic meetings and workshops).

The coordination with other international initiatives related to the Iraq Decommissioning Programme will be ensured through the availability of the relevant information, as discussed in the existing international fora.

3.4 Crosscutting Issues

The project is part of a global programme aiming at the decommissioning of all nuclear installations in Iraq and the safe management of the resulting radioactive waste.

¹⁰ Council Regulation (Euratom) No. 300/2007 of 19 Feb 2007

¹¹ Commission Decision on Revised Strategy for Community Cooperation Programmes in the field of Nuclear Safety for the period 2010-2013

¹² Commission Decision on the Indicative Programme 2010-2011 for Community Cooperation Programmes in the field of Nuclear Safety

As such, the interfaces with other ongoing related projects (both funded by Iraq and in the framework of bilateral and multilateral international cooperation) will be ensured.

The project does not infringe human rights, gender equality or affect good governance in any obvious way.

3.5 Stakeholders

The beneficiary is the Government of Iraq.

The main end-user is the Ministry of Science and Technology and, in perspective, the forthcoming Iraq Atomic Energy Commission.

4. IMPLEMENTATION ISSUES

4.1 Method of implementation

Centralised direct management.

A Financing Agreement will be signed with the beneficiary country.

4.2 Procurement and grant award procedures

The project will be implemented by awarding one or more service and supply contracts.

All contracts implementing the action must be awarded and implemented in accordance with the procedures and standard documents laid down and published by the Commission for the implementation of external operations, in force at the time of the launch of the procedure in question.

Participation in the award of contracts for the present action shall be open to all natural and legal persons covered by the INSC Regulation.

4.3 Budget and calendar

Total estimated EU budget: €4 million

Estimated contract duration: 36 months maximum

Type of contract(s): Service and supply

4.4 Performance monitoring

The project will be monitored internally using Key Performance Indicators (KPIs), which are a standard project management tool. KPIs principally address project progress and cover issues such as:

- Achievement of milestones;
- Delivery of progress reports and technical reports;
- Use of resources.

The project will also be subject to Results Oriented Monitoring (ROM) which is a highly structured methodology based on relevance, efficiency, effectiveness, impact, and sustainability. In ROM, independent monitors gather data from key project documents and by interviewing relevant stakeholders.

The medium to long term impact of the project will be evaluated using measures to be defined in cooperation with the Iraqi partners and in cooperation with the IAEA. The aim here will be to assess the contribution of the project to improvements in the effectiveness of, and commitment to, the overall Iraqi programme for legacy

radioactive waste remediation, new industrial radioactive waste forms, and naturally occurring radioactive materials (NORM).

4.5 Evaluation and audit

The project will be monitored in compliance with standard procedures. Monitoring (Result Oriented Monitoring) and assessment should be based on periodic assessment of project activity progress, achievement of project outputs and its objectives.

In addition to the follow-up and controls carried out in the Beneficiary country, as necessary, by the European Commission's services, (including the European Antifraud Office (OLAF) and the Court of Auditors), the projects shall be monitored on a regular basis by appropriately qualified specialists based in the field. Independent evaluations will be conducted periodically in order to assess the relevance, effectiveness, efficiency and impact of the project.

4.6 Communication and visibility

Visibility activities will be implemented according to well-defined standards and rules: the EU visibility guidelines for external actions. These guidelines are a part of the contractual obligations of implementing partners/Consultants and must therefore be carried out in the same way as any other contractual element.

On a regular basis, the Consultant will submit Progress Reports to the European Commission. The Consultant shall pay particular attention to the confidentiality of the data.

Other deliverables dedicated to visibility may include:

- An inception press release at the start-up of the project;
- A final press release to be provided with the project final report;
- A final presentation meeting for the dissemination of the project results organised by the Consultant.

Other actions to disseminate results or increase the visibility of the EU action may be implemented in parallel to the present projects.

ANNEX VI

ACTION FICHE FOR KYRGYZSTAN

1. IDENTIFICATION

Title/Number	KG4.01/12 - Integrated environmental impact assessment (EIA) and feasibility study (FS) for the management and remediation of the Shekaftar uranium mining legacy site in Kyrgyzstan		
EU contribution	€1.5 million		
Aid method / Method of implementation	Project approach: Centralised direct management		
DAC-code	23064	Sector	Nuclear Safety

2. RATIONALE

2.1. Sector context

Uranium production in Central Asian countries between 1944 and 1995 has left behind a huge legacy of uranium mining and processing waste and abandoned conventional uranium mines. After 1995 most of the conventional uranium mines were closed. A preliminary assessment of the uranium production legacy sites in Central Asia has identified the priorities for sites remediation activities. The legacy site of Shekaftar in Kyrgyzstan is among the identified priority sites of Central Asia.

Significant quantities of waste rock and other uranium residues have accumulated near mining and processing sites in Kyrgyzstan, such as Mailuu-Suu, Shekaftar, Min-Kush, Kadji-Say, Ak-Tyuz and Orlovka. According to a preliminary assessment by the Ministry of Emergency Situations of Kyrgyzstan, there are thirty-five tailings dumps and twenty-five sites where waste rock piles have been accumulated, in Kyrgyzstan. Among these, thirty tailings dumps contain residues from historical uranium production whilst five storage facilities contain NORM (Naturally Occurring Radioactive Material) residues from production of non-ferrous metals.

After 1991 and prior to 1999, no monitoring or remediation activities were carried out at Kyrgyz uranium legacy sites. Since March 1999, these came under the authority of the Ministry of Emergency Situations of Kyrgyzstan, who is responsible for the establishment of surveillance and monitoring services, for the maintenance of protective fences and the management of remediation programmes.

Based on the risks associated with geotechnical instability of the tailings and waste piles in mountainous areas, which may potentially have a significant impact on the engineered features of the tailings dumps and the surrounding environment, the Mailuu-Suu, Ak-Tyuz, Min-Kush, Kadji-Say, Orlovka and Shekaftar uranium legacy sites are considered to be high priority for remediation being the sites with the highest risk category. Remediation activities at Mailuu-Suu are currently being addressed through funding provided by the World Bank. The site of Min-Kush is targeted under project KG4.01/11 integrated environmental impact assessment (EIA) and feasibility

study (FS) for the management and remediation of Min-Kush. The site of Ak-Tyuz has been transferred to a Canadian led mining consortium and all site liabilities are transferred to the balance sheets of this private consortium. This leaves Shekaftar as a priority remediation legacy site for the government of Kyrgyzstan, where the next step towards remediation is similar to the Min-Kush site, an integrated environmental impact assessment (EIA) and feasibility study (FS).

The Shekaftar site is located in Ala-Bukynsky District of Djalalabad Province, the site was worked from 1946 to 1957. There are 8 mining waste disposal areas here that contain about 700,000 cubic metres of low-radiation rock and low-grade ores. Houses with gardens are located in the vicinity and none of the dumps have been rehabilitated. Average exposure dose rate of gamma-radiation on the surface of the disposal areas is equal to 0.6 -1.5 $\mu\text{Sv/h}$ (60 -150 $\mu\text{R/h}$).

The villages of Shekaftar and Sumsar have a population of 6.500. The dumps located on the banks of the Sumsar river have been intensively eroded by the river, negatively affecting the living conditions of the population of the immediately downstream located village of Sumsar and other villages beyond.

The absence of vegetation on the surface encourages wind and surface erosion of the material and its subsequent export to the area of the Shekaftar and Sumsar settlements and the adjacent Fergana Valley.

Water samples collected at the Sumsar river upstream the mining area and downstream well beyond the village of Sumsar revealed an uranium concentration in the river downstream of the site being a factor three higher than the uranium concentration upstream of the site, clearly indicating significant and continuous uranium leaching from the piles by and into the river. This is confirmed by the decrease of the $^{234}\text{U}/^{238}\text{U}$ isotopic activity ratio from 1.77 upstream to 1.2 downstream of the piles.

A comprehensive characterization of the site, its continuous negative impact on health and living conditions for the downstream population and its risks for the downstream sections of the Sumsar river is lacking. "Medium to high risk" can be assumed as the result of initial risk estimations. Main factors are the risks of increased dose rates of the population by the free accessible dumps by Radon, Gamma radiation and direct ingestion and inhalation of contaminated material and by unauthorized use of contaminated materials for construction purposes. The uncontrolled transport of contaminated material by fluvial erosion, leading to pollution of the water downstream but also to sedimentation of contaminated materials at the shoreline downstream of the Sumsar river, needs to be avoided in all cases especially as it will have trans-border consequences.

A comprehensive assessment is needed to adequately characterize all the potential source terms, the contaminant exposure pathways and the potential receptors (human and environmental). This will be accomplished through an integrated environmental impact assessment (EIA) and feasibility study (FS) that will provide specific information on site conditions relative to geology, hydrology, exposure pathways, risk to human health and environment and the complex nature of the hazards at the site.

2.2. Lessons learnt

The European Commission first addressed the problem of legacy uranium mining in 1995, with a project that covered uranium mines and mills in Uzbekistan, Kyrgyzstan, Tajikistan, the Russian Federation and Ukraine, within the frame of the TACIS

Nuclear Safety programme. As a result of this project a first assessment of the remediation options and their ranking was achieved. Other studies were eventually carried out, which focussed on specific sites or areas.

More recently, the Commission has been actively involved in a regional initiative on the remediation of legacy of uranium mines and tailings that was launched by the United Nations Development Programme (UNDP) and which has also been supported by the International Atomic Energy Agency (IAEA), the Organization for Security and Co-operation in Europe (OSCE), the World Bank, the European Bank for Reconstruction and Development (EBRD) and the North Atlantic Treaty Organization (NATO). In January 2009, a team of high-level EU experts was appointed, to review and classify the available information on uranium mines, tailings and mills in the region, recommend remedial actions and prioritisation criteria and then propose projects accordingly. The final report of the above study, published in November 2009, is the basis for planning future related activities among the above donors, under the technical lead of the IAEA.

2.3. Complementary actions

In its addressing the issues related to specific legacy uranium mining sites, the project is complementary to the regional approach that is followed under project REG4.01/10, for the establishment of a legislative and regulatory framework for the remediation of uranium mining legacy sites in Central Asia, the establishment of a regional watershed monitoring system and capacity building in analytical techniques, training and education and information exchange.

Particular consideration will be given to the interfaces with projects KG4.01/11, TJ4.01/11 and TJ4.02/11. Special focus will be given on assuring that experiences gained in these projects will benefit the project KG4.01/12.

In addition, the project is closely related to activities ongoing or planned in Central Asian countries in the domain of chemical, biological radiological and nuclear material and agents (CBRN) risk mitigations, in the frame of the Instrument for Stability, namely in the fields of illicit trafficking of nuclear and radiological material and border control, and with other EU actions in the region in the environmental domain.

Finally, the project is intended to complement the ongoing effort of the international community (UNDP, IAEA, OSCE, EBRD and NATO) in addressing the overall problems related to legacy uranium mining sites in the region. The technical coordination among the related initiatives is assured through the IAEA, as part of project MC.01/10 (Contributions to IAEA Technical Cooperation and Nuclear Installation Safety projects in non EU countries).

See comments in previous AF A close relationship will be maintained with the Commission services in charge of the implementation of the Instrument for Stability (IfS), the EEAS geographical desks and EU Delegations, in order to help maintaining a coherent approach vis-à-vis third countries. Possible synergies between the Instrument for Nuclear Safety Co-operation (INSC) and the IfS will be examined notably in the framework of the IfS Regional CBRN Centres of Excellence initiative.

2.4. Donor coordination

In the framework of this specific project, only coordination with the partner country (Kyrgyzstan) will be sought. Nonetheless the project is itself a part of a much wider

collective effort on the remediation of legacy uranium sites in Central Asia. Coordination with all international donors presently active in this domain and with any potential future donors will be achieved through the mechanism that has been established within the related UNDP initiative and that will be further developed and enhanced in the frame of project MC.01/10, with the IAEA ensuring the technical consistency of projects funded by different donors and the appropriate contacts with the partner countries in Central Asia.

3. DESCRIPTION

3.1 Objectives

The general long-term objective of the project is the safe management and remediation of the uranium production legacy site of Shekaftar. In the short-term, the immediate objective of the project is limited to the development of an environmental impact assessment and the feasibility study of the related management and best suitable remediation activities. This will be achieved through the preparation of costed and integrated conceptual management and remediation plans for the Shekaftar site, including design criteria and standards for the eventual remedial works and a stakeholder engagement process. The EIA and FS including the technical specification will be designed to provide the appropriate level of clarity and details in order to proceed without unnecessary delay with the implementation of the remediation works.

3.2 Expected results and main activities

The project is expected to produce an integrated environmental impact assessment and feasibility study for the safe management and remediation of the site of Shekaftar. This will facilitate the next step which is remediation.

To this end, the project shall identify the legal and normative framework, achieve a comprehensive knowledge of the actual current condition of the site and its environmental surroundings (geological, hydrological, radiological, structures, etc), assess the relevant risks (including radiological, and chemical risks) and analyse the possible remediation options, justify the preferred remedial option, provide draft design criteria, based upon international standards and good practices. The project will also review the existing, or propose new, practices and procedures for the management of the site. The project development must involve the local stakeholders.

It will comprise the following main activities:

- A literature review and gap analysis;
- A comprehensive site characterization programme which will be based upon a characterization plan and will at a minimum address the following:
 - The development of an environmental baseline;
 - The physical and geochemical characterisation of radioactive and toxic waste material;
 - The characterisation of surface, groundwater and seepage;
 - The characterisation of soils and sediments;
 - The preparation of a hydro-geological assessment and a contamination transport model;

- The geotechnical and geophysical assessment of the site;
- The determination of radiological exposure of the public and of its significance; through the calculation of dose to potential receptors;
- An assessment of the technical integrity of the impoundments and safety on the sites;
- The identification and prioritisation of environmental, health and safety issues through risk assessment; and
- The justified selection of the preferred remedial option

In addition,

- The project should include the development of a maintenance plan and a thorough monitoring programme; and some initial maintenance recommendations based upon the studies
- The project must consult and engage the stakeholders; with the support of the local and national officials

The detailed feasibility portion of the project will produce the following:

- The development of remedial options and their optimisation, assessing their costs and environmental impacts;
- The preparation of design criteria, standards and technical specifications for the eventual remediation activities, with a level of detail sufficient to tender the remediation works without unnecessary delay.

The main expected results will consist in the determination of potential significant positive and negative, direct and indirect, immediate and long-term impacts, a thorough analysis of alternative remediation activities, a management plan to mitigate negative impacts, a monitoring plan for the site, a complete assessment of further needs for technical assistance, the involvement of local authorities, the population and other organisations present at the site, the identification of policy and institutional needs for implementing the recommendations issued in the frame of the project, in order to produce an integrated environmental impact assessment and feasibility study for the safe management and remediation of the site.

