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**REPORT FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE  
COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE  
COMMITTEE OF THE REGIONS**

**on the implementation of the**

**Instrument for Nuclear Safety Cooperation**

**Second Report - Action Programmes for 2010 and 2011**

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## **Introduction**

All projects funded by the Instrument for Nuclear Safety Cooperation<sup>1</sup> (INSC) were presented to the INSC Committee for opinion as part of the respective Annual Action Programmes (AAP). The projects were reviewed and discussed with the Committee, then revised in accordance with the Committee's comments and re-submitted by the Commission, as appropriate. Each AAP received a favourable opinion from the INSC Committee on the second submission.

AAP 2010 and AAP 2011 were presented in two parts. Part I concerned projects of operational nature and/or projects which may be implemented without a Financing Agreement with the beneficiary country, whereas Part II concerned projects of a more technical nature for which the implementation required the beneficiary country to enter into a Financing Agreement with the European Commission.

This accompanying document provides information on projects under AAP 2010 and AAP 2011. Their status of implementation by mid-2012 is presented in table 4 (AAP 2010) and table 5 (AAP 2011). Table 6 summarises the countries' allocations and contracting status by mid-2012; table 7 provides a summary of the implementation of the INSC AAP 2010 and 2011 programme by sector.

It also reports on the status of implementation of relevant projects of previous AAPs, namely AAP 2007, 2008 and 2009 (tables 1, 2 and 3).

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<sup>1</sup> Council Regulation (EURATOM) No 300/2007 of 19 February 2007, OJ L 81 of 22 March 2007, p.1.

# **1. IMPLEMENTATION OF THE PROGRAMME BY PARTNER COUNTRY (AAPs 2007 – 2011)**

## **1.1 Countries of the former Soviet Union**

### *1.1.1 Armenia*

There were cooperation projects with Armenia under each AAP from 2007 until 2011. The two projects accepted in 2007 (€7.2 million) started to be implemented in late 2008. Contracting for the two projects under AAP 2008 (€6 million) was almost complete by the time of writing. The three projects under AAP 2009 (€1 million), as well as the two projects under 2010 (€3.4 million) were in course of contracting. The cooperation with Armenia in 2011 (two projects, €1.8 million) focused on the implementation of the comprehensive risk and safety assessment (“Stress Tests”) of the Medzamor Nuclear Power Plant (NPP).

#### **The Armenian NPP at Medzamor (ANPP)**

The Armenian NPP at Medzamor (ANPP) is similar to the WWER-440/230 reactor of the so called ‘first generation’ which cannot be upgraded under reasonable economic conditions to current safety standards due to its specific design. The EU has a firm position that it should be shut down as soon as possible. However, due to the lack of replacement electricity generation capacity to meet the country’s needs, it will continue operating for several more years. A Joint Donors Working Group was set up in 2005, at the initiative of the IAEA, to agree on priorities and provide funding for urgent nuclear safety improvements (IAEA Category II to IV safety issues) while the plant remains in operation. The European Commission, representatives of Armenia, UK, USA, and the Czech Republic actively take part in this Group. The Russian Federation joined the group in 2008 with a donation of about 10 Million USD.

Under AAP 2008, the EU provided support to ANPP to implement four Nuclear Safety projects aiming at the improvement of the radiation protection of the NPP personnel, enhancing the main control room habitability; installing a remote shutdown panel equipped with a post-accident monitoring system and to upgrade the emergency core cooling system equipment in order to ensure its operation in long term cooling mode. The last project aiming at upgrading the emergency core cooling system was due to be contracted in 2012. The overall budget of the AAP 2008 for ANPP added up to €5.5 million. So far, €4.5 million of the specific projects have been contracted.

Under AAP 2009, the EU allocated €7.5 million for Medzamor projects: Enhancement of the main control room operators training, enhancement of maintenance practices; development of the decommissioning concept and the licensing documents for the plant; implementation of a pilot decommissioning project and enhancement of the reactor confinement spray system. The project on the “Enhancement of the main control room operators training” started in 2011.

Under AAP 2010, the EU allocated €2.4 million to continue for a further three years the On-Site Assistance (OSA) to ANPP. Besides the assistance in the implementation of the safety improvement projects defined by the IAEA, the OSA team assured the transfer of operational safety culture to the ANPP operator.

### **Support for the Armenian Nuclear Regulatory Authority (ANRA)**

The project financed under AAP 2007 supporting the Nuclear Safety Authority of Armenia, amounting to €8. Million, has been concluded in 2010.

Under AAP 2009, the EU allocated €2 million to enhance the safety assessment capabilities of ANRA for the licensing of Medzamor 2 safety improvements identified by the IAEA and decommissioning activities.

Under AAP 2010, the EU allocated a further €2 million to Regulatory Assistance projects, aimed at transferring EU regulatory methodologies and practices in the fields of emergency preparedness, preparation and enforcement of regulations, decommissioning, licensing of on-site assistance projects and inspections.

The situation of the Regulator (ANRA) has improved with increased staff, improved remuneration for staff and direct reporting to the government. Support for the management of ANRA was provided by on-site experts.

### **Safeguards**

Assistance for the enhancement of the nuclear material accountancy at the Medzamor NPP was carried out under an AAP 2008 project (€0.5 million). It provided for the supply of monitoring equipment defined under previous service and study contracts.

### **Waste management and decommissioning**

A project for the development of a national waste management strategy in Armenia was included in AAP 2009 (€1.5 million). This project was part of Armenia's holistic management approach for the radioactive waste at country level, including the waste generated by the shutdown unit and ultimate decommissioning of the ANPP. Industrial safety improvement projects and assistance in the revision and completion of the regulatory licensing plan for decommissioning of the ANPP were also considered. The project is due to be contracted in 2013.