An important benefit of an implementation of the remediation works without unnecessary delay is that it would prevent that the EIA, FS and the technical specifications developed under this action will become obsolete due to an extended time gap between remedial preparation and implementation.

3.3 Risks and assumptions

The proposed activities form part of a much wider long-term programme on the management and remediation of legacy uranium mining sites in Central Asia that is developed and implemented by several international donors and national authorities in the partner countries. The activities comprised in the project have been chosen in keeping with the general strategic goals and the needs of end-users. In addition, close coordination with other international donors will be established.

Therefore, risks related to insufficient involvement of local and international stakeholders are considered to be minimised.

Of course, a risk to be taken into consideration consists in the possibility that the recommendations resulting from the project may not be attended in a future series of maintenance and remediation activities due to budgetary constraints and/or changes in the political priorities in the partner country. Such risk will be mitigated through the constant involvement of local stakeholders and by the coordination role envisaged for the IAEA.

As with any project, there may be commercial and technical risks associated with the implementation; to date, however, no specific risks have been identified that would constitute a significant obstacle to progress.

3.4 Crosscutting Issues

The project is part of a global programme that is being developed for the maintenance and remediation of legacy uranium mining sites in Central Asia. The remediation of the Shekaftar site and, at this early stage, its characterisation and the preparation of a programme for its safe maintenance and remediation will benefit the citizens of the partner country as well as the whole region, by improving safety and security and bringing the potential for a substantial reduction of present and future exposure of the public to sources of ionising radiation.

3.5 Stakeholders

The beneficiary is the Government of Kyrgyzstan.

The end-users are the local administrations and authorities of the Shekaftar site, including the responsible administrations in the Ministry of Emergency Situations as well as the local population.

4. IMPLEMENTATION ISSUES

4.1 Method of implementation

Centralised direct management.

A Financing Agreement will be signed with the beneficiary country.

4.2 Procurement and grant award procedures

Contracts will be awarded and implemented in accordance with the procedures and standards published by the Commission at the time of contract signature.

Participation in the award of contracts for the present action shall be open to all natural and legal persons covered by the INSC Regulation (un-capitalise these words please) Council Regulation (EURATOM) No 300/2007 of 19 February 2007 establishing an Instrument for Nuclear Safety Cooperation).

All contracts implementing the action must be awarded and implemented in accordance with the procedures and standard documents laid down and published by the Commission for the implementation of external operations, in force at the time of the launch of the procedure in question.

4.3 Budget and calendar

Total estimated EU budget: €1.5 million

Estimated contract duration: 24 months

Type of contract(s): Service

4.4 Performance monitoring

The project will be monitored internally using Key Performance Indicators (KPIs), which are a standard project management tool. KPIs principally address project progress and cover issues such as:

- Achievement of milestones;
- Delivery of progress reports and technical reports;
- Use of resources.

The project will also be subject to Results Oriented Monitoring (ROM) which is a highly structured methodology based on relevance, efficiency, effectiveness, impact, and sustainability. In ROM, independent monitors gather data from key project documents and by interviewing relevant stakeholders including the beneficiaries.

The medium to long term impact of the project will be evaluated using measures to be defined in cooperation with the Kyrgyz partners and in cooperation with the IAEA. The aim here will be to assess the contribution of the project to improvements in the effectiveness of, and commitment to, the overall programme for legacy uranium sites remediation.

4.5 Evaluation and audit

The project will be monitored in compliance with standard procedures. Monitoring (Result Oriented Monitoring) and assessment should be based on periodic assessment of project activity progress, achievement of project outputs and its objectives.

In addition to the follow-up and controls carried out in the Beneficiary country, as necessary, by the relevant European Commission services, (including the European Antifraud Office (OLAF)) and the Court of Auditors, the projects shall be monitored on a regular basis by appropriately qualified specialists based in the field. Independent evaluations will be conducted periodically in order to assess the relevance, effectiveness, efficiency and impact of the project.

4.6 Communication and visibility

Visibility activities will be implemented according to well-defined standards and rules: the EU visibility guidelines for external actions. These guidelines are a part of the contractual obligations of implementing partners/Consultants and must therefore be carried out in the same way as any other contractual element.

On a regular basis, the Consultant will submit Progress Reports to the European Commission. The Consultant shall pay particular attention to the confidentiality of the data.

Other deliverables dedicated to visibility may include:

- An inception press release at the start-up of the project;
- A final press release to be provided with the project final report;
- A final presentation meeting for the dissemination of the project results organised by the Consultant.

Other actions to disseminate results or increase the visibility of the EU action may be implemented in parallel to the present projects.

ANNEX VII

ACTION FICHE FOR MALAYSIA

1. IDENTIFICATION

Title/Number	MY3.01/12 - Enhancing the capacity and effectiveness of the regulatory body of Malaysia and developing its national radioactive waste management strategy		
EU contribution	€2 million		
Aid method / Method of implementation	Project approach: Centralised direct management		
DAC-code	23064	Sector	Nuclear Safety

2. RATIONALE

2.1. Sector context

A Partnership and Cooperation Agreement (PCA) between Malaysia and the EU is currently being negotiated and will establish the political framework for cooperation. Several domains for cooperation are identified in the Agreement including countering the proliferation of weapons of mass destruction and combating money laundering and the financing of terrorism, both of which fall within the scope of the Instrument for Stability. In addition, the Agreement foresees cooperation the field of science and technology aimed at encouraging exchanges of information and know-how on the implementation of policies and programmes in areas of mutual interest such as energy, transport, environment and natural resources, and health. To this end, the cooperation promotes the acceleration of the accession to the Nuclear Safety Conventions, the application of best international standards and practice for nuclear safety, security and safeguards, all of which fall within the scope of the Instrument for Nuclear Safety Cooperation (INSC).

Enhancing the capacity and effectiveness of the regulatory body and developing a national radioactive waste management strategy

The installed electricity generating capacity in 2010 on peninsular Malaysia was about 22 GW. Demand is forecast to grow at about 3 to 4% per year with projected needs of about 28 GW by 2020. Much of the current demand is met by gas-fired (> 50%) and coal-fired (> 30%) power stations with much of the remainder from hydro and oil. Natural resources are dwindling; Malaysia is expected to become a net oil importer by 2014 and currently known indigenous oil and gas reserves are expected to be depleted by 2028. Gas usage for electricity production has been capped and a moratorium placed on the construction of new gas-fired power plants. Significant potential for hydro-generated electricity exists on Sarawak (on the island of Borneo). However, plans to install a transmission line to the Malaysian peninsula (about 700 km) have been abandoned, at least temporarily, for a combination of technical, financial and political reasons. Renewable energy has limited potential

and, in the short term, increased demand will have to be met by electricity generated from imported coal with implications for green-house gas emissions.

Against this background, a decision was taken in June 2009 by the Malaysian Cabinet for nuclear energy to be one of the options for electricity generation after 2020, especially for Peninsula Malaysia. In June 2010 the Government adopted the 10th 5-year Malaysia Plan which incorporated a new National Energy Policy with nuclear energy as a long term option for the Peninsula. The National Nuclear Policy was adopted by the Cabinet in July 2010 and a decision was taken later that year to establish a Nuclear Energy Programme Implementing Organization (NEPIO). The Economic Council in 2010 agreed to expedite the implementation of nuclear energy with a view to the first unit being in operation by 2020. Potentially suitable sites were identified and reserved, lead times for development were determined as well as a deadline for a Governmental decision on the use of nuclear power.

The Malaysian Nuclear Power Corporation (MNPC) was incorporated in January 2011 as the NEPIO. It is spearheading and coordinating the implementation of a nuclear energy development programme for Malaysia and taking the necessary actions to realize the construction of the first nuclear power plant. One of its immediate activities is to select preferred candidate sites by June 2011. Potential sites are currently being investigated with the intention of proposing 3 candidates. MNPC is also preparing to launch calls for tender to appoint an international consultant to undertake a feasibility study, a detailed site investigation and to prepare the bid documentation for the call for tender for construction of a nuclear power plant. A roadmap for the introduction of the first nuclear power plant has been prepared and envisages completion of the site licence process by the beginning of 2013, issuing a call-for-tender for construction of the plant by mid 2013, obtaining a construction license by 2016 and an operating license by 2021.

Much effort is also being devoted to ‘fast-tracking’ the signature and accession to and ratification of a number of relevant international nuclear treaties and conventions and, in parallel, enacting or amending national legislation to bring them into force in a timely manner. This will demonstrate Malaysia’s commitment to adopting broadly agreed international standards and achieving a high level of nuclear safety as well as contributing to public confidence.

Malaysia has long experience in the safe use of radiation and radioactive materials in industry, health care, agriculture, food safety and research. Medical applications of ionising radiation include 2000 diagnostic X-ray facilities, 20 radiotherapy facilities and 8 nuclear medicine facilities. Industrial uses of ionising radiation include 2 neutron generators, 51 industrial radiography facilities, 4 mineral extraction and processing facilities and more than 700 facilities using radiation for analysis and research. The Malaysian Nuclear Agency (Nuclear Malaysia), whose role is to introduce and promote the application of nuclear science and technology for national development, operates a number of facilities including a TRIGA Mark II (1 MW) research reactor, 3 irradiation plants and a radioactive waste management centre. Nuclear Malaysia is expected to fulfill an important role in providing technical support to the MNPC (NEPIO) in the development of the nuclear energy programme and, in due course, to the operator of the nuclear power plant.

The Atomic Energy Licensing Board (AELB) was established in 1985 under the Atomic Energy Licensing Act of 1984. It reports to the Ministry of Science, Technology and Innovation and is responsible for regulating the safety of all radiation and nuclear applications in Malaysia except those used for medical purposes. In addition, AELB is responsible for ensuring the security and safeguarding of all radiation and nuclear technologies in Malaysia. Currently, AELB has about 150 staff of which about 45 are graduates or have higher educational qualifications. The staffing levels and experience within AELB are sufficient for the effective regulation of radiation safety; however, both will need to be increased significantly in order to ensure that it is able to fulfill its regulatory obligations related to the safety of nuclear power plants in a timely and effective manner. Staffing levels are expected to increase substantially in the next few years, perhaps by as much as a factor of two to three by 2015; such a substantial increase will require a well-conceived and timely program for the development of human resources if the necessary in-house skills and competence are to be established in the requisite timescale. Inevitably, in the short term and pending the development of its own in-house competence, AELB will need to make use of technical support from outside Malaysia.

Cooperation, under the auspices of the INSC programme, will make an important contribution to the timely development of an effective regulatory regime and framework for nuclear safety in Malaysia that are broadly consistent with the best international standards and practice.

The cooperation should also enhance Malaysia's ability for fast accession to relevant international nuclear treaties, in particular to the Convention on Nuclear Safety.

2.2 Lessons learnt

Considerable experience has been gained, both in projects carried out within the INSC and the former TACIS programme, in supporting the development of national frameworks for regulating radiation and nuclear safety. Use has been made of this experience in optimising the scope, content and design of this action.

2.3 Complementary actions

This project is not directly linked to any previous INSC project. It is the first EU assistance in Malaysia.

2.4 Donor coordination

This action is self-standing and is not directly linked to any potential actions of other donors or the International Atomic Energy Agency (IAEA). The project does not foresee the participation of other international donors and does not overlap with any other existing bi-lateral or multi-donor initiatives. The European Union will remain the only fund provider apart from the partner country.

Malaysia is cooperating on various aspects of nuclear safety with the IAEA (e.g. MAL/3/009 and MAL/4/009 projects) and with regulatory and nuclear safety bodies in the US, Japan, France and the Republic of Korea. Longer term programmes of cooperation are already in place with the Korean Institute of Nuclear Safety (KINS) on siting of nuclear power plants and with the Korean Advanced Educational Research Institute (KAERI) on education and training on nuclear safety and

regulation. Procedures will be developed by AELB to ensure complementary cooperation with various partners and to avoid duplication.

The preparation of a strategy for enhancing the capacity and effectiveness of the regulatory body of Malaysia and plans for its implementation (as foreseen in Task 1 of this action) will further minimise the risk of duplication in future.

3. DESCRIPTION

3.1 Objectives

The objectives of this action are to cooperate in:

- enhancing the capacity and effectiveness of the national regulatory body, AELB;
- developing a national radioactive waste management strategy for wastes arising from the use of radiation and radioactive materials in research, industry and medicine; and
- increasing the technical capability and knowledge in nuclear safety, creating the conditions for fast accession to the Convention on Nuclear Safety.

3.2 Expected results and main activities

Task 1 – Strategy, and its practical implementation, for enhancing the capacity and effectiveness of the national regulatory body, AELB.

The objectives of this task are:

- to develop a strategy (or refine the existing strategy) for enhancing the capacity and effectiveness of AELB
- to develop an Action Plan (or refine the existing Action Plan) for implementing the strategy in a timely and effective manner
- to develop a Cooperation Plan identifying how and where cooperation could contribute to the more effective and timely achievement of the strategy and Action Plan.

The strategy and how it is to be implemented (i.e., the Action Plan) will provide a framework for ongoing and future cooperation under the auspices of the INSC programme and/or with other potential partners. The development of sustainable human resources and training will be integral and key parts of this strategy (see also Task 3).

Task 2 - Development of a management system for the regulatory body, AELB.

The objective of this task is to cooperate in the development of a management system for use by the regulatory body in fulfilling its functions of assessing and verifying the safety of nuclear installations. The management system will comprise a set of internal procedures and/or guides to be followed by the regulatory body in assessing and verifying safety. Procedures will be developed in some specific domains as, the decision making process for licensing a nuclear installation, issuing, amending,

suspending, revoking and terminating a licence, inspections or identification of safety deficiencies.

Task 3 – Human resources development plan and training programme

The objective of this task is to cooperate in establishing a human resources development plan and a sustainable training programme commensurate with the anticipated level and timing of the introduction and use of nuclear energy in Malaysia. The development plan and training program should ensure the availability of sufficient people and skills for the effective and sustainable regulation of nuclear safety. Based on identified needs, a policy and strategy for human resources development should be established and the training program designed accordingly. The training should be practically oriented and, to the extent practicable, be structured around actual case studies and contain a significant measure of ‘on the job’ training.

Task 4 – Methodologies of review of the safety principles, requirements and criteria to be included in the potential tender documentation for a future NPP

The objective of this task is to cooperate with the regulatory body in reviewing and determining the acceptability of the safety principles, requirements and criteria proposed for inclusion in the tender documentation for a new NPP. These principles, requirements and criteria should reflect best international standards and practice, in particular taking due account of: the provisions in the Safety Conventions; relevant IAEA standards and recommendations; and harmonization levels, especially safety objectives for new nuclear power plants, established by the Western Europe Nuclear Regulators' Association (WENRA) or other bodies.

Task 5 - Independent review and assessment of safety submissions

The objective of this task is to cooperate with the regulatory body in the development of a capability within AELB to perform and/or to commission independent reviews and assessments of safety submissions for NPPs in accordance with best international standards and practice. All types of safety submission should be included in this activity including deterministic and probabilistic safety analyses, periodic safety reviews, siting, design, construction, operation, shutdown and decommissioning, as well as emergency arrangements, control of discharges to the environment and environmental impact assessments, etc.

Task 6 – National strategy for radioactive waste management

The objective of this task is to cooperate with Nuclear Malaysia and AELB in the development of a national strategy for radioactive waste management that is broadly in accord with best international standards and practice. The scope of the task will be limited to developing a strategy for the management of wastes arising from the uses of radiation or radioactive material in research, industry and medicine (including naturally occurring radioactive materials (NORM) wastes). Consideration will be given to the identification, collection, classification, processing, storage, transportation and disposal of radioactive wastes, as well as spent fuel from research

reactors. Radioactive waste arising from the future use of nuclear energy are excluded from consideration and would need to be the subject of a separate study. Nevertheless, the potential impact of a future nuclear power programme shall be considered in the development of the strategy.

The results of the task will assist Malaysia in meeting part of its commitments under the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management (when ratified).

The task will be carried out in two independent but linked activities:

- cooperation with Nuclear Malaysia, which is responsible for radioactive waste management in Malaysia, in the development of the national strategy, and
- cooperation with the regulatory body, AELB, in developing the regulatory framework with which the radioactive waste management strategy must comply.

Appropriate and timely interfaces would be established between these two separate activities to ensure that the national strategy was developed in an effective and timely manner and fully in accord with regulatory requirements.

Task 7 - Assistance in responding to recommendations and suggestions of an IAEA Integrated Regulatory Review Services (IRRS) mission

The objective of this task is to cooperate with the regulatory body in responding to the outcome of an IAEA International Regulatory Review Services (IRRS) mission in Malaysia which is scheduled to take place in 2012 and in preparing for a follow-up mission. Recommendations and suggestions are likely to result from the IRRS mission. The former will address issues directly relevant to safety while the latter will be concerned with enhancing the effectiveness of the national nuclear and radiation safety regime and/or improving the organization or performance of the regulatory body. Cooperation will be provided in developing an action plan for responding to the outcomes of the IRRS review and subsequently in its implementation. Support will also be provided in preparing for the follow up IRRS mission.

Task 8 - Enhancing trust and confidence in the regulatory body, AELB

The objective of this task is to assist the regulatory body in establishing and maintain trust and confidence in the regulatory body through the development of transparent and targeted information and effective communication. Best European Union (EU) countries' practices in the provision of information and effective communication will be transferred and customised to the social and political situation in Malaysia.

Task 9 – Promoting a regional (i.e., Association of the South East Asian Nations - ASEAN) approach to emergency preparedness and management and enhancing the capabilities of the regulatory body, AELB

The objectives of this task are:

- to promote a regional (i.e., Association of Southeast Asian Nations, ASEAN) approach to preparedness for and management of nuclear and radiological emergencies and for the exchange of environmental monitoring information, and
- to enhance the capabilities of the regulatory body, AELB, in the area of emergency preparedness and management.

The first objective will be achieved through an ASEAN Workshop with participation also from the EU. National capabilities within ASEAN in environmental monitoring and emergency preparedness and management would be compiled and an evaluation made of how these could be enhanced and optimised through regional or sub-regional cooperation. EU experience in these areas would be disseminated to demonstrate the benefits that can be achieved by regional or sub-regional approaches, in particular in the real time exchange of monitoring information and the use of broadly compatible decision support systems and handbooks.

The second objective will be achieved through the following activities:

- providing AELB with a full understanding of the standards, regulations, rules, arrangements, procedures, etc, used in the EU and its Member States for preparedness for and management of nuclear and radiological emergencies
- assessing whether and to what extent the current standards and arrangements for emergency preparedness and management in Malaysia may need to be revised or enhanced in light of European and other international experience
- evaluating the potential and/or need for installing a decision support system for emergency management in the AELB emergency centre
- identifying how further cooperation could facilitate and enhance the quality of any revisions deemed necessary in the current standards or arrangements.

3.3 Risks and assumptions

No undue risks are expected in the implementation of the project. Effective implementation assumes the full support from the national authorities and institutions identified as partners (see Section 3.5 below). In addition, it is assumed that the partner institutions will mobilise the necessary capacity and capabilities for the management of the project cycle and make the required human resources available.

3.4 Crosscutting Issues

Through this project, Malaysia will be encouraged to sign and ratify the Convention of Nuclear Safety.

3.5 Stakeholders

The main stakeholders are the regulatory body for radiation and nuclear safety, AELB, the national nuclear research and development organisation, Nuclear Malaysia, and Technical Support Organisations.

4. IMPLEMENTATION ISSUES

4.1 Method of implementation

Centralised direct management

A Financing Agreement will be signed with the partner country, Malaysia.

4.2 Procurement and grant award procedures

All contracts implementing the action must be awarded and implemented in accordance with the procedures and standard documents laid down and published by the Commission for the implementation of external operations, in force at the time of the launch of the procedure in question.

Participation in the award of contracts for the present action shall be open to all natural and legal persons covered by the INSC Regulation.

Further extensions of this participation to other natural or legal persons by the relevant authorising officer shall be subject to the conditions provided for in Article 14 of the Instrument.

4.3 Budget and calendar

Total estimated EU budget: €2 million

Estimated contract duration: 24 months

Type of contract(s): Service

4.4 Performance monitoring

The action will be subject to Results Oriented Monitoring (ROM) providing valuable insights for each specific task but also on the performance of the contractor on the global perspective.

In addition to Results Oriented Monitoring the action will be monitored internally using traditional project management Key Performance Indicators, such as:

- Achievement of milestones
- Progress reports and technical reports
- Use of resources.

The long term aspects will be based on Key Performance Indicators to be specified in the terms of reference. They will be defined so as to quantify the medium-long term impact of the action. The involvement of the partner country in this evaluation exercise is important for the sustainability of the activities.

4.5 Evaluation and audit

The project will be monitored in compliance with standard Commission procedures. Monitoring and assessment should be based on periodic

assessment of project activity progress, achievement of project outputs and its objectives.

In addition to the follow-up and controls carried out on site, as necessary, by the relevant Commission services, including the European Antifraud Office (OLAF), and the Court of Auditors, projects shall be monitored on a regular basis by appropriately qualified specialists based in the field. Independent ex-post evaluations will be conducted periodically, in order to assess the relevance, effectiveness, efficiency and impact of the programme.

4.6 Communication and visibility

Visibility activities will be implemented according to well-defined standards and rules: the EU visibility guidelines for external actions. These guidelines are a part of the contractual obligations of implementing partners/Consultants and must therefore be carried out in the same way as any other contractual element.

On a regular basis, the Consultant will submit Progress Reports to the European Commission. The Consultant shall pay particular attention to the confidentiality of the data.

Other deliverables dedicated to visibility may include:

- An inception press release at the start-up of the project;
- A final press release to be provided with the project final report;
- A final presentation meeting for the dissemination of the project results organised by the Consultant.

Other actions to disseminate results or increase the visibility of the EU action may be implemented in parallel to the present projects.

ANNEX VIII

ACTION FICHE FOR IAEA PROPOSAL FOR EU INSC ACTION PROGRAMME 2012

1. IDENTIFICATION

Title/Number	MC3.01/12 – Cooperation with the International Atomic Energy Agency's Department of Technical Cooperation and Department of Nuclear Safety and Security - Division of Nuclear Installation Safety		
EU contribution	€ 9.26 million		
Aid method / Method of implementation	Project approach: Joint Management		
DAC-code	23064	Sector	Nuclear Safety

2. RATIONALE

2.1. Sector context

IAEA and European Commission have been cooperating under the Financial and Administrative Framework Agreement (FAFA) signed in September 2004. More recently, several areas of cooperation in the field of nuclear safety, nuclear security and nuclear energy were identified in a Joint Statement issued in May 2008.

The Instrument for Nuclear Safety Cooperation (INSC) foresees the development of cooperation with the IAEA. There have been a number of European Commission contributions to IAEA for safety related activities. The main reason for an increased cooperation with the IAEA remains with the fact that the IAEA is carrying out projects that are addressing safety issues based on the development and application of the IAEA safety standards and guidelines.

Currently, there are a number of activities in nuclear safety being funded under the INSC programme. The International Atomic Energy Agency (IAEA) and more specifically the Departments of Technical Cooperation (TC) and of Nuclear Safety and Security (NS) – Division of Nuclear Safety Installation, herewith submit for consideration of the European Commission the present Action Fiche for financing through the 2012 Annual Action Programme of the INSC.

This Action Fiche is twofold:

- The components/projects to be implemented by the Department of Nuclear Safety and Security (NS) – Division of Nuclear Safety Installation, are conceived and designed after the accident at the Fukushima Daiichi Nuclear Power Plant and in line with the draft Action Plan for Nuclear Safety, approved by the Board and endorsed by the 55th IAEA General Conference.

The purpose of the Action Plan is to define a programme of work to strengthen the global nuclear safety framework. The Action Plan has proposed 12 main actions, each with corresponding sub-actions, focusing on: safety assessments in the light of the accident at the Fukushima Daiichi Nuclear Power Station; IAEA peer reviews; emergency preparedness and response; national regulatory

bodies; operating organizations; IAEA Safety Standards; international legal framework; Member States planning to embark on a nuclear power programme; capacity building; protection of people and the environment from ionizing radiation; communication and information dissemination; and research and development.

The project MC3.01/12 has three main thematic areas directly related to the implementation of the actions/sub-action as given included in the IAEA Action Plan: Thematic Area A : “Enhancement of design and operational safety review services for NPP” focuses on the safety of existing nuclear power plants; Thematic Area B on Improving Safety for Lifecycle Management of Spent Fuel, Radioactive Waste and Decommissioning to Provide for Protection of the Public and Workers focuses on regulators and the lifecycle management of waste from the front and back ends of the nuclear fuel cycle; Thematic Area C on Lessons learned from Fukushima for the regulators, enhancement of regulatory oversight and strengthening of an effective compliance assurance regime in transport of radioactive material also focuses on regulators, as thematic Area B. All corresponding sub-components have been discussed between the IAEA, the EU and its Member States and only selected ones are presented in this package.

- The Action Fiche corresponding to the TC Part of the proposal focuses on three thematic priority areas that have been identified in consultation with Member States and the European Commission in view of global and regional nuclear safety priorities. These thematic priorities are:
 - a. Emergency Preparedness and Response;
 - b. Addressing nuclear and radioactive waste management;
 - c. Strengthening regulatory bodies and improving implementation of safety standards.

2.2 Lessons learnt

The joint implementation of projects/components addressing Member States urgent needs and requirements in the areas of nuclear safety in particular in the light of lessons learnt from the Fukushima Daiichi accident will help to avoid duplication and overlaps in EU and IAEA activities and creates synergies between both programmes.

Due to the urgency of the proposed activities, some of which have already started, a fast-tracked funding mechanism starting in the second half of 2012 is of the utmost importance.

2.3 Complementary actions

The activities under this Action Fiche will be coordinated with and complemented by on-going other voluntary contributions for the same projects, and the IAEA’s Regular Budget funds.

This Action Fiche is guided by IAEA SEC/DIR/37.

2.4 Donor coordination

The proposed Action Fiche includes components that are also funded by IAEA's regular budget funds, as well as other voluntary contributions. IAEA will ensure the utilization of each contribution according to each Donor State's conditions on the use of their respective contribution and in line with the scope of the project.

3. DESCRIPTION

3.1 Objectives

The IAEA has prepared an Action Plan, approved in September 2011, addressing: 1) safety assessments in the light of the accident at the Fukushima Daiichi Nuclear Power Station; 2) IAEA peer reviews; 3) emergency preparedness and response; 4) national regulatory bodies; 5) operating organizations; 6) IAEA Safety Standards; 7) international legal framework; 8) Member States planning to embark on a nuclear power programme; 9) capacity building; 10) protection of people and the environment from ionizing radiation; 11) communication and information dissemination; 12) and research and development.

The objectives of this Action, in line with the Regulation governing the INSC Programme Strategy (Art. 2d and 2e) and the Indicative Programme as adopted by the Commission, are to support the International Atomic Energy Agency in implementing its Action Plan. The Action contributes also to the Peaceful Uses Initiative (PUI), launched in May 2010 during the NPT Review Conference to help make peaceful uses of nuclear energy available to all in fields of activity that include human health, food security, nuclear power infrastructure development, water resource management, and nuclear safety.

The EU funds will contribute to several IAEA projects identified as components in six thematic areas: a) Enhancement of design and operational safety review services for nuclear power plants, b) improving safety for lifecycle management of spent fuel, radioactive waste and decommissioning to provide for protection of the public and workers, c) draw conclusions from the lessons learned from Fukushima for the regulators, enhancement of regulatory oversight and strengthening of an effective compliance assurance regime in transport of radioactive material, d) Emergency Preparedness and Response, e) addressing nuclear and radioactive waste management, and f) strengthening regulatory bodies and improving implementation of safety standards.

3.2 Expected results and main activities

EU funds will contribute to the following IAEA projects identified as components, in the following three thematic areas. The duration of all components as described is currently based on a 2-year projection; extension of all or some of the components may be considered on an as-needed basis.

Thematic Area A – Enhancement of design and operational safety review services for NPP

After the Fukushima NPP accident, the need for reassessing the safety margins of NPPs has been internationally recognized and the Council has decided to develop

comprehensive and transparent risk assessments (Stress Tests) for all NPPs in the European Union.

In order to enhance the operational safety of NPPs, the IAEA is presently conducting operational safety review missions like Operational Safety Review Teams (OSARTs). In view of the Fukushima accidents, it has been realised that not only the number of these missions needs to be increased but also the guidelines for conducting such missions requires revision to enhance focus on areas like severe accident management.