### **Stress tests**

The Armenian Government accepted to participate in the “comprehensive risk and safety assessment exercise” (“stress tests”) launched by the EU, and joined by some neighbour countries. EU support was provided to Armenia by the European Commission to this end under AAP 2011 (two projects for a total amount of €1.8 million). In the first project, the Armenian operator will receive EU expert support in carrying out the safety assessment of the plant. In the second project, EU nuclear regulatory experts will assist ANRA in the review of the self-assessment report.

### *1.1.2 Belarus*

Assistance and Technical Support to the Regulatory Authority of Belarus (GOSATOMNADZOR) was included in AAPs 2008 and 2009. The AAP 2008 project covered two major items: (i) radiation protection and emergency preparedness (€0.9 million) and (ii) support to the nuclear regulator (€1.3 million). The project of AAP 2009 was intended to further strengthen the regulator in its capacity to assess Safety Assessment Reports, regulatory reviews of the PSA, Environmental Impact Assessments, as well as to use accident analysis codes. Since AAP 2009, no new projects were programmed in this country.

Belarus signed an agreement with the Russian Federation to build two new VVER 1000 reactors, due for completion in 2016 and 2018 (the completion dates were later revised to 2018 and 2020). The INSC project to support the Regulator represents a new phase of the transfer of European regulatory methodology and practices. The AAP2008 project started at the end of March 2011 with a planned duration of 30 months. The implementation of the project activities are currently ahead of the schedule.

The project is aimed at enhancing the skills and effectiveness of the Regulatory Body as a whole, to improve the legal and procedural base for a competent and efficient regulatory body on the basis of transferred European safety principles and practices. Its wider objective is to continue the support and strengthening of the national nuclear safety and radiation protection regulatory system in Belarus. The project will also assist in the development of a legislative framework in the field of nuclear safety and provide licensing support. It shall further enable the training of the personnel of the regulatory authority and of educational institutions.

### *1.1.3 Georgia*

Two AAP 2008 (€1.8 million) projects were aimed at radioactive waste disposal and a temporary storage facility, in cooperation with both the operators of facilities using radioactive materials and the nuclear regulator. However, the Commission expressed concerns with the Nuclear and Radiation Safety Department (NRD) of the Ministry of Energy and Natural Resources understaffing, which might hinder the implementation and the sustainability of EU projects. Under AAP 2009, the Commission continued to provide EU support the operators in the preparation of Safety Assessment Reports for radioactive waste disposal and interim storage sites (€0.5 million).

Upon request of the NRD, the 2008 project for support to the nuclear regulator was cancelled. No new projects have been programmed for Georgia since AAP 2009, except for a multi-country project to enhance national and regional preparedness and response to national incidents and emergencies. This project included also Armenia, Belarus, Egypt, Jordan and Ukraine (€60.000, see below). No further cooperation with the nuclear regulator is foreseen for the time being.

#### *1.1.4 Kazakhstan*

Kazakhstan was one of the priority targets under TACIS. However, no cooperation projects were initiated so far under the INSC. Nuclear safety cooperation has been very limited in recent years as major projects were completed.

#### *1.1.5 Russian Federation*

Between 1991 and 2006, more than €500 million were allocated to nuclear safety projects in the Russian Federation under the TACIS programme. Since 2007, the EU's nuclear safety cooperation activities have continued under the INSC, but at a limited scale. Some Russian partner organisations were willing to continue nuclear safety cooperation under INSC, and new projects were agreed to be included under AAP 2007. However, the Russian State Atomic Energy Corporation ROSATOM did not sign the Financing Agreement for AAP 2007. As a consequence €28 million were decommitted and could be no longer user for nuclear safety projects. To avoid a similar situation in 2008, the budget foreseen for Russian Federation under AAP 2008 was reallocated to other countries. Since then, only funds for the continuation of on-going projects initiated under TACIS were approved, these included On Site Assistance (OSA) to Novovoronezh, Smolensk and Beloyarsk NPPs. The NPP projects are either finished or expected to be concluded in 2012.

On the basis of Art. 9 of the INSC Regulation, which provides for support measures, a small implementation support organisation continues to be operational in Moscow, where it was established in December 1997 under the TACIS programme. The contract for the Joint Management Unit (JMU) was renewed by the end of 2011 for a further 2 years period (until 17/11/2013), though scaled down substantially. The JMU was tasked to facilitate the project management cycle of the Nuclear Safety programme in the Russian Federation. The Results Oriented Monitoring Programme in September 2010<sup>2</sup> graded the present JMU project higher than "good".

The Commission will continue to seek ways for effective and mutually satisfactory cooperation in the field of nuclear safety with the Russian Federation on a partnership basis..

#### *1.1.6 Ukraine*

The general objective of cooperation with Ukraine on nuclear safety is the transfer of EU nuclear safety practices to the NPP operator, to the nuclear regulator and its Technical Support Organisation, to the authorities and organisations in charge of the management of radioactive waste and those responsible for the management of the Chernobyl exclusion zone.

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<sup>2</sup> Monitoring Report MR-131904.01 dated 24/09/2010

## **Support to the NPP operator**

On-Site Assistance (OSA) was re-directed towards 'soft' projects (without the supply of equipment), which were first implemented in pilot NPPs and later replicated on other plants. Projects were defined in a Joint Working Group representing all Ukrainian NPPs and NNEGC ENERGOATOM head offices. Projects supporting the Ukrainian operator were included in the AAPs from 2007 to 2010 amounting to some €44 million (no new project was included in 2011).