A1) Design Safety Assessment of Operating Facilities against extreme hazards

- Development of the approach for peer review of the impact of extreme events on nuclear power plants, design safety margin and for maintenance of adequate safety margin throughout the operating life.
- Development of methodology guidelines to carry out a comprehensive systematic peer review of the protection provided at a nuclear facility against the impact of extreme events.
- Regulatory guidance with respect to the impact of extreme events on nuclear facilities.
- Self-evaluation by Member States, and international review teams to assist and evaluate the potential impact on the NPP from extreme hazards;
- Workshops and seminars to disseminate the insights from the peer reviews carried out for extreme events.

A2) Enhancing the operational safety review services for nuclear power plants

- Development of guidelines for OSART missions, which incorporates the lessons learned from the Fukushima Daiichi accident, including severe accident management. .

Thematic Area B - Improving safety for lifecycle management of spent fuel, radioactive waste and decommissioning to provide for protection of the public and workers

Achieving safety for the management of waste from the front and back ends of the nuclear fuel cycle and for the decommissioning of nuclear facilities as well as facilities with radioactive material requires proper consideration of lifecycle management. In recent years, the front end of the fuel cycle has seen a resurgence of activity for exploration and development of uranium resources; an appreciable part of this resurgence has occurred in Africa. At the back end of the fuel cycle, the ageing of pre-1980 facilities, premature shutdown of facilities and accident-damaged facilities have increased the need for decommissioning. Storage of spent fuel and radioactive waste is an important step for safe management of radioactive materials at the back end of the nuclear fuel cycle and other applications of ionizing radiation, and many of the storage facilities in operation today are decades old.

Lifecycle considerations are aimed at optimizing both short and long term safety in a cost effective manner, so that present and future generations are not unduly burdened by past activities; this is in accordance with the objectives of international safety standards, the Joint Convention and other international undertakings. In this project it is proposed to address several aspects of safety for lifecycle management of spent fuel, radioactive waste, and decommissioning, including taking into consideration the increased mobility of a highly skilled work force in terms of occupational protection.

The Objective of the joint programme is to enhance radiation safety in both the front-end (uranium mining) and the back-end (decommissioning and remediation) of the nuclear fuel cycle.

The scope of the thematic area will thus encompass the following components:

B1) Practical intervention techniques to reduce public doses at uranium mining and milling legacy sites

- To provide regulators in African countries with uranium legacy sites with the knowledge to develop and implement site specific, low-cost mitigation techniques to protect the public. The measures to be considered will comprise simple administrative, physical and engineering controls that can be used to reduce doses to members of the public living close to these uranium legacy sites.
- To enhance transfer of knowledge of potential risks to the public, low-cost/quick-fix mitigation options for the management of legacy sites to reduce public exposure now and in the future.
- In the longer term, an outcome will be an improvement in the safety of legacy sites, which will contribute to increased protection of the public and a reduction in future legacy issues.

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B2) Regulatory oversight of remediation plans and activities for uranium mining and milling sites

- To develop and test training material to enhance regulatory performance in the review of remediation activities. The material will include waste management and public radiation protection aspects related to legacy uranium mine and mill sites. Recognizing the lifecycle approach, the training will also address activities at sites in planning and operation to result in more effective waste management and the prevention of legacy sites in the future. The training material will be suitable for application within national and IAEA training programmes, and for inclusion in broader scope packages (targeted at African countries).

B3) Development of reference regulations for decommissioning

- To develop reference regulations for decommissioning to be used by Member States in establishing a national regulatory framework for preparation and implementation of decommissioning of facilities containing radioactive materials. The Member States' capabilities to regulate the implementation of safe and efficient

decommissioning will be strengthened by the use of reference regulations, which will be based on international safety standards and good practices. The resulting IAEA reference regulations can be used by Member States as a starting point in developing national decommissioning regulations.

- To assist regulators for the appropriation of the reference regulations, their adjustment and their implementation considering the countries' specifics.

B4) Occupational radiation protection and risk management

- To strengthen the occupational radiation protection in NPPs, since the results of stress tests may require more inspections, plant maintenance and modifications in work areas with high radiation fields.
- To strengthen the occupational radiation protection in decommissioning of NPPs, facilities with radioactive material and remediation activities
- To provide a coherent approach to managing occupational exposure and other risks (e.g. industrial hazards) in the decommissioning of NPPs to optimize consideration of all risks.
- To improve and harmonize national programs for occupational radiation protection, and policies and procedures for monitoring and control of itinerant workers.

Thematic Area C – Lessons learned from Fukushima for the regulators, enhancement of regulatory oversight and strengthening of an effective compliance assurance regime in transport of radioactive material

After the IAEA Ministerial Conference on Nuclear Safety and numerous other contributions worldwide, the process to learn lessons from the Fukushima Daiichi accident will last for many more years. Still, there is a need to start answering global concerns as soon as possible and identify first lessons to improve both national regulatory frameworks and the assistance which the IAEA can provide on such issues. Beyond the regulatory review of the safety margins through the Stress Tests results, other regulatory implications arising from the Fukushima accident need to be identified and addressed.

The main objective of this thematic area is to enhance and strengthen the global nuclear safety regime in line with the IAEA's mission and Statute, and to consider future requirements for long-term goals and strategies for nuclear safety taking into consideration the lessons learned from the Fukushima Daiichi accident. The thematic area will also address technical awareness and safety assessment capability and oversight of regulatory staff in application of risk informed decision-making processes and improvement of regulatory body's staff competencies for regulatory oversight through delivery of essential safety assessment knowledge.

The scope of the thematic area will thus encompass the following components, which are directly related to activities 2, 4, 6, 8, 9 and 11 of the IAEA Nuclear Safety Action Plan:

C1) Identifying Safety and Regulatory Implications from the Fukushima Accident on IAEA Safety Standards and Safety Services

- Identification of regulatory aspects of the first lessons learned from the Fukushima Daiichi accident, with associated guidance on how to effectively improve national regulatory infrastructures using the reference document that will be developed;
- Incorporation of lessons learned from the Fukushima Daiichi accident in the guidelines of the IAEA Integrated Regulatory Review Service, both in methodology and content of the review service;
- Systematic review of IAEA regulatory safety guides in the light of the first lessons learned from the Fukushima accident, and production of associated revision drafts, as appropriate;
- Identification of specific regulatory issues which require particular attention from countries, including embarking to nuclear power, in the light of the Fukushima Daiichi accident - appropriate emphasis will be articulated in liaison with the IAEA safety guide SSG-16 "Establishing the Safety Infrastructure for a Nuclear Power Programme".

C2) Enhancing the Safety Assessment Capability and Oversight of Nuclear Installations

- Identification of Member States' needs in technical areas through application of the Safety Assessment Competency and Capacity Review Service and development and delivery of safety assessment training.
- Enhancement of technical capability of the regulatory body in reaching integrated risk informed decisions, based on a comprehensive understanding of critical safety issues.

C3) Strengthening of an effective compliance assurance regime in transport of radioactive material in the European Southern neighbourhood region (Mediterranean sea) and associated shipping states

During and after severe accidents like the accident in Fukushima, the polonium contamination in London or the material found at the port of Genoa, the material or waste, e.g. contaminated equipment and goods, damaged fuel and high level contaminated water, need to be transported or moved as soon as possible to suitable storage facilities or for safety or security reasons. These materials or waste are different to those handled under the normal safe transport regimes because of the

properties of the material and amount. This means that the regulatory regimes need to be resilient enough to deal with these urgent shipments. In light of the recent emergency event in Japan, it is important to enhance cooperation and coordination in this topic for safe and efficient transport of radioactive waste.

- To move towards a sustainable system of mutual support, cooperation and coordination in normal and emergency transport of radioactive material. It is envisaged that this regional project will set up a network and produce a net benefit for all states involved. A key aspect of the strategy is not only to avoid worsening an already critical condition during and after accidents but also to promote sustainable transport of radioactive material.

The Action is presented across three thematic priorities: 1) Emergency Preparedness and Response, 2) Addressing nuclear and radioactive waste management and 3) Strengthening regulatory bodies and improving implementation of safety standards. The Action has the expected results detailed below, per priority area.

Thematic Area D: Emergency Preparedness and Response

Experience in responding to nuclear and radiological incidents and emergencies has clearly demonstrated the importance and need of an efficient response system including infrastructural and functional components, emergency plans, procedures, and internally consistent operational criteria. Many Member States are at present not adequately prepared to respond to such emergency situations. Efforts to maintain and further strengthen national, regional and international arrangements and capabilities in this area should continue as the international standards, guidance and training are not yet implemented in a harmonized and global way. Regional cooperation in building emergency preparedness and response capacity is also paramount.

The specific expected result of the Components in this priority area is to:

- Strengthen and harmonize the Member States' national arrangements for preparedness and response to radiological and nuclear emergencies and to improve their compliance with international standards (GS-R-2) in Africa, Asia and the Pacific, and Latin America and the Caribbean.

The expected result will contribute to Nuclear Safety Action Plan points 3, 9 and 11. Activities will cover basic responsibilities and threat assessment, national emergency response plans, and training on emergency management and preparedness (e.g. first response, medical response, criteria for use in preparedness and response, exercises to test preparedness).

Thematic Area E: Addressing nuclear and radioactive waste management

When radioactive sources become disused, they may be uncontrolled and cause radiological accidents or they may be misused for malicious purposes unless they are safely and securely managed. Although the Code of Conduct on the Safety and

Security of Radioactive Sources and the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management provide established principles and objectives for the safe management of disused radioactive sources, encouraging all possible alternatives (recycling, reuse, repatriation to country of origin, storage and disposal), many countries have not yet defined a proper strategy to manage their current and future disused radioactive sources. Despite the significant progress in safely managing radioactive waste, efforts are still needed in a number of countries to develop a comprehensive national strategy, including disposal, and to strengthen their national infrastructure accordingly.

Disused facilities and sites contaminated because of activities involving radioactive material exist worldwide, and many pose continuing health risks to adjacent communities and, potentially, the wider public. Individual Member States do not have the institutional or resource capacity to address the ongoing fundamental problems in the decommissioning and environmental remediation of these facilities and sites.

The specific expected results of the Components in this priority area are to:

- continuously improve the management of DSRSs in Africa and Latin America and the Caribbean,
- strengthen the regulatory infrastructure to ensure that practices and activities involving the generation and management of radioactive waste is conducted in accordance with international safety standards, and
- improve Member States institutional and human resource capacity for regulatory oversight, planning and licensing, implementation, and closure and release of decommissioning and environmental remediation projects.

The expected result will contribute to Nuclear Safety Action Plan points 4, 9 and 10. Activities will cover awareness raising on the need to manage DSRSs safely and securely over the long term; practical, on the job training to identify, characterize and condition DSRSs in order to minimize their safety and security risks; and to prepare for sustainable final solutions for different categories of DSRSs. Training courses, workshops and group scientific visits to provide guidance and training in waste management, decommissioning and environmental remediation will be conducted.

Thematic Area F: Strengthening regulatory bodies and improving implementation of safety standards

The IAEA promotes and supports the establishment of a global nuclear safety regulatory regime. One objective of this regime is to strengthen the transparency, openness, independence, technical competence and effectiveness of regulatory bodies in Member States. Central to establishing this regime are the IAEA Safety Standards, their application and related review services. The regulatory framework and its associated activities are essential to guarantee a high level of safety of all nuclear and radiation facilities and activities under national responsibility. The regulatory bodies

are facing new challenges and regulatory and policy issues, and are striving to improve the regulatory infrastructure to adequately control, using a graded approach, all types of nuclear installation and radiation facilities.

The Agency has deployed great efforts to provide effective capacity building support to Member States as they developed human resources and built their nuclear and radiation safety infrastructure. Capacity building for nuclear and radiation safety requires a systematic and integrated approach to develop and continuously improve individual, organizational and regulatory competences and capabilities necessary for achieving and sustaining high levels of nuclear and radiation safety. It covers all aspects of nuclear and radiation safety infrastructure development, including nuclear, radiation, transport and waste safety.

Denials and delays of shipment of radioactive materials continue to occur, with the most apparent increase in denials of shipment resulting from national variations in regulations. Variations in regulations can create a level of complexity for different modes of transport that can increase the risk of undeclared dangerous goods, or misdeclared dangerous goods creating problems for all parties involved in the supply chain.

Nuclear Power Plant (NPP) facilities carry high costs and a number of such facilities in Latin America have been in operation for several decades. Several of them are approaching the decision point of whether or not the NPP will go for long-term operation and, if so, request renewal of their operating licenses. The challenge of ageing and material degradation requires that enhanced and continuing attention is paid to safety and the assurance of sustainable human competency and capacity among suppliers, operators and regulators worldwide. The regulatory aspects in this regard are of utmost importance to be developed or brought to a level aligned to international regulations and best practice.

In view of the above-mentioned challenges, the Components under this priority area aim to achieve the following expected results:

- promote and maintain an effective and sustainable regulatory infrastructure for radiation facilities and sources in Africa and Asia and the Pacific, in accordance with the relevant IAEA safety standards and guidance,
- strengthen systems for occupational radiation protection in Asia and the Pacific,
- bring about an effective transport compliance-assurance regime in Asia and the Pacific based on the twelve elements set out in safety standards TS-G-1.5,
- harmonize approaches and measures in public and environmental radiation protection in Asia and the Pacific, and
- enhance regulatory experiences and promote regional cooperation in the implementation of plant life management programmes for long-term operation of NPPs in Latin America.

The expected result will contribute to Nuclear Safety Action Plan points 3, 4, 5, 6, 9, 10 and 11.

Activities under these Components include training, monitoring, licensing, and validating a registry of radioactive sources, and organisational protocols. Capacity building will take place through regional and national specialized training courses and workshops, national consultants' meetings, on-the-job fellowships, scientific visits and regional group activities, provision of expert assistance, training material, relevant IAEA and international publications and essential standard equipment.

3.3 Risks and assumptions

As many of the proposed activities are addressing urgent needs in Member States, especially in light of the Fukushima Daiichi accident but also in terms of protecting people and the environment, a delay in the timely provision of financial resources for implementation of the components included in this Action Fiche may result in a less coordinated involvement of other agencies/organizations where the joint action of the EU and the IAEA should take the lead. It is of the utmost importance that activities can be started in the second half of 2012, especially as some projects have already been started but are short of funding for full implementation.

No major risks are envisaged for the implementation of this project. The activities are complementary to activities already underway and will be implemented in an integrated fashion. An adequate commitment from Governments, with the allocation of necessary human and financial resources, is crucial for the success of the Action. National security issues could affect the conduct of certain activities, but no such risks are envisaged at time of writing.

3.4 Crosscutting issues

The project approach addresses the crosscutting development issues that play a key role on human and environmental protection.

3.5 Stakeholders

Direct beneficiaries of the project will be regulatory authorities, operating organizations, and technical support organizations in recipient member states. End beneficiaries will be the population of the participating and neighbouring countries at large as well as itinerant workers in NPP stress tests.

4. IMPLEMENTATION ISSUES

4.1 Method of implementation

Joint management through the signature of an agreement with an international organisation namely IAEA due to its high level of expertise and strong relationship with the European Commission and other international stakeholders.

IAEA has been subject to a 4 pillar assessment to check its compliance with Article 53d.1.b of the Financial Regulation. On the basis of this audit, the authorising officer deems the report satisfactory with regard to the responsibilities which will be transferred to IAEA except for the fourth pillar (procurement procedures). It is therefore foreseen to use the Joint Management mode and to sign a standard contribution agreement with the condition of using EU procurement procedures until the fourth pillar fully comply with the standards required.

4.2 Procurement and grant award procedures

Standard contribution agreement(s) with the IAEA:

However, given the results of the external review in relation to Article 53(d) FR, it will be specified that all contracts implementing this action will have to be awarded and implemented in accordance with the procedures and standard documents laid down and published by the Commission for the implementation of external operations, in force at the time of the launch of the procedure in question. The contribution agreement will foresee adequate monitoring arrangements in order to ensure the EU procedures are duly followed and that the risk of infraction is reduced.

4.3 Budget and calendar

Total estimated EU budget: €9.26 million (for NSI and TC)

(Complementary funding through NS's Regular Budget, Technical Cooperation Fund and other voluntary contributions: €6 700 000)

Estimated contract duration: 36 months. The duration of the Action is three years, starting in the second half of 2012. Some of the Components will have a duration of less than 36 months. A detailed work plan with schedule will be submitted by the Organization within three months after the agreement signature.

4.4 Performance monitoring

For each thematic area a set of performance indicators (PI) will be developed and agreed with the Commission counterparts at the time of the preparation of the inception report for this Action Fiche. The status of implementation for each component will be reported in the regular detailed Technical Progress Reports to the European Commission, based on the agreed set of PIs. A Technical Final Report will be submitted upon completion of the Action.

4.5 Evaluation and audit

The evaluation of the project implementation will be included in the periodic progress reports provided by the IAEA to the Commission. The conduct of evaluation missions will be governed by relevant provisions of the FAFA.

4.6 Communication and visibility

Visibility activities will be implemented in accordance with the communication and visibility manual for EU external actions and subjected to the provisions of the FAFA. In particular, the IAEA shall take appropriate measures to publicise the fact that the project has received funding from the EU.

Besides these activities, the IAEA is requested:

- to highlight during the projects implementation the link with the IAEA Peaceful Uses Initiative,
- and to record this project as EU contribution to the initiative.

ANNEX IX

ACTION FICHE FOR MONGOLIA

1. IDENTIFICATION

Title/Number	MN3.01/12 Regulatory regime for nuclear safety and enhancing radiation safety and nuclear safeguards in Mongolia		
EU contribution	€3 million		
Aid method / Method of implementation	Project approach: Centralised direct management		
DAC-code	23064	Sector	Nuclear Safety

2. RATIONALE

2.1 Sector context

A Partnership and Cooperation Agreement (PCA) between Mongolia and the European Union (EU), established on 20 December 2010, establishes the political framework for cooperation. Several domains for cooperation are identified in the Agreement including countering the proliferation of weapons of mass destruction and combating money laundering and the financing of terrorism, both of which fall within the scope of the Instrument for Stability. In addition, the Agreement foresees cooperation in promoting the application of best international standards and practice for nuclear and radiation safety, security and safeguards, all of which fall within the scope of the Instrument for Nuclear Safety Cooperation (INSC).

Following the adoption of the 2010 INSC Annual Action Programme, Mongolia was identified as one of the partner countries for the project REG.4.01/10. This project is concerned with: the establishment of a legislative and regulatory framework for the remediation of uranium mining legacy sites in Central Asia; the establishment of a regional watershed monitoring system; and capacity building in analytical techniques, training and education; and information exchange. Terms of Reference for this project are currently being developed and implementation is expected to begin in mid 2012. The legacy site at Dornod in Mongolia is a consequence of uranium mining activities carried out up to 1995 by the former Soviet Union. The legacy wastes are limited to waste rock (about 200,000 te) left behind following the transport of the uranium ore to the Former Soviet Union for processing and extraction of uranium.

Mongolia is actively seeking enhanced cooperation with the EU in the areas of nuclear and radiation safety and safeguards, in particular in the contexts of increasing international interest in the exploitation of its uranium reserves. The national policy for developing and using nuclear energy foresees the first nuclear power plant to be in operation by 2021, and an intention to develop and adopt standards and practices that are broadly in accord with those in the EU.

The Nuclear Law was established in 2009 at which time the Nuclear Energy Agency (NEA) was established. The NEA is responsible for implementing the national policy on the exploitation of radioactive minerals and nuclear energy, the introduction of

nuclear technology and the development of nuclear research, and the regulation of nuclear and radiation safety and security. The respective development and regulatory functions of the Agency are carried out by two administratively separate and distinct entities, the Nuclear Technology Authority (NTA) and the Nuclear and Radiation Regulatory Authority (NRRA).

Currently, the activities of NRRA are largely focused on the control and regulation of: the uses of radiation in industry, medicine and research; the safe and secure management of orphan and disused radioactive sources; the installation of portal monitors to combat illicit trafficking of nuclear and radioactive materials; the exploitation, processing, import, export and transport of radioactive minerals, nuclear substances and equipment; radioactive waste management; and remediation of areas affected by the extraction of radioactive minerals. In future, increasing attention will need to be given to the regulation of new uranium mines and associated facilities (i.e., milling operations) and nuclear power plants. Establishing timely frameworks for the effective regulation of these foreseen activities will be challenging and will require considerable investments in human resources and their training. At present there are about thirty three professional staff in NRRA.

The establishment of an effective regulatory framework for new uranium mines and associated facilities (i.e., milling operations) is currently the most pressing challenge for the NRRA. Exploration for uranium is increasingly being undertaken in several parts of the country by various companies from France, Canada and Russia. These activities are unlikely to be greatly affected by the accident at Fukushima and one or more applications to extract and process uranium can be expected within the next few years. More extensive cooperation in the development and implementation of an effective regulatory framework for uranium mining and milling operations was taken within the INSC Annual Action Programme 2011 by the adoption of the project MN3.01/11, concerned with the development of a regulatory framework for uranium mining and milling operations.

The establishment of an effective regulatory regime for nuclear power plant safety is also a pressing challenge. An ‘Action Plan to Implement a Mongolian Government Policy on Radioactive Minerals and Nuclear Energy’ was adopted in 2009 by the Mongolian Government (Resolution No. 222). The plan had a high level of ambition and identified numerous activities that had to be completed within prescribed timescales. *Inter alia*, it foresaw the completion by 2011 of; a feasibility study for construction of a nuclear power plant; an environmental impact assessment; and the selection of strategic investors to construct the plant according to specific conditions and requirements. The construction of the nuclear power plant, along with the related infrastructure, was scheduled for completion by 2017. While there has been some delay in the foreseen timescale, the Government remains committed to the construction of a nuclear power plant. Current planning foresees the first nuclear power plant to be in operation by 2021.

Notwithstanding this extended timescale, time is already short and careful planning and the commitment of significant resources will be needed to ensure that an adequate regulatory framework and related infrastructure are in place prior to any site selection or tendering processes for a nuclear power plant. The cooperation proposed in this action is aimed at ensuring that such a framework is developed in a timely manner and that NRRA has the necessary expertise and competence to implement it effectively.

Also covered by the actions in this project is the enhancing of the capabilities of the regulatory authority in the areas of radiation safety and nuclear safeguards and promoting standards and practice that are broadly in accord with those in the EU. Radiation safety has been and currently remains the focus for much of NRRA's regulatory activities.

2.2 Lessons learnt

Considerable experience has been gained, both in projects carried out within the INSC and the former TACIS (Technical Assistance to the Commonwealth of Independent States) programme, in supporting the development of national frameworks for regulating radiation and nuclear safety, as well as in enhancing regulatory capabilities in the areas of radiation safety and nuclear safeguards; and in promoting the application of EU legislation and practice. Use has been made of this experience in optimising the scope, content and design of this action.

2.3 Complementary actions

This action would be the third to be implemented in Mongolia in the field of nuclear safety. Cooperation is ongoing within a regional project REG4.01/10 on 'the establishment of a legislative and regulatory framework for the remediation of uranium legacy sites in Central Asia' and is in the process of being further developed through the MN3.01/11 project concerned with the development of a regulatory framework for uranium mining and milling operations. This project will complement the outputs of the two above-mentioned projects which are related respectively to legacy sites and to uranium mines and milling, allowing to have a full-scope regulatory regime for nuclear energy.

2.4 Donor coordination

This action is self-contained and is not directly linked to any potential actions of other donors or the International Atomic Energy Agency (IAEA). The project does not foresee the participation of other international donors and does not overlap with any other existing bi-lateral or multi-donor initiatives. The European Union will remain the only fund provider apart from the partner country.

Close coordination with other partners is nonetheless foreseen, in particular with the IAEA. Technical cooperation between the IAEA and Mongolia is currently ongoing or planned on two regional projects relevant, albeit not directly related, to the current action, namely, RAS/0/053 'Providing Decision Support for Nuclear Power Planning and Development' (2009-2011), and RER/1/007 'Research Reactor Utilisation' (2012-2013), as well as a national project MON/9/006 'Strengthening of Regulatory and Radiation Protection Technical Capabilities'. The cooperation is being also implemented through the IAEA regional projects 'Strengthening Occupational Radiation Protection' (RAS/9/053); 'Strengthening Capabilities for Protection of the Public and the Environment from Radiation Practices' (RAS/9/056); 'Supporting Education and Training in Radiation Protection' (RAS/9/058); and 'Strengthening Nuclear Regulatory Authorities in the Asia and the Pacific Region' (RAS/9/059).

Also given the nature and diversity of the radiation safety topics in this action, the possibility for future Technical Cooperation support provided to NRRA by the IAEA

cannot be excluded. Appropriate coordination will be established with the IAEA and the partner country, both prior and subsequent to the start of this project, to ensure complementarities between any related activities and to avoid duplication.

The establishment, within this project, of a strategy for enhancing the capabilities of the regulatory body (and its Technical Support Organisations) and a plan for its implementation will facilitate cooperation with other international partners and minimise the risk of duplication in future.

3. DESCRIPTION

3.1 Objectives

The EU has defined in 2010 a wide cooperation programme in the field of nuclear safety with the Mongolian authorities. After AAP 2011, the present projects under AAP 2012 are a continuation of this cooperation programme.

The objectives of this project are:

- to assist the establishment of a regulatory framework in Mongolia for nuclear power plant safety and the development of human resource capabilities required for its implementation;
- to reinforce the independence of NRRA by enhancing its capabilities in several areas, in particular nuclear and radiation safety, and nuclear safeguards;
- to promote the adoption of standards and regulatory practices in these areas that are broadly in accord with the EU legislation and IAEA standards and recommendations and
- to assist the establishment of a regulatory framework in Mongolia for the safety of a potential future nuclear power plant and the development of human resource capabilities required for the implementation of this framework.

The purpose of the programme is not to promote nuclear energy, but to obtain a high level of nuclear safety and to increase the independence of the regulator; it will also serve the objective to accelerate the ratification of the relevant Safety Conventions by Mongolia.

3.2 Expected results and main activities

Task 1 – Strategy for establishing a regulatory framework for nuclear power plant safety

The objectives of this task are:

- to develop a strategy for establishing a regulatory framework for nuclear power plant safety in Mongolia;
- to develop an Action Plan for implementing the strategy in a timely and effective manner;
- to develop a Cooperation Plan identifying how and where cooperation, under the auspices of the INSC programme, could contribute to the more effective and timely implementation of the strategy and the Action Plan.

The strategy and its implementation (i.e., the Action Plan) will provide a basis for the establishment of an adequate regulatory framework for nuclear power plants and also for ongoing and future cooperation under the auspices of the INSC programme (and/or

with other potential partners). The development of qualified and sustainable human resources and training will be an integral and key part of this strategy.

Task 2 - Development of a regulatory framework for nuclear safety

The objective of this task is to assist NRRA in the development of a regulatory framework for nuclear power plant safety in Mongolia that is based on best international standards and practice.

The framework will comprise a comprehensive and fully integrated set of regulations and guides addressing, *inter alia*, the following topics:

- the process for licensing nuclear installations;
- safety requirements for:
 - siting, including environmental impact assessment;
 - design and construction;
 - commissioning;
 - operation and maintenance;
 - radioactive waste management, including control of discharges and clearance of material;
 - spent fuel management;
 - shutdown and decommissioning;
 - release from regulatory control;
 - radiation protection;
 - monitoring of the environment and the workplace;
 - emergency preparedness and response;
 - transport of radioactive material;
 - safety assessment;
 - NPP management system

Task 3 - Development of a management system for the Nuclear and Radiation Regulatory Authority (NRRA)

The objective of this task is to cooperate with and assist the NRRA in the development of a management system for the regulatory body in order to effectively fulfill its functions to assess and regulate safety of nuclear installations.

The management system will comprise a set of plan/programme, internal procedures and/or guides to be followed by the regulatory body staff during the licensing, inspection, assessment and enforcement activities. Procedures will be developed, *inter alia*, for each of the following:

- developing regulations and guidelines;
- licensing of nuclear installations through their lifetime;
- issuing, amending, suspending, revoking and terminating a licence;
- reviewing and assessing all phases of a nuclear installation (i.e., siting, design, construction, commissioning, operation, shutdown, decommissioning and release from a regulatory control) in the specific areas (e.g. nuclear safety, radioactive waste safety, emergency planning);
- inspections, in particular addressing their objectives, scope, methodology, conduct, reporting, follow up and assessing their efficiency;
- enforcement actions.

The following general areas will also be covered: development and maintenance of safety culture, record keeping and documentation; communication with authorities, public and other stakeholders and training and qualification of staff.

Task 4 - Basic safety principles, requirements and criteria for new nuclear reactors

The objective of this task is to cooperate with the Regulatory Authority in the development of safety principles, requirements and criteria which will have to be fulfilled in a potential application for a NPP site, construction or operation licence.

These safety principles, requirements and criteria should reflect the best international standards and practice, and in particular (i) the provisions in the international Conventions (e.g. on Nuclear Safety, on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management); (ii) legislation (e.g. EU Directive on Nuclear Safety and the Directive on Community Framework for the Responsible and Safe Management of Spent Fuel and Radioactive Waste); (iii) relevant IAEA standards (requirements and guides); and reference levels established by the Western European Nuclear Regulators' Association (WENRA).