The major project concerned the completion of the National Training Centre at Zaporozhye NPP. Other projects covered maintenance and operational safety directly related to the evaluation of the safety of the Ukrainian NPPs performed by the IAEA (see below) and the implementation of Severe Accident Management Guidelines. A project of AAP2009 to implement the RODOS system (Real-time Online Decision System for nuclear emergency management) at ENERGOATOM is scheduled to start in autumn 2012.

## **Radioactive waste management activities**

The overall objective of the cooperation with Ukraine in the domain of radioactive waste management is to improve safety and cost-effectiveness in the management of all types of radioactive waste, while minimizing the generation of waste and ensuring its safe disposal.

In 2008, a Task Force for Waste Management was established to prepare and support the implementation of a co-ordinated programme for the safe management of radioactive waste in the country. The EU provides assistance to the work of this task force and to the technical implementation of on-going radioactive waste management projects. The Joint Support Office (JSO) also provides secretariat and technical assistance to the task force. From AAP 2008 to 2010, up to €19.5 million were allocated to radioactive waste management projects in Ukraine. All projects foreseen under AAP 2008 and the majority of those under AAP 2009 were contracted.

## **Support for the State Nuclear Regulatory Inspectorate of Ukraine (SNRIU)<sup>3</sup>**

Direct institutional support for the development of the capabilities of the nuclear regulator and its Technical Support Organisation (TSO), started under TACIS and continued under the INSC. The support has been directed towards the licensing activities in different Chernobyl NPP radioactive waste facilities, waste treatment complexes at Rivne and Zaporozhye NPPs, and operational and maintenance projects for NNEGC ENERGOATOM (EA) NPPs using the “2+2” approach<sup>4</sup>. In total, €4.5 million were allocated to SNRIU and its TSO under AAP 2010 and 2011.

Since 2011, the RODOS system is being implemented for SNRIU. Under this project, the Real-time Online Decision System for nuclear emergency management (RODOS)

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<sup>3</sup>Formerly the State Nuclear Regulatory Committee of Ukraine (SNRCU)

<sup>4</sup>The 2 +2 approach involves EU support to the operator (industrial activity) plus EU support to the regulator (regulatory oversight activity) running simultaneously.

will be implemented at SNRIU's Information and Emergency Centre (IEC). This project is closely linked to the implementation of the RODOS system at ENERGOATOM, to start in autumn 2012.

### **Memorandum of Understanding (MoU) on Energy**

A - non legally binding - Memorandum of Understanding (MoU) on Energy between the EU and Ukraine was signed in December 2005<sup>5</sup>. The MoU envisaged, in the context of the EU-Ukraine Action Plan under the European Neighbourhood Policy, a joint strategy towards the progressive integration of the Ukrainian energy market within the South-East Europe Energy Community. The MoU included four road maps covering specific areas, notably nuclear safety.

In the context of the MoU, the Sides intended to conduct a safety evaluation of Ukrainian NPP and regulatory oversight (see below) in which Ukrainian and European Commission experts would be involved alongside external experts. The overall assessment was intended to verify the compliance with international nuclear safety standards and requirements, on the basis of the work carried out so far and scheduled for the future in order to identify the need for any additional actions, including financial aspects. Future EU technical assistance might be considered in the context of the possibilities that would be offered by the financial instruments in order to support the implementation of the on-going NPP upgrading programmes.

### **The Joint Ukraine - European Commission – IAEA evaluation**

The European Commission-IAEA-Ukraine Project ‘Safety Evaluation of Ukrainian Nuclear Power Plants’ was launched in November 2007 (AAP 2007), in the frame of the Memorandum of Understanding on cooperation in the field of nuclear energy and its Road Map for Nuclear Safety (see also 2.1). The evaluation covered the areas of design safety, operational safety, waste management and decommissioning, and regulatory issues.

The assessment was aimed at verifying, specifically, the compliance of nuclear safety in the Ukraine with current IAEA Safety Standards (Requirements), taking into account the improvements that were carried out so far or scheduled to be implemented under the ongoing Ukrainian safety upgrading programs. The possible need for additional nuclear and radiation safety improvements were identified as appropriate.

International experts concluded that the Ukraine generally complied with most of the IAEA Safety Requirements in the areas of nuclear power plant design and operation, radioactive waste management, decommissioning and regulatory oversight. All project objectives were achieved and the project ran on schedule, within estimated budget and with good interaction among all stakeholders. The works were completed in early 2010 and the final report was handed over to the Ukrainian Authorities by IAEA Deputy Director General in June 2010. The total cost of the evaluation, including INSC and IAEA contributions, amounted to €3.5 million.

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<sup>5</sup> MoU on co-operation in the field of energy between the EU and Ukraine, [http://ec.europa.eu/energy/international/bilateral\\_cooperation/doc/ukraine/2005\\_12\\_01\\_ukraine\\_mou.pdf](http://ec.europa.eu/energy/international/bilateral_cooperation/doc/ukraine/2005_12_01_ukraine_mou.pdf)

## **The National NPP Modernisation Programme**

Except for the three latest reactors<sup>6</sup>, all other currently operating units in Ukraine are more than twenty years old. In order to comply with current international nuclear safety standards and Ukraine's own requirements, ENERGOATOM developed the 'Complex Consolidated Modernisation Program' (the so called 'Upgrade Package'). This Programme addresses, inter alia, the findings of the above joint evaluation.