Task 5 - Independent review and assessment of safety submissions

The objective of this task is to assist the NRRA in the development of a national capability to perform and/or to initiate independent reviews and assessments of safety applications for nuclear power plants in accordance with best international standards and practice.

This capability should cover all types of safety submissions, including site safety reports, deterministic and probabilistic safety analyses, periodic safety review reports, emergency plans, plans for discharges to the environment, and environmental impact assessment reports.

Task 6 – Human resources development plan and training programme

The objective of this task is to cooperate with NRRA in establishing a human resources development plan and a sustainable training programme commensurate with the anticipated level and timing of the nuclear energy programme in Mongolia.

The plan and training programme should ensure the availability of sufficient people and skills for effective and sustainable regulation of nuclear safety. Based on identified needs, a policy and a strategy for human resources development should be established and the training programme designed accordingly. The training should be practically oriented and, to the extent possible, be structured according to the national nuclear programme.

This task does not include the training itself which should be given in another framework.

Task 7 – Support to senior management of the Nuclear and Radiation Regulatory Authority (NRRA)

The objective of this task is to provide on-site support to the senior management of the NRRA during the establishment of a strong and independent regulatory body with the competence required for effective regulation of nuclear installation (e.g. nuclear power plants, spent fuel and radioactive waste management facilities) safety.

In order to fulfil this objective on-site support by an EU expert (or experts) with extensive technical, organisational, and senior management experience in a European nuclear regulatory body is envisaged in key stages of the project. The support would focus on organisational and regulatory issues, in particular advising senior NRRA

management on (i) the timely development of a sound regulatory framework and its effective implementation; and (ii) development and maintenance of a sustainable human resource.

Task 8 – Control of radiation sources

The objectives of this task are:

- to review and strengthen the existing regulatory framework and infrastructure on safety and security of radioactive sources;
- to develop a programme for the systematic survey of areas or facilities where ‘orphan’ radioactive sources may be found (e.g., abandoned military bases of the Former Soviet Union);
- to develop an approach and/or procedures to be used in the surveys for searching for and regaining control over ‘orphan’ sources;
- to demonstrate the efficiency of the approach and/or procedures through their practical application to one area or a facility.

In assessing the adequacy of the existing regulatory framework and infrastructure, particular attention should be given to the extent to which compliance is being achieved with the IAEA Code of Conduct on the Safety and Security of Radioactive Sources and with the European Directive 2003/122/EURATOM about control of high-activity sealed radioactive sources and orphan sources.

Task 9 – Long term safe management of a damaged irradiator

The objectives of this task are:

- to cooperate in an evaluation of viable options for the long term safe management (storage or disposal) of a damaged irradiator (PMX-Gamma-20 containing 27 Cobalt-60 sources with a total current activity of about 8 TBq (≈ 200 Ci));
- to identify the best option in terms of cost-efficiency and safety; and
- to develop a plan and schedule for the removal of the irradiator (or its sources) from its (their) present location to a radioactive waste storage or disposal facility.
- To develop the technical specification that would be required for contracting the work to remove the irradiator (or its sources).

Task 10 – National infrastructure for radioactive waste management

The objective of this task is to review the national legislation and infrastructure for radioactive waste management and identify where improvements need to be made in order to comply with international safety standards and practices in the EU.

The scope of this task should be strictly limited to the management of waste arising from the uses of radiation or radioactive material in research, industry or medicine, excluding wastes arising from uranium mining and milling and the nuclear fuel cycle; the latter are being addressed in other cooperation actions being carried out under the auspices of INSC.

Task 11 – Nuclear safeguards

The objective of this task is to cooperate in the establishment of a national system for accounting and control of nuclear materials; development of guidance and providing training on its implementation.

Training should, to the extent practicable, be ‘on the job’ and aimed at developing adequate experience on, *inter alia*, the following:

- structure of the national system for nuclear materials accounting and control;
- tools and procedures for its implementation;
- feedback of experience in nuclear materials accounting and control;
- quality assurance;
- import-export and transit of nuclear materials; and
- safeguards information system.

Task 12 – Radiation from naturally occurring radionuclides

The objectives of this task are to cooperate with NRRA in:

- the development of a regulatory framework for management of naturally occurring radioactive materials (NORM);
- developing the design, scope and content of a radon survey plan of homes, workplaces and public buildings in Mongolia aimed at identifying potential public health concerns and/or the need for remedial measures.

The EU has extensive experience in the design and conduct of radon surveys for public health purposes and in managing NORM; therefore this experience should be fully incorporated when carrying out this task.

3.3 Risks and assumptions

No undue risks are expected in the implementation of the project. Effective implementation of this project assumes the full support from the national authorities (e.g. NRRA). In addition, it is assumed that the partner institutions will mobilise the necessary capacity and capabilities for management of the project cycle and make the required human resources available.

3.4 Crosscutting Issues

Through this project, Mongolia will be encouraged to sign and ratify the relevant Safety Conventions.

3.5 Stakeholders

The main stakeholder is the NRRA of the Nuclear Energy Agency of Mongolia.

4. IMPLEMENTATION ISSUES

4.1 Method of implementation

Centralised direct management.

A Financing Agreement will be signed with the partner country, Mongolia.

4.2 Procurement and grant award procedures

The project will be implemented by awarding one or more service contract(s).

All contracts implementing this action must be awarded and implemented in accordance with the procedures and standard documents laid down and published by the Commission for the implementation of external operations, in force at the time of the launch of the tender procedure in question.

Participation in the award of contracts for the present action shall be open to all natural and legal persons covered by the INSC Regulation (COUNCIL REGULATION (EURATOM) No 300/2007 of 19 February 2007 establishing an Instrument for Nuclear Safety Cooperation).

4.3 Budget and calendar

Total estimated EU budget: € 3 million

Estimated contract duration: 36 months

Type of contract(s): Service

4.4 Performance monitoring

The action will be subject to Results Oriented Monitoring (ROM) providing valuable insights for each specific task but also on the performance of the contractor on the global aspect.

In addition to ROM the action will be monitored internally using traditional project management Key Performance Indicators, such as:

- achievement of milestones;
- progress reports and technical reports;
- use of resources.

The long term aspects will be based on Key Performance Indicators to be specified in the Terms of Reference. They will be defined so as to quantify the medium-long term impact of the action. The involvement of the partner country in this evaluation exercise is important for the sustainability of the activities.

4.5 Evaluation and audit

The project will be monitored in compliance with the standard procedures. Monitoring and assessment should be based on periodic assessment of project activity progress, achievement of project outputs and its objectives.

In addition to the follow-up and controls carried out on the spot, as necessary, by the Commission's services, including the European Antifraud Office (OLAF) and the Court of Auditors, projects shall be monitored on a regular basis by appropriately qualified specialists based in the field. Independent ex-post evaluations will be conducted periodically, in order to assess the relevance, effectiveness, efficiency and impact of the programme.

4.6 Communication and visibility

Visibility activities will be implemented according to well-defined standards and rules: the EU visibility guidelines for external actions. These guidelines are a part of the contractual obligations of implementing partners/Consultants and must therefore be carried out in the same way as any other contractual element.

On a regular basis, the Consultant will submit Progress Reports to the European Commission. The Consultant shall pay particular attention to the confidentiality of the data.

Other deliverables dedicated to visibility may include:

- An inception press release at the start-up of the project;
- A final press release to be provided with the project final report;
- A final presentation meeting for the dissemination of the project results organised by the Consultant.

Other actions to disseminate results or increase the visibility of the EU action may be implemented in parallel to the present projects.

ANNEX X

ACTION FICHE FOR UKRAINE (WASTE)

1. IDENTIFICATION

Title/Number	U4.01/12 - Infrastructure improvement for radioactive waste management, remediation of contaminated sites and decommissioning in Ukraine		
EU contribution	€9.5 million		
Aid method / Method of implementation	Project approach: Centralised direct management		
DAC-code	23064	Sector	Nuclear Safety

2. RATIONALE

2.1. Sector context

Ukraine continues to deal with the consequences of the 1986 Chernobyl accident and radioactive waste generated by past practices. With help from the European Union (EU) and others, improvements have been made in the organisation of radioactive waste management through, for example, the development of a national strategy and programme and the establishment of the Centralised Radioactive Waste Management Enterprise. Within the Exclusion Zone, key elements of the radioactive waste management infrastructure have been developed or improved:

- Industrial Complex for Solid Radioactive Waste Management (under finalisation);
- Liquid Radioactive Waste Treatment Plant (ongoing);
- Interim Spent Fuel Storage Facility (ongoing);
- New Safe Confinement (ongoing – as part of the Shelter Implementation Plan);
- Centralized Long-term Storage Facility for Highly Radioactive Sources at the site of complex “Vektor” (ongoing).

Notwithstanding these very significant investments, much remains to be done both inside and outside the Exclusion Zone.

2.2. Lessons learnt

A comprehensive national strategy for managing Ukraine’s legacy waste and future radioactive waste was developed through the TACIS¹³ project U4.03/04¹⁴ which led to the revision of the Law on Radioactive Waste Management and the Law of Ukraine on State Purpose-oriented Environmental Programme for Radioactive Waste Management in 2008. Building on this, a “Strategic Road Map” for radioactive waste

¹³ Technical Assistance to the Commonwealth Independent States

¹⁴ Development of a National Strategy and a Concept for State Programme for Radioactive Waste Management in Ukraine, including the Strategy for NNEGC Energoatom Radioactive Waste Management

management was developed in 2009-2010. The latter identifies more than 60 projects on radioactive waste storage and disposal that need to be implemented.

The Strategic Road Map projects are prioritised on the basis of high-level objectives and project inter-dependencies. The sub-projects presented in this Action Fiche are developed on the basis of the Strategic Road Map and, using best international practice and safety standards, aim to assist the country in implementing its priority actions.

Many TACIS and INSC (Instrument for Nuclear Safety and Cooperation) projects on radioactive waste management have been successfully implemented in Ukraine. An important element is the establishment of effective and collaborative working relationships between the European Commission, the Beneficiaries/End-users, regulators and the implementers (Consultants).

2.3. Complementary actions

As noted in Section 2.1 a number of EU-funded radioactive waste management projects are already ongoing. This project will be coordinated with these as necessary and also with INSC projects U4.01/10¹⁵, U4.01/09¹⁶, U4.01/08¹⁷, U4.02/08¹⁸ and U4.01/05¹⁹ which include a number of sub-projects that are complementary to those presented in this document, and also with INSC project U4.01/11²⁰ to which this project is also complementary.

Due consideration will also be given to other relevant projects (e.g. International Atomic Energy Agency, IAEA), national legislation and international safety standards and recommendations.

Sub-projects U4.01/12-A), B), C), D) and E) described in Section 3 include contributions from the budget of Ukraine, i.e. human resources and use of existing facilities. Sub-project F) contributes directly to the ongoing activities under implementation by French partners, which are aimed at establishing an infrastructure for recovery and conditioning of highly radioactive disused sealed sources stored at the “Radon” sites. The whole project by virtue of the Strategic Road Map is complementary to the State Purpose-oriented Environmental Programme for Radioactive Waste Management.

2.4. Donor coordination

EU funding does not overlap with any other existing bilateral or international donor activities.

Where relevant, coordination of activities of the various stakeholders will continue to be achieved through the utilisation of instruments already established for coordination (i.e. Task Force, Radioactive Waste Projects Coordination meeting, Coordination Committee on Management of Disused Radioactive Sources).

¹⁵ Support to Radioactive Waste Management in Ukraine (AP 2010)

¹⁶ Support to the Establishment of a National Waste Management Organization and the Improvement of the Radioactive Waste Management Infrastructure in Ukraine (AP2009)

¹⁷ Improvement of Radioactive Waste Classification and Management in Ukraine (AP2008)

¹⁸ Feasibility Study and Preliminary Design for a Near-Surface Facility for the Long-Term Storage of Long-Lived and High Level Radioactive Waste on Site of the Complex “Vektor” in the Chernobyl Exclusion Zone (AP2008)

¹⁹ Establishment of a Comprehensive Radiation Monitoring and Early Warning System in the Chernobyl Exclusion Zone (AP2005)

²⁰ Infrastructure Improvements for Radioactive Waste Management and Decommissioning in Ukraine (AP 2011)

3. DESCRIPTION

3.1. Objectives

This project is aimed at meeting the INSC goals and is in line with the INSC priorities on radioactive waste management, decommissioning and remediation of contaminated sites from past practices as described in the Nuclear Safety Strategy Paper²¹.

The overall objective of the project is to improve the safety, efficiency and cost-effectiveness of radioactive waste management and decommissioning in Ukraine through infrastructure improvement, licensing support to the operator and training of staff. Based on the priorities and inter-dependences of the Strategic Road Map, this project is planned to be implemented through six sub-projects whose objectives are as follows:

- Support in establishment of facilities for storage of long-lived and high-level radioactive waste at the complex “Vektor” site in compliance with relevant requirements of norms, rules and standards effective in Ukraine, and applying international best practice.
- Improvement of the system for emergency response to radiation incidents in Ukraine that are unrelated to NPP operation.
- Improvement of the radiation monitoring system at 6 specialised enterprises of ‘Radon’.
- Development of methodologies, technical processes and procedures for remediation of sites/storages and their implementation at one pilot site.
- Safety improvement through more systematic training of staff of Ukrainian NPPs and radioactive waste management facilities.
- Improvement of the infrastructure for conditioning of Disused Sealed Radiation Sources (DSRS) at “Radon” sites.

The sub-projects are outlined in the next section and described in more detail in the attached Technical Annexes.

3.2. Expected results and main activities

The project is expected to result in improved infrastructure for radioactive waste management (processing, storage and disposal) and decommissioning in Ukraine, increased capabilities of staff and remediation of selected storage sites. The specific sub-projects can be summarised as follows:

A) Establishment of storage facilities in Phase 2 of the “Vektor” complex. Detailed design of Long Lived Waste and High Level Waste storage facilities (U4.01/12-A)

This project carries forward the feasibility study and preliminary design developed under U4.02/08 project for safe long-term storage facilities for the high-level and long-lived radioactive waste that will result from the decommissioning of the Chernobyl NPP, the transformation of the Shelter Object to an ecologically safe

²¹ Commission Decision 8 August 2007 C(2007)3758

system and the return of vitrified High-level Waste from Russia. The project will develop and deliver:

- Necessary working documentation for the civil works and the main and auxiliary systems;
- Design documentation to allow the manufacture of any non-standard equipment;
- Safety assessment report for the design phase.

B) Assistance in the establishment of an emergency response system at Ukrainian State Association “Radon” for dealing with accidents involving unauthorised radioactive materials that are not related to nuclear power plant (NPP) operation (U4.01/12-B)

This sub-project will create regional emergency teams capable of retrieving unauthorised radioactive material (e.g. orphan sources) and making it safe and secure. It will deliver:

- Review of international best practice with respect to (i) legal and regulatory framework to minimise the creation or the importation of orphan sources and (ii) the detection, retrieval and management of orphan sources;
- Recommendations for implementation in Ukraine to improve control of radioactive material and detection, retrieval and management of unauthorised radioactive material;
- Procedures describing appropriate responses to the discovery of unauthorised radioactive material;
- Training for specialist teams;
- Technical specifications for required equipment;
- Supply of required equipment.

C) Establishment of an integrated automatic system for environmental radiation monitoring at specialised enterprises of Ukrainian State Association “Radon” (U4.01/12-C)

Ukraine intends to install a radiation monitoring and early warning system for the whole country. An important component of this system will be an integrated environmental monitoring system for the regional enterprises of the Ukraine State Association ‘Radon’. The sub-project will deliver:

- Conceptual design of an automatic, integrated monitoring system for Radon specialised enterprises based on international best practice;
- Technical Specification for the radiation monitoring system (integration of the network with the European Radiological Data Exchange Platform will also be investigated);
- Supply of the monitoring system, equipment testing, installation and commissioning at six sites;
- Training of staff;
- A dissemination workshop.

D) Remediation of radioactive waste storage sites resulting from the Chernobyl Nuclear Power Plant accident and situated outside the Exclusion Zone (U4.01/12-D)

Some of the radioactive waste generated during the cleanup after the 1986 accident is held at 54 storage sites outside the Exclusion Zone. These are close to populated areas and security is inadequate. The sub-project constitutes an important step towards reducing the hazards and remediation of the sites. It will deliver:

- Evaluation and documentation of the volume, activity and nature of the material held at all storage sites;
- Use of the survey information to develop an assessment and a methodology (including technical proposals and procedures) for remediation where this includes retrieval, sorting, conditioning and transport of radioactive material for storage and/or disposal off site and decommissioning of structures and cleanup of associated territory;
- Regulatory approval of the proposed methodology and assessment;
- Development of technical specifications for the equipment;
- Supply of the equipment required to remediate the sites/storages;
- Training of “Radon” staff in the use of the equipment;
- Remediation of a pilot site and revision of methodology in view of lessons learned;
- A dissemination workshop.

E) Improvement of a national training system in the field of radioactive waste management, decommissioning and remediation (U4.01/12-E)

The sub-project aims to establish a national system and improve capabilities of existing training. It will deliver

- A review of best international practice in the field;
- Preparation of staff training programmes, courses and materials covering all aspects (theoretical and practical) of radioactive waste management, decommissioning and remediation;
- Technical Specifications for tools and equipment needed for development of practical skills;
- Supply, installation and commissioning of tools and equipment needed for development of practical skills;
- Delivery of pilot courses for staff;
- Training of instructors;
- Recommendations regarding the project dissemination throughout the industry;
- Dissemination workshop (for the key stakeholders in the industry).

F) Support in establishment of sustainable scheme for safe management of DSRS in Ukraine (U4.01/12-F)

The sub-project aims to improve infrastructure for DSRS management at “Radon” sites to facilitate for safe preparation of DSRS for transportation to the centralised storage facility at “Vektor” site. It will develop and deliver:

- Engineering and radiological survey of all “Radon” sites;
- Design and procurement of mobile modular building for housing of the DSRS extraction cell;
- Equipment and tools for the preparation of DSRS to their extraction from irradiation blocks (biological shielding).

The background to these sub-projects, their objectives and expected results are defined in the technical annexes to this Action Fiche.

This sub-project is consistent with the criteria of the EU Council Regulation establishing the INSC²² and with the revised multiannual strategy²³ and indicative programme²⁴.

3.3. Risks and assumptions

The proposed activities form part of a wider Multi-indicative 2012-2013 Programme that has been developed in conjunction with the EU and Ukrainian partners and independent experts. The activities have been chosen after due consideration of strategic goals of EU and Ukraine, the needs of the beneficiaries and end users, as well as the expected resource and time constraints.

An ongoing risk for the project implementation is the possibility of budgetary constraints that may prevent Ukrainian partners from meeting their commitments. This risk has been mitigated by reducing, to the extent possible, interdependencies between EU funded and end-user funded components, and also by drawing on End-Users' human resources and existing facilities rather than financial contributions.

Another potential risk is the possibility for delay of the review of specific documentation (see attachment) that will require approval or consent from the Ukrainian authorities (e.g. U4.1/12-A and U4.1/12-D). Such risk will be mitigated through effective planning of the sub-projects, involvement of the respective authorities throughout the project, selection of appropriate consultants and effective project management.

The implementation of U4.01/12-A sub-project assumes that the ongoing project U4.02/08 will be completed as planned prior to the start of this project.

The implementation of U4.01/12-F sub-project assumes that the technical outputs of the on-going French funded activities on design, manufacture and supply of modular protection cell for extraction of sources from irradiation blocks at “Radon” site as well as new type B containers will be available, as planned, prior to commencement of design of the mobile modular building to form an input data for design.

Where additional engineering or site investigation activities need to be performed (sub-projects U4.1/12-A, U4.1/12-D and U4.1/12-F), the project description is based

²² Council Regulation (Euratom) No. 300/2007 of 19 Feb 2007

²³ Commission Decision on Revised Strategy for Community Cooperation Programmes in the field of Nuclear Safety for the period 2010-2013

²⁴ Commission Decision on the Indicative Programme 2012-2013 for Community Cooperation Programmes in the field of Nuclear Safety

on existing knowledge, assuming that no significant changes to the sub-projects' scope is to be expected.

No additional risks have been identified that would constitute a significant obstacle for implementation of the project.

3.4. Crosscutting Issues

When completed, the project outcome is expected to constitute a significant part of the radioactive waste management and decommissioning infrastructure of Ukraine. It will implement part of the activities envisaged in the State Purpose-oriented Environmental Programme for Radioactive Waste Management. As such it will contribute to the wider objective of providing improved safety of storage and disposal of radioactive waste.

It will be implemented in line with the IAEA safety principles (No. SF-1) and requirements for safe storage (No. GSR Part 5) and disposal (No. SSR-5) with focus on waste minimisation and protection of present and future generations. The Ukrainian Regulatory Authority will be closely associated in the follow-up of the work implemented by the Nuclear Operator and will in particular assess the compliance of the work with the safety standards.

The project also aims to implement lessons learned from other relevant INSC and international projects that can contribute to the effectiveness and success of the project.

3.5. Stakeholders

The beneficiary country is represented by the State Agency of Ukraine for the Management of the Exclusion Zone. The State Nuclear Regulatory Inspectorate of Ukraine, the Ministry of Health and the Inspection of Fire Protection will also be involved. Other safety authorities may also be involved with respect to conformity of project works with the national security standards.

The End-Users include UkrSA (Ukrainian State Association) "Radon", SSE (State Specialized Enterprise) "Chernobyl Nuclear Power Plant", and SSE "Centralised Radioactive Waste Management Enterprise".

4. IMPLEMENTATION ISSUES

4.1. Method of implementation

Centralised direct management

A Financing Agreement will be signed with the beneficiary country for sub-projects A), B), C), D) and E).

Co-financing of the project is envisaged as detailed in the Technical Annexes (see attachments).

4.2. Procurement and grant award procedures

It is anticipated that:

- Sub-projects A), B), C), D) and E) will be implemented by awarding one or more contracts;
- Sub-project F) will be managed through a grant to be awarded to the French Alternative Energies and Atomic Energy Commission (CEA), which is

leading the process on establishment of an infrastructure for disused sealed radioactive source conditioning at “Radon” sites without a Financing Agreement.

Contracts and grant will be awarded and implemented in accordance with the procedures and standards published by the European Commission at the time of contract signature.

Participation in the award of contracts for sub-projects A), B), C), D) and E) shall be open to all natural and legal persons covered by the INSC. Further extensions of this participation to other natural or legal persons by the concerned authorising officer shall be subject to the conditions provided for in Article 14 of this instrument.

Participation in the award of contracts for the present action shall be open to all natural and legal persons covered by the INSC Regulation (COUNCIL REGULATION (EURATOM) No 300/2007 of 19 February 2007 establishing an Instrument for Nuclear Safety Cooperation).

All contracts implementing the action must be awarded and implemented in accordance with the procedures and standard documents laid down and published by the Commission for the implementation of external operations, in force at the time of the launch of the procedure in question.

4.3. Budget and calendar

Total estimated EU budget: €9.5 million

Estimated contract duration: 36 months maximum.

Type of contract(s): Service and supply, grant

4.4. Performance monitoring

The project will be monitored internally using Key Performance Indicators (KPIs) via (see attachment):

- Achievement of milestones;
- Delivery of progress reports and technical reports;
- Use of resources.

In cooperation with the Ukrainian partners, specific KPIs for sub-projects will also be defined to aid external monitoring by, for example, reference to high-level objectives and the medium to long-term impact of the project.

External monitoring will rely on Results Oriented Monitoring (ROM) which is a highly structured methodology based on relevance, efficiency, effectiveness, impact, and sustainability of a project. In ROM, independent monitors gather data such as KPIs from key project documents and by interviewing relevant stakeholders (such as beneficiaries). The expectation is that ROM will provide a measure of the benefit of the project in terms of its contribution to the national programme.

4.5. Evaluation and audit

The project will be monitored in compliance with European Commission standard procedures. Results Oriented Monitoring and assessment of the project will be performed periodically.

If needed, further on site review will be carried out by the European Commission's services, including the European Antifraud Office (OLAF) and the Court of Auditors.

4.6. Communication and visibility

Visibility activities will be implemented according to well-defined standards and rules: the EU visibility guidelines for external actions. These guidelines are a part of the contractual obligations of implementing partners/Consultants and must therefore be carried out in the same way as any other contractual element.

On a regular basis, the Consultant will submit Progress Reports to the European Commission. The Consultant shall pay particular attention to the confidentiality of the data.

Other deliverables dedicated to visibility may include:

- An inception press release at the start-up of the project;
- A final press release to be provided with the project final report;
- A final presentation meeting for the dissemination of the project results organised by the Consultant.

Other actions to disseminate results or increase the visibility of the EU action may be implemented in parallel to the present projects.

ANNEX XI

ACTION FICHE FOR UKRAINE (OPERATOR)

1. IDENTIFICATION

Title/Number	U1.05/12 - Cooperative safety programme to enhance safety and endurance of NNEGC Energoatom's nuclear power plants in case of extreme external impacts		
EU contribution	€3 million		
Aid method / Method of implementation	Centralised direct management		
DAC-code	23064	Sector	Nuclear Safety

2. RATIONALE

2.1. Sector context

In Ukraine there are currently 15 power units in operation under the Ministry of Energy and Coal Industry of Ukraine, at four Nuclear Power Plants (*NPPs*) of National Nuclear Energy Generating Company (NNEGC) "Energoatom". The total installed capacity of these plants is 13,835 MW, which is 26.6% of the total electricity generating capacity of the country. In 2011, the NPP share in the actual electricity generation in Ukraine was approximately 50%. All operating NPP units are based on the water-moderated water-cooled reactor design.

At the same time, Ukraine has declared its intention to continue the construction of nuclear power plants to replace the old ones and to increase the power capacity of NPP's to 20 GW by 2030.

A joint study of the Ukraine, the European Commission and the International Atomic Energy Agency (IAEA) to assess safety levels of Ukrainian NPP's was recently completed. International experts concluded that the Ukrainian nuclear power units now generally comply with most of the requirements of the IAEA standards for nuclear safety.

To further improve the safety levels at the operating NPPs, NNEGC "Energoatom" has sought financing from Euratom/EBRD to undertake the "Upgrade Package" project, which is the Consolidated Safety Upgrade Programme for all Nuclear Power Plants of Ukraine.

Following the accident at the Fukushima NPP in March 2011, the Council of the European Union declared that all EU nuclear plants should be reassessed in terms of their safety margins in the event of extreme natural events challenging the plant safety functions and leading to a severe accident ('stress tests').

‘Stress Test’ assessments of Ukrainian NPPs are complete and a number of required improvements have been identified. Those that are not already included in the existing Safety Upgrade Programme will be implemented additionally.

2.2. Lessons learnt

Many projects to modernise and enhance safety at Ukrainian NPPs were implemented in the past decades, involving western support in the framework of the international and bilateral cooperation programmes.

Due to substantial improvements in design safety achieved in Ukrainian NPPs over the recent two decades, the need for EU financial participation in projects directly related to plant modernization has decreased.

The focus of EU activities has therefore been re-directed to cultural and human aspects of plant safety. However, the recent Fukushima events have shown that closer attention has to be paid also to management of severe accidents to make sure that the plants are well prepared and able to respond properly, especially to situations caused by extreme external effects not directly assumed in plant design.

This major lesson learnt from the recent course of events in the nuclear industry is the basis for the INSC projects proposed for the AP2012.

2.3. Complementary actions

The INSC support to Energoatom aims at a corporate approach, thus ensuring that all Ukrainian NPP’s benefit from the assistance through the implementation of common programmes of enhancement.

Where necessary, projects will also be launched with the Ukrainian Regulator and its Technical Support Organisation in cooperation with EU Regulators in the frame of the 2+2 approach. This parallel action will ensure that changes initiated under the present project at the NPPs are supported, where required, by the appropriate regulatory process.

2.4. Donor coordination

Financing of projects will be co-funded entirely by the European Union and Energoatom, and will not constitute an overlapping with other existing bilateral or international donor activities. No donor coordination is foreseen as the Community will remain the only fund provider besides the beneficiary country.

3. DESCRIPTION

3.1. Objectives

The support to the nuclear operator action proposed for AP2012 is focused on improvement of the ability of nuclear power plants to withstand external impacts like extreme weather conditions, flooding, seismic loads, etc., and prevent severe accidents caused by such impacts.

The individual components of the action will contribute to higher resistance of Ukrainian NPPs to seismic events through performance of probabilistic assessment of seismic risk and to enhancement of integrity of nuclear safety related NPP buildings through monitoring of their structural conditions.

3.2. Expected results and main activities

Two projects have been identified for the INSC AP 2012 in the sector of support to the nuclear operator Ukraine. The main activities and expected results of the individual projects have been as follows.