The cost of the 'Upgrade Package' was estimated at some €1.4 billion, it includes also a component for improving radioactive waste treatment safety at Ukrainian NPPs. The Programme started being implemented by ENERGOATOM but, to complete it within a reasonable time frame, Ukraine asked for substantial EURATOM and EBRD loans which are currently being negotiated.

Assistance to the Nuclear Regulator for the modernization and upgrading programmes of the Ukrainian NPPs started being provided under TACIS and continued under the INSC.

## **National Training Centre**

To improve the safe management and safe maintenance of the Ukrainian NPPs, a major project was launched under AAP 2007 to complete the National Training Centre for NNEGC Energoatom personnel, located in the vicinity of the Zaporozhye NPP. The EU contribution to this project amounts to €4 million, representing about 1/3 of the cost, the other 2/3 being financed by Ukraine.

The objective of the National Training Centre was to establish a centre of excellence in Ukraine providing for the training of NNEGC Energoatom maintenance and management personnel. It is currently in the implementation phase.

The first contract for this project, which was signed in August 2009 (Lot A - €5.7 million), included the review and study of best international practices in maintenance management training, training needs analysis, development and delivery of training programs and materials, training of trainers and implementation of pilot training courses, and the development of technical specifications for equipment supply (Lots B and C).

Tender procedures were launched, as planned, in 2011. Six contracts were signed in December 2011 for a total amount of about €7.3 million, for the supply of general (off the shelf) and special technical training tools (hardware and software).

The opening of the Training Centre is currently scheduled for the second half of 2013.

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<sup>6</sup> Zaporozhye-6 started operation in 1995 and Khmelnytski-2 and Rovno 4 in 2004.

### *1.1.7 Kyrgyzstan, Tajikistan and Uzbekistan*

A comprehensive waste management project addressing uranium legacy sites in Uzbekistan was adopted under AAP 2010 with a budget of €1.5 million. The project will develop environmental and safety assessments and feasibility study for the remediation works at Charkesar and Yangiabad legacy sites. Similar projects for legacy sites remediation in Kyrgyzstan and Tajikistan were adopted under AAP 2011 for a total cost of €3 million.

## **1.2 European Neighbourhood (South)**

### *1.2.1 Egypt*

Following discussions on Egypt's nuclear safety situation and needs, a first cooperation project on nuclear safety was programmed in 2008, started in 2009 and was completed in 2011. Its main objective was the creation of an efficient nuclear regulatory infrastructure, including the establishment of the new Nuclear Regulatory Authority (NRA). A second project was programme under AAP 2010. Following the political events in Egypt, the establishment of the NRA was postponed to 2012.

The Strategic Plan, Action Plan and Cooperation Plan for the Regulatory Authority were established by an interim organisation and may have to be revised. The follow-up of the cooperation with the Egyptian Regulator is expected to resume after the evaluation of the results of the present project, provided that the evolution of the political situation allows for it.

### *1.2.2 Iraq*

The country has started a considerable effort for decommissioning its former nuclear facilities, and in particular the main site located at Al-Tuwaitha, 18 km south from Baghdad.

Since 2005, the IAEA coordinates the international support for the Iraq Decommissioning Programme aimed at ensuring the use of the best international experience. Several governmental authorities and relevant national organisations have provided technical expertise, supporting visits to the respective nuclear sites and facilities and training for Iraqi staff in order to help build decommissioning and regulatory capability.

Since 2009, the EU has supported the Iraq Decommissioning Programme through a dedicated capacity building effort in the framework of the Instrument for Stability (IfS). This project aims 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 for the above IfS activities is about €3 million.

In 2011 the Commission decided to provide further EU decommissioning support to Iraq through the INSC. A project for design of a Low and Intermediate Level Waste (LILW) disposal facility was approved under AAP 2011 (€2 million). It will provide

disposal capacity for all radioactive waste generated during the Iraq Decommissioning Programme implementation. In the beginning of 2012, the financial agreement for this project was sent to Iraqi government and is due to be signed by the end of the year.

Other projects are under consideration for Iraq, including the completion of a radio-analytical laboratory (design presently on-going in cooperation with the US), establishment of a mobile radiochemical laboratory, strengthening the Iraqi regulatory authority and the safe and secure handling and management of orphan radioactive sources.

### *1.2.2 Jordan*

A workshop and missions of EU experts, including representatives from the Commission and regulatory authorities, took place in 2008. The first cooperation project with the Jordan Nuclear Regulatory Commission (JNRC) was approved under AAP 2008 and started in March 2010 (€1 million). Its objective was to develop the managerial and technical capabilities of JNRC for establishing an independent nuclear regulatory authority. The project was completed after 24 months in March 2012, according to schedule. During the project implementation a Strategic, Action and Cooperation Plan, reflecting JNRC's needs, was drawn up by JNRC with the cooperation of EU experts. The outcome of the project was highly appreciated by JNRC. The implementation of a follow up project, approved under AAP 2010 (€1.2 million), has started in July 2012.

### *1.2.3 Morocco*

A workshop and missions of EU experts, including representatives from the Commission and regulatory authorities, took place in 2008 and 2009. A first project was defined with the Moroccan Nuclear Safety and Radioprotection Authorities covering the establishment of an action plan for cooperation on capacity building of the Nuclear Regulatory Authority. The project included a review of the current situation, support for the establishment of an independent regulatory body based on the existing infrastructure; assistance in the development of the regulatory framework, strengthening and enhancing the professional knowledge of the regulatory body and its TSO and public information. The project was approved under AAP 2009 (€1 million), its implementation started at the end of 2011.