3.2.1. Establishment of a system for monitoring technical conditions of NPP buildings and structures based on advanced methods and techniques

The objective of the project is to create an enhanced system for monitoring the integrity of safety related buildings, structures and facilities (reactor building including containment, turbine hall, solid radwaste storage facility, diesel-generators, etc.) and establish a strategy for periodic and continuous monitoring of key structures and associated components in order to maintain their operable condition and integrity. This project seeks to introduce a more stringent and technically based examination and monitoring of such items, establish building/structure integrity criteria and recommend adequate measures to maintain building structures.

The **main project activities** will include:

Review of the parameters and buildings being currently monitored at the pilot plant (Khmelnitsky NPP) and analysis of a gap between the existing Ukrainian condition monitoring methodology and the best international practice;

Development of methodology for monitoring of safety-related buildings and structures at the pilot plant to obtain the most complete information about real condition of building structures and their ability to withstand the postulated maximum internal or external impacts;

Development of a structure condition monitoring (Quality Assurance) programme including the main processes of the system, personnel responsibilities, monitoring system operating procedures and system calibration requirements;

Preparation of detailed technical specifications of the condition monitoring system equipment (purchase of the equipment will be the responsibility of the Beneficiary under the parallel co-financing);

Development and verification of a structure monitoring control software allowing data acquisition, storage, evaluation and remote communication, as well as on-line diagnostics of the monitoring equipment;

Performance of Beneficiary/pilot nuclear power plant personnel training in the developed monitoring methodology and monitoring system operation;

Verification of the proposed methodology and demonstration of the monitoring system operability at sample pilot plant buildings/structures.

The **main results** of the project would be development of a structure/building condition monitoring program and methodology, the condition monitoring system control software and technical specifications of the condition monitoring system equipment. Within the project, Beneficiary personnel should be trained and operability of the structure/building condition monitoring system should be demonstrated at a sample of pilot plant's safety-related buildings.

3.2.2. Assessment of risks caused by seismic loads on the NPP sites (probabilistic analysis of seismic risks)

The objective of the project is to perform probabilistic assessment of a seismic risk to South Ukraine NPP (SUNPP) safety including specification of measures for improvement of the seismic strength of the operating SUNPP units.

The **main project activities** will include:

Performance of a Gap Analysis comparing Ukrainian methodology in the assessment of NPP seismic risk with up-to-date international practice; providing recommendations for improvement of the Ukrainian approach;

Transfer of the best international practice and methodology of seismic risk analyses (including Seismic PSA) to the Beneficiary

Methodological support to Beneficiary personnel in performance of the probabilistic seismic risk assessment for the pilot plant (SUNPP unit 3)

Specification of measures for improvement of pilot plant seismic resistance

Review of results of the probabilistic seismic risk assessment performed at other SUNPP units and recommendation of improvements

The **main results** of the project would be a methodology of probabilistic assessment of seismic risk (seismic PSA) based on best international practice, probabilistic seismic risk assessment for the pilot plant, specified measures for pilot plant safety improvement based on the seismic risk assessment results and improved qualification of the beneficiary personnel in performance of probabilistic assessment of NPP seismic risk.

3.3. Risks and Opportunities

In all stages of development of the individual projects, the EU consultants have to closely cooperate with experts of NNEGEC Energoatom. It is assumed that the consultants will be more involved in the initial stages of project implementation, while in the application of project results, their support and participation will decrease. However, high level of participation of NNEGEC Energoatom's experts will be required throughout the whole project implementation to ensure knowledge transfer, sustainability and dissemination of the project results throughout the beneficiary organization. The beneficiary will also provide the necessary cover ancillary services e.g. engineering, hard and software as well as roll out costs to all other NPPs.

The beneficiary has to ensure high level of project management with active participation of his personnel in all training and knowledge transfer activities organized by EU consultants. This kind of beneficiary involvement along with establishment of dedicated project implementation teams of consultant and beneficiary cooperating within a joint working group for each project have proved crucial for project success since AP2007 onward. The beneficiary also has to assign and schedule its own resources to each project to facilitate project implementation, enable knowledge transfer and maximise sustainability.

3.4. Crosscutting Issues

The activities proposed for the INSC AP2012 in Ukraine would bring a direct benefit to safety, safety management and safety culture in the areas covered by the project both at the individual NPPs and in NNEGEC “Energoatom” as a whole.

3.5. Stakeholders

The projects will concern all Ukrainian NPPs and NNEGEC Energoatom Head Offices. The project on “Assessment of risks caused by seismic loads on the NPP sites” may also concern the Ukrainian nuclear regulator SNRIU.

4. IMPLEMENTATION ISSUES

4.1. Method of implementation

Centralised direct management.

A Financing Agreement will be signed with the beneficiary country, Ukraine.

4.2. Procurement and grant award procedures

All contracts implementing the action must be awarded and implemented in accordance with the procedures and standard documents laid down and published by the Commission for the implementation of external operations, in force at the time of the launch of the procedure in question.

4.3. Budget and calendar

Total estimated EU budget: €3 million

Estimated contract duration: 36 months

Type of contract(s): Service

4.4. Performance monitoring

Each individual project topic will be monitored for its impact on the safety of operation of the involved nuclear power plants. Key Performance Indicators (KPI) will also be defined to monitor the effectiveness of the project implementation. These KPIs will be defined and agreed at an early stage of project definition before contracting.

The individual projects will be monitored internally within the European Commission using traditional project management Key Performance Indicators, such as:

Achievement of mile-stones,

Progress reports and Technical reports,

Use of man power resources and

The impact of each topic on the safety of the NPPs through topic-specific indicators, and if relevant on the overall nuclear safety situation in the partner country

4.5. Evaluation and audit

The evaluation of the performance will be carried out by the bi-annual progress reports.

4.6. Communication and visibility

Visibility activities will be implemented according to well-defined standards and rules: the EU visibility guidelines for external actions. These guidelines are a part of the contractual obligations of implementing partners/Consultants and must therefore be carried out in the same way as any other contractual element.

On a regular basis, the Consultant will submit Progress Reports to the European Commission. The Consultant shall pay particular attention to the confidentiality of the data.

Other deliverables dedicated to visibility may include:

- An inception press release at the start-up of the project;
- A final press release to be provided with the project final report;
- A final presentation meeting for the dissemination of the project results organised by the Consultant.

Other actions to disseminate results or increase the visibility of the EU action may be implemented in parallel to the present projects.

ANNEX XII

ACTION FICHE FOR GLOBAL ALLOCATION

1. IDENTIFICATION

Title/Number	Global Allocation – Accompanying measures for the management of the INSC 2012 programmes		
EU contribution	€995.700,00		
Aid method / Method of implementation	Project approach: Centralised direct management		
DAC-code	23064	Sector	Nuclear Safety

2. RATIONALE

2.1. Sector context

The strategic framework for the implementation of the INSC programme is constituted by the INSC Revised Strategy 2010-2013 (C/2009/9822), the Indicative Programme 2010-2011 (C/2009/9820) of 8 December 2009 and the Council Regulation (EURATOM) N° 300/2007 of 19 February 2007 establishing an Instrument for Nuclear Safety Cooperation (INSC), hereinafter referred to as “the Regulation”, which provides for support measures in its Article 9. It stipulates that EU financing " *may cover expenditure associated with the preparation, follow up, monitoring, auditing and evaluation activities directly necessary for the implementation of this Regulation and the achievement of its objectives, e.g. studies, meetings, information, awareness-raising, training and publication activities, expenditure associated with computer networks for the exchange of information and any other administrative or technical assistance expenditure that the Commission may incur for the management of the Programme.*"

2.2. Lessons learnt

The main purpose of the Global Allocation and support measures is to allow programme and project preparation to proceed in a quick and effective manner. Furthermore the global allocation shall provide for support measures to existing EU programmes where appropriate in order to ensure efficiency, performance and impact of all activities related to INSC implementation.

Funding for small-scale support measures with flexible and swift decision-making will make a vital contribution to the partnership.

2.3. Complementary actions

Not applicable.

2.4. Donor coordination

Not applicable.

3. DESCRIPTION

3.1. Objectives

The global allocation will be used as a framework for funding activities under the Instrument for Nuclear Safety Co-operation (INSC) in fields including:

- Programme support and studies, information and visibility
- Audit

Both programme support and studies and information and visibility will receive €965,700 and the remaining €30,000 will be devoted to audit activities.

3.2. Expected results and main activities

3.2.1. Programme support and studies

- Preparation of projects and general studies which may result in EU assistance (e.g. studies in specialist areas, preparatory activities/studies and assessments);
- Support to the implementation of projects;
- Support to programme implementation (committees, expert group, etc.);
- Support to programme results evaluation
- Missions to be conducted in the field of nuclear safety contracting operations (experts for evaluations, etc.) and
- Workshops and seminars

3.2.2. Information and visibility

Activities raising EU visibility and information initiatives in the following areas: Audiovisual and multimedia, publications, information on the EU and the partnership relations, promotion of dialogue.

The activities will include publication programmes, website and database management, in-country information activities, media relations and media monitoring, the production of audio-visual material and information support to events and conferences.

The global allocation shall also cover the organisation and financing of meetings, seminars and conferences, including all related seminar costs and travel, accommodation relating to the programming and operation of the INSC programme.

3.2.3. Audit

This programme component shall cover the direct fees, costs and reimbursable expenses incurred by experts contracted by the Commission to undertake audits on INSC projects.

3.3. Risks and assumptions

The main risks are:

- An imperfect cooperation between the different partners in the projects resulting in delays and information retention leading to non-achievement of certain end results.
- Unexpected developments or delays that would make the results obtained with these projects eventually irrelevant.

3.4. Crosscutting Issues

Not applicable.

3.5. Stakeholders

The target groups are the managers responsible for the organisation for the various activities connected to nuclear safety operations in the partner countries, the European Commission and more generally the European citizens and the population of the beneficiary countries through the increase of the nuclear safety level.

4. IMPLEMENTATION ISSUES

4.1. Method of implementation

Centralised management by Commission headquarters. The individual projects will be implemented by means of service and framework contracts.

4.2. Procurement and grant award procedures

All contracts implementing the action must be awarded and implemented in accordance with the procedures and standard documents laid down and published by the Commission for the implementation of external operations, in force at the time of the launch of the procedure in question.

Participation in the award of contracts for the present action shall be open to all natural and legal persons covered by the INSC Regulation.

2) Specific rules for grants

The essential selection and award criteria for the award of grants are laid down in the Practical Guide to contract procedures for EU external actions. They are established in accordance with the principles set out in Title VI 'Grants' of the Financial Regulation applicable to the General Budget. When derogations to these principles are applied, they shall be justified, in particular in the following case:

- Financing in full (derogation to the principle of co-financing): the maximum possible rate of co-financing for grants is 80%. Full financing may only be applied in the cases provided for in Article 253 of the Commission Regulation (EC, Euratom) No 2342/2002 of 23 December 2002 laying down detailed rules for the implementation of the Financial Regulation applicable to the General Budget.

4.3. Budget and calendar

Budget line: 19060401

Total estimated EU budget: €995.700,00

Estimated contract duration: 36 months

Type of contracts: Service and framework

4.4. Performance monitoring

Having regard to the diversity of the projects, including audit projects, it is not possible to draw up an exhaustive list of indicators applicable to all individual actions. However, each project will be detailed in specific Terms of Reference where the suitable indicators will appear. The Commission in monitoring the implementation will rely on these indicators and will check their respect by the selected contractor.

4.5. Evaluation and audit

The activities financed under this programme can be monitored and subject to evaluation/audit according to standard procedures.

4.6. Communication and visibility

Visibility activities will be implemented according to well-defined standards and rules: the EU visibility guidelines for external actions. These guidelines are a part of the contractual obligations of implementing partners/Consultants and must therefore be carried out in the same way as any other contractual element.

On a regular basis, the Consultant will submit Progress Reports to the European Commission. The Consultant shall pay particular attention to the confidentiality of the data.

Other deliverables dedicated to visibility may include:

- An inception press release at the start-up of the project;
- A final press release to be provided with the project final report;
- A final presentation meeting for the dissemination of the project results organised by the Consultant.

Other actions to disseminate results or increase the visibility of the EU action may be implemented in parallel to the present projects.

Project	Country	Title	Amount (€)	Tender	Joint Management	Planning
CIS3.01/12	Armenia, Ukraine	Support to the Armenian and Ukrainian Regulatory Authorities	3,000,000	1 contract		Fianacial Agreement with Beneficiary country
BR.3.01/12	Brazil	Support to the Nuclear Safety Regulator of Brazil	2,000,000	1 contract		Fianacial Agreement with Beneficiary country
MEX3.01/12	Mexico	Support to Mexico in the implementation of the "stress test" and severe accident for Nuclear Power Plants according to EU experience	2,500,000	1 contract		Fianacial Agreement with Beneficiary country
CSF2012	Ukraine	European Union contribution to the Chernobyl Shelter Fund	35,300,000		1 contribution agreement	2012
IQ.4.01/12	Iraq	Equipment of a Radiochemical Laboratory and Establishment of a Mobile Radiochemical Laboratory	4,000,000	1 supply + 1 service contracts		Fianacial Agreement with Beneficiary country
KG.4.01/12	Kyrgyzstan	Integrated Environmental Impact Assessment (EIA) and Feasibility Study (FS) for the management and remediation of the Shekaftar uranium mining legacy site in Kyrgyzstan	1,500,000	1 contract		Fianacial Agreement with Beneficiary country
MY3.01/12	Malaysia	Enhancing the capacity and effectiveness of the regulatory body of Malaysia and developing its national waste management strategy	2,000,000	1 contract		Fianacial Agreement with Beneficiary country
MC3.01/12	Multi-country (IAEA)	Cooperation with the International Atomic Energy Agency's Department of Technical Cooperation and Department of Nuclear Safety and Security - Division of Nuclear Installation Safety	9,260,000		1 contribution agreement	2012
MN3.01/12	Mongolia	Regulatory regime for nuclear energy, enhancing radiation safety and nuclear safeguards in Mongolia	3,000,000	2 service contracts		Fianacial Agreement with Beneficiary country
U4.01/12	Ukraine	Infrastructure improvement for radioactive waste management, remediation of contaminated sites and decommissioning in Ukraine	9,500,000	1 contract + 1 grant (400 k€) + 1 service contract		Fianacial Agreement with Beneficiary country
U1.05/12	Ukraine	Cooperative safety programme to enhance safety and endurance of NNEGC Energoatom's nuclear power plants in case of extreme external impacts	3,000,000	1 contract		Fianacial Agreement with Beneficiary country
Global Allocation	Global Allocation	Accompanying measures 2012 for the INSC management	995,700	Service and framework contracts		2013
TOTAL			76,055,700			