## **1.3 South East Asia**

The first workshop to explore the possibilities for nuclear safety cooperation with the countries in the region took place in Bangkok in July 2008. It counted with the participation of representatives from Cambodia, Indonesia, Malaysia, the Philippines, Singapore, Thailand and Vietnam. EU experts and Commission representatives gathered information on the respective nuclear programmes, the nuclear safety needs and explained the possibilities for cooperation under the INSC programme. Meetings and bilateral discussions with the participants served also to identify interlocutors in the countries interested in cooperating with the EU.

Further to the workshop, Vietnam and the Philippines were identified as priorities for cooperation. Fruitful contacts were also initiated with Malaysia and Indonesia, which were followed up with appropriate missions. Thailand, at the time, did not show interest in cooperating with the EU on nuclear safety, it changed its position later and contacts were resumed in 2012.

Cooperation projects were included in the AAP 2009 for Vietnam (€2 million) and the Philippines (€1.5 million). Both projects focused on developing the legal framework and managerial or technical capabilities of the respective regulatory bodies and their TSOs and are now starting (Philippines: The contract will be signed soon, the kick-off meeting is planned for January 2012).

Cooperation on emergency preparedness and response had been identified as an issue of common interest for the region. Its relevance rose considerably after the Fukushima accident in 2011 and is currently under consideration for inclusion under future AAPs.

## **1.4 Latin America**

### *1.4.1 Brazil*

Further to a request from the Brazilian nuclear Regulator (CNEN), a mission to Brazil took place in 2009. During this mission contacts were also made with the Brazilian nuclear operator Eletronuclear. A project with the regulator and another three with the nuclear operator were included under AAP 2009 and started during 2011.

The cooperation project with CNEN (€2 million) started with the development of an action plan for capacity building. This was intended to help CNEN to identify its needs for the following up of technical tasks such as Probabilistic Safety Assessment, Deterministic Safety Assessment and the study of reported events from Angra 2. The project provided also for training of new personnel. Several training workshops already took place.

The project with Eletronuclear (€3 million) included support for the development of severe accident management guidelines, a study concerning the improvement of Instrumentation and Control Systems at Angra 1 and human factors engineering. All three projects have started. A further project had been planned for 2010 with Electronuclear, but the Brazilian authorities failed to sign in time the Financial Agreement. The corresponding budget had to be decommitted.

### *1.4.2 Argentina*

Two missions to Argentina took place in 2009 and 2010, respectively. However, no sufficiently mature projects could be defined which would allow nuclear safety cooperation to start in the short term. Discussions are on-going to define a format of cooperation which may address the Argentinian needs.

### *1.4.3 Mexico*

Contacts with Mexico were initiated at the end of 2009 and were followed by exploratory and expert missions in 2010.

Two projects were approved under AAP 2010. The first project was for nuclear safety cooperation with the regulatory authority of Mexico, the National Commission for Nuclear Safety and Safeguards (CNSNS) (€1.8 million). The project envisaged to develop an action plan for capacity building and training, help to improve the quality system of the regulator and enhance the integral safety assessment approach of CNSNS (deterministic and probabilistic).

A second project was also approved under AAP 2010 concerning waste management (€1.5 million). It had as objective the development of a policy and strategy for the management of spent nuclear fuel and management of radioactive waste in Mexico, including provisions for its safe interim storage. It supported the National Institute for Nuclear Research (ININ) and the Ministry of Energy (SENER) in these areas.

The total cost of the projects for Mexico under AAP 2010 was some €3.3 million. A financing agreement between the EU and Mexico was signed on July 2011 for the two projects. The tender procedure ended in 2011 and the respective contracts were signed. Both projects started in April 2012. New projects with CNSNS would follow under AAP 2012.

## **1.5 China**

Cooperation with China started under AAP 2010. A project initially submitted by the Chinese Authorities to the IAEA was transferred by the Agency to the Commission for implementation under the INSC. It concerned the upgrade of the regulatory framework for nuclear safety and radioactive waste management. The project provided for assistance to the following institutes and centres: Beijing Nuclear and Radiation Safety Centre (NSC/NNSA); Research Institute of Nuclear power Operations (RINPO). Nuclear NDT Centre (NNC/RINPO); Institute for Standardisation of Nuclear Industry (ISNI), Beijing Research Institute of Uranium Geology (BRIUG ), China Institute of Atomic Energy (CIAE), College of Nuclear Science and Technology (CNST), Harbin Engineering University (HEU). The project was foreseen to have duration of 36 months and a total cost of €2.0 million. The topics to be covered included:

- Enhancement of the physical infrastructure, statutory framework and human capacities;
- Upgrading of the training and teaching centres and help in harmonizing training programmes in nuclear safety and radioactive waste management;
- Upgrading of the nuclear safety and radioactive waste management review and assessment capabilities so as to bring the services, practice and management culture in line with best international practices;

- Establishing a sustainable education and training capability, and
- Support and facilitate the dissemination of information on the recent national and international developments in the areas of safety culture monitoring processes and safety culture assessment approaches.

Under AAP 2011 three additional projects were planned as follows.

The first, with the Chinese National Nuclear Regulatory Authority and its Technical Support Organisations, had the overall objective of enhancing and strengthening the nuclear safety regulatory regime in China in accordance with international standards and best practice. The estimated cost was €2.0 million and the duration up to 36 months.

The second project had the objectives of enhancing the capabilities of China to improve preparedness for and the management of radiological and nuclear emergencies and to develop severe accident management guidelines in accordance with international standards and best practice. It concerned a series of Chinese organisations. The Chinese Atomic Energy Authority (CAEA) would be responsible for the general coordination of this action; also involved were: the National Nuclear Emergency Response Office (NNERO), the China Institute for Radiation Protection (CIRP), the Chinese National Nuclear Emergency Response Technical Assistance Centre, the National Nuclear Emergency Radiological Monitoring Assistance Centre, the National Nuclear Emergency Radiological Protection Assistance Centre, the National Nuclear Emergency Airborne Monitoring Assistance Centre, the National Nuclear Emergency Medicine Treatment Assistance Centre, the Chinese Nuclear Power Technology Research Institute (CNPRI), the Nuclear Power Institute of China, the Chinese Institute of Atomic Energy and the Tsinghua University. The estimated cost for the project was €1.5 million and the duration up to 36 months

The third project concerned the elaboration of a national policy and strategy for the management of spent nuclear fuel and radioactive waste (RW). The policy and strategy would be based on the country's current practices, facilities and legislation and a technical and economic analysis of different options for the interim storage and long term disposal of radioactive waste. Cooperation focusses on issues that were not yet sufficiently developed in the country's current practices and/or strategies. The estimated cost for the project was €1.5 million, the duration up to 36 months.

## 1.6 Regional projects

### 1.6.1 Armenia-Ukraine

An AAP 2007 project to provide policy and technical advice related to the cooperation with Armenian and Ukrainian nuclear regulatory authorities and their TSOs to strengthen their managerial and technical capabilities has been successfully completed in November 2011 (€1 million).

### 1.6.2 Armenia-Belarus-Georgia-Ukraine

In addition to the individual country projects, a regional project involving Ukraine, Belarus, Georgia and Armenia was set up under AAP 2008, which is being implemented by the IAEA. The objective is to improve Emergency Preparedness and Response (EPR) in the three countries. The tasks include: a detailed assessment of the national needs in the EPR area based on previous analysis of the situation through Emergency Preparedness Review (EPREV) missions and self-assessments; the development of country-specific Action Plans; the development of the countries' specific operational tools, if required; and sub-regional and national training. The total cost of the project amounts to €2.1 million (€1.1 provided by the IAEA and €1 million by the INSC). The project is in its implementation phase.

### 1.6.3 Central Asia

A regional project with Uzbekistan, Kyrgyzstan, Tajikistan and Mongolia was adopted under AAP 2010. The project objectives are to establish a legislative and regulatory framework for the remediation of uranium mining legacy sites in Central Asia including the establishment of a regional watershed monitoring system and capacity building in analytical techniques, training and education and information exchange. The total project budget is €2.5 million.

### 1.6.4 Safeguards in Argentina and Brazil

ABACC<sup>7</sup> is a regional safeguards organization created by the Bilateral Agreement between Argentina and Brazil of December 1991. ABACC is in charge of applying a full scope safeguards system in Brazil and Argentina. The overall objective of the INSC project is to strengthen safeguards and enhancing nuclear material accountancy and control in relevant nuclear fuel cycle facilities.

The project comprises two tasks. Task 1 - the implementation of a full 3D laser based system (3DLR) for application on Design Information Verification (DIV) in nuclear facilities inspected by ABACC/IAEA in the framework of the Quadripartite Agreement (INFCIRC 435). Task 2 – the implementation of ultrasonic sealing system for spent fuel stored in pools with difficult access for verification, in an On Load Pressurized Heavy Water Reactor (PHWR) inspected by ABACC/IAEA in the

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<sup>7</sup> ABACC is the Brazilian–Argentine Agency for Accounting and Control of Nuclear Materials. Agência Brasileiro-Argentina de Contabilidade e Controle de Materiais Nucleares in Portuguese, or Agencia Brasileño-Argentina de Contabilidad y Control de Materiales Nucleares in Spanish.

framework of the Quadripartite Agreement (INFCIRC 435). The total budget for the project is €2.0 million. The project is managed by the Commission via JRC Ispra.

### **1.7 Multi-country Training and Tutoring (T&T)**

Nuclear engineering and safety organizations need competent Human Resources to meet high level technical demands and the continuous flow of new information, which requires general, in depth and specific training. Tutoring is an indispensable element for the enhancement of the beneficiaries' capabilities. Tutoring offers the best possibilities for the transfer of knowledge; it has a "long term" character and develops an interpersonal cooperation and relation between all experts, "mentors" and "students".

Two projects on T&T were approved under AAP 2010 (€3.0 million) and 2011 (€3.0 million). The project for AAP 2010 was contracted in 2 lots. The partner countries candidatures for the programme and its content is analysed by the Commission on a regular basis. The first training took place in Garching/Munich, Germany, in June 2012.

## 2. INTERNATIONAL COOPERATION

### 2.1 Cooperation with the IAEA

The global reach of the INSC programme places great importance on establishing effective cooperation with other organisations concerned with the promotion of nuclear safety, notably the IAEA. The IAEA is implementing a number of multi-country projects with INSC support through contracting agreements with the Commission. In some cases projects are jointly managed with the Commission.

The cooperation with the IAEA includes the following projects, which are at varying stages of implementation.

- Joint Ukraine - European Commission – IAEA evaluation of the Ukrainian nuclear power plants (see 1.1.6 above) (AAP 2007) was completed by the end of 2009. The respective final report published in early 2010<sup>8</sup> covered the fields of design safety, operational safety, waste management and regulatory issues. It confirmed compliance with most of the IAEA safety requirements in the four reviewed areas.
- Cooperation study with the IAEA on safety improvements in VVER type nuclear power plants in Ukraine (AAP 2007, 24 months, €2 million).
- National and regional off-site emergency preparedness in some non-EU countries (Armenia, Belarus, Egypt, Georgia, Jordan and Ukraine) (AAP 2008, 36 months €60.000). Implementation started in 2010.
- Contributions to IAEA Technical Cooperation (TC) and Nuclear Installations Safety (NIS) projects in Latin America, Africa/Pacific, Europa, INSC eligible countries, Asian Nuclear Safety Network (ANSN) countries, including, *inter alia*, Argentina, Brazil, Mexico, Uzbekistan, the Russian Federation, Ukraine and Armenia (AAP 2009, 36 months, €6.5 million).
- Contributions to IAEA TC and NIS projects in 48 countries in Europe, Asia, Africa and South America (AAP 2010, 36 months, €4 million).

All IAEA projects funded under AAP 2007-10 are in their implementation phase.

Cooperation with the IAEA under the INSC amounts to some €4 to 5 million per year, on average. AAP 2011 did not include IAEA projects, but AAP 2012 envisages further multi-country projects with the IAEA for nearly €10 million.

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<sup>8</sup> European Commission-IAEA-Ukraine Joint Project: "Safety Evaluation of Ukrainian Nuclear Power Plants, supporting the Implementation of the Roadmap for Nuclear Safety of the Memorandum of Understanding on Cooperation in the Field of Energy between the EU and Ukraine. Vienna, Austria, February 2010

## **2.2. Contributions to International Funds (Chernobyl)**

The major projects at the Chernobyl site are supported by two international funds: the Chernobyl Shelter Fund (CSF) and the Nuclear Safety Account (NSA) which are managed by the European Bank for Reconstruction and Development (EBRD) on behalf of the donors. The EU began contributing to both funds under the TACIS Nuclear Safety Programme and continued under the INSC.

### *2.2.1 Chernobyl Shelter Fund (CSF)*

The CSF was established to implement the Shelter Implementation Plan (SIP), which includes the construction of the New Safe Confinement (NSC). The stabilisation of the existing shelter of the Chernobyl unit 4 is completed. The preparation of the site for the assembly of the New Safe Confinement and the design the New Safe Confinement are presently approaching completion. Major orders were placed for the main crane and for structural steel, which is being delivered at the rate of some 1000 t/month. The assembly of the arch for the NSC started during the second quarter of 2012.

A Pledging Conference took Place in Kiev in April 2011, coinciding with the commemorations of the 25<sup>th</sup> anniversary of the Chernobyl accident. The Conference was highly successful in raising the €740 million<sup>9</sup> needed to complete the projects funded by the CSF (some €600 million) and the NSA (some €140 million). The Commission's pledge amounted to €122 million to both Funds, however the split has not yet been decided, for the time being it is assumed that it will be all for the CSF. The EU is the largest contributor to the fund.

The projects remain within the budget and schedule agreed by mid-2010. The completion of the NSC is scheduled for October 2015.

### *2.2.2 Nuclear Safety Account*

The Nuclear Safety Account (NSA) was set up in 1993 to finance nuclear safety projects in Central and Eastern Europe. Currently it finances only two Chernobyl projects: the Liquid Radioactive Treatment Plant (LRPT) and the Interim Spent Fuel Storage Facility (ISF-2). The responsibility for the completion of the LRPT was taken over by the Ukrainian side, the project is nearing completion. The completion of the ISF2 facility is scheduled for late 2015, but the delivery of storage canisters may continue for some time after that.

In July 2007, the Commission pledged €15 million in EU funding to cover the cost increases in the ISF-2 project. The relevant provisions were made under AAP 2009 Part 1 and the funds were transferred to the EBRD. By the end of 2009, the Commission contributions to the NSA under the TACIS and INSC programmes amounted to €36 million.

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<sup>9</sup> This was based on a complete review of the situation concerning the cost and schedule presented by the Bank and the Project Management Unit (PMU) in July 2010, which had been previously discussed with the Contact Group.

The total cost of the Chernobyl projects financed by the CSF and the NSA amount to some €2 billion. The Commission contribution on behalf of the EU, under the TACIS and INSC programmes, amount to some €400 million.

### *2.2.3 Auditing and corrective measures*

In 2008 the Court of Auditors (CoA) carried out an audit to assess how far the Commission had fulfilled its responsibilities concerning the establishment, monitoring and follow-up of EU financial contributions used by the EBRD to mitigate the consequences of the Chernobyl disaster and to make the site environmentally safe. The Court found that "*The Commission has constantly monitored the implementation of the EBRD managed activities and thereby the use of the Community funds as effectively as has been possible...*" however "*the quality and timing of the information obtained did thus not allow the Commission to have a concrete influence on the operations ex ante*".

In order to correct the situation, in October 2009, the Commission, the major donors (the members of the G8) and the EBRD agreed to create a G8 NSSG – EBRD Chernobyl Contact Group to ensure an efficient, more detailed and continuous exchange of information. The Group started working in December 2009 and met on a regular basis. A number of meetings were also called to deal with particular issues, like the cost and risk analysis which was the basis for the 2011 Pledge Conference, the preparation of the Pledging Conference, as well as institutional issues which may affect the projects (e.g. the contract for the Project Management Unit Consultant or the VAT exemption).

In order to further improve the monitoring of the implementation of the projects, the US, the Commission and other donors proposed the establishment of a Site Monitoring Consultant (SMC) which would follow the projects on a daily basis. The SMC would provide monthly reports to the EBRD and the Contact Group, including risk assessments, which would allow the donors to request corrective actions, as appropriate, in due time. The SMC would be funded mainly by the US and the EU (through the INSC), a special account would be created at the EBRD for the purpose.

### 3. IMPLEMENTATION BY ANNUAL ACTION PROGRAMME

**TABLE 1<sup>10</sup>**

**2007 Annual Action Programme –Parts I and II**

<i>Region/ Country/ Project Title</i>	<i>Duration</i>	<i>Amount (€)</i>	<i>Status (mid 2012)</i>
<b>Russian Federation</b>			
R1.03/07 - Continuation of On-Site Assistance Kalinin NPP <sup>11</sup>	36 months	1,500,000	Completed (31/12/2010)
R1.01/07 - Continuation of On-Site Assistance Kola NPP <sup>12</sup>	36 months	1,500,000	Completed (31/12/2011)
R1.09/07 - Sector Assistance to the Russian Nuclear Operator: Assistance to Kursk and Leningrad NPPs <sup>13</sup>	36 months	2,000,000	Project cancelled <sup>14</sup>
R1.10/07 - Sector Assistance to the Russian Nuclear Operator: Assistance to Balakovo, Volgodonsk and Bilibino NPPs	36 months	2,000,000	Project cancelled
R1.11/07 - Sector Assistance to the Russian Nuclear Operator: Safety Management in the Nuclear Power Plants of the Russian Federation	36 months	4,972,000	Project cancelled
R2.01/07 - Strength and residual life of VVER-1000 internals and upper blocks under long-term operation integrity and the operational safety of the NPPs	36 months	3,500,000	Project cancelled
R2.02/07 - Optimization of In-Service Inspection, non-destructive test and hydro tests of the VVER-1000 primary circuit components	36 months	2,000,000	Project cancelled
R2.03/07 - Improvement of stress analysis standards for plant pressure boundary components of VVER reactors	24 months	1,000,000	Project cancelled
R3.01/07 - Institutional and technical cooperation with Rostechнадзор and its TSOs to develop their capabilities on the basis of transferred Western European safety principles and practices	36 months	2,800,000	Project cancelled
R4.01/07 - Cooperation on Radioactive Waste, Decommissioning and Remediation activities with the Russian Federation	36 months	10,000,000	Project cancelled
<b>Subtotal Russian Federation</b>		<b>31,772,000</b>	
<b>Sub-total Russian Federation excluding cancelled projects</b>		<b>3,500,000</b>	
<b>ENP<sup>15</sup></b>			

<sup>10</sup> Table 1 includes also the projects for the Russian Federation which were initially approved by the INSC Committee but subsequently cancelled as the required Financing Agreement could not be concluded with Russia within the required timeframe.

<sup>11</sup> Included in AAP 2007 Part I

<sup>12</sup> Final date of implementation has been prolonged (final report and final invoice missing)

<sup>13</sup> Included in AAP 2007 Part II

<sup>14</sup> Most projects for the Russian Federation under AAP 2007 and 2008 were cancelled

<sup>15</sup> Countries covered by the European Neighbourhood Policy (ENP)

<b>Armenia</b>			
A1.01/07 - Safety Management in the Nuclear Power Plant of Armenia	36 months	6,400,000	Completed (07/08/2011, 15/08/2011, 28/04/2012)
A3.01/07 - Support to the Nuclear Safety authority of Armenia: institution building	24 months	800,000	Completed (28/11/2010)
<b>Ukraine</b>			
U1.04/07 - Continuation of On-Site Assistance Khmel'nitsky NPP	36 months	1,500,000	Completed (15/11/2011)
U1.02/07 - Continuation of On-Site Assistance South Ukraine NPP	36 months	1,500,000	Completed (05/07/2010)
Project on safety improvement in VVER Type NPPs (Study in co-operation with IAEA)	24 months	2,000,000	Completed (15/06/2011)
Chernobyl Shelter Fund	36 months	10,000,000	Paid
U1.05/07A - Safety Management in the Nuclear Power Plants of Ukraine "Completion of the National Maintenance and Management Training Centre for NNEGC Energoatom Personnel at Zaporozhye NPP	36 months	14,000,000	Implementation on-going
U2.01/07 - Sector assistance for the development of a strategy for the long-term Ukrainian safety management	36 months	2,500,000	Implementation on-going
U3.01/07 - Institutional and Technical cooperation with SNRCU to develop their capabilities on the basis of transferred European safety principles and practices	24 months	2,800,000	Implementation on-going
U4.02/07 - Additional Equipment for ICSRM Project in Chernobyl	18 months	1,500,000	Implementation on-going
U4.02/07A - Additional activities for the ICSRM project in Chernobyl – Providing support to licensing activities, including drafting and revision of related licensing documentation and supervision of the "hot" testing.	(Part of U4.02/07, see above)	(amounts to 400,000 being part of U4.02/07, see above)	Implementation on-going (started in 2009)
<b>Subtotal Ukraine</b>		<b>35,800,000</b>	
<b>MULTI-COUNTRY</b>			
REG.01/07 - Provision of policy and technical advice related to the cooperation with National regulatory Authorities and their TSOs for strengthening their managerial and technical capabilities	36 months	1,000,000	Completed (16/11/2011)
REG 02/07 - Children of Chernobyl: People to people exchange programmes for Chernobyl children and continued support in Ukraine and Belarus for health programmes to help the victims of the accident with the Chernobyl nuclear reactor	36 months	1,500,000	Implementation on-going
<b>TOTAL AAP 2007</b>		<b>76,772,000</b>	

**TABLE 2<sup>16</sup>****2008 Annual Action Programme –Parts I and II and Part II reallocation**

<i>Region/ Country/ Project Title</i>	<i>Duration</i>	<i>Amount (€)</i>	<i>Status (mid 2012)</i>
Accompanying measures 2008 for the management of INSC	Until 12/08	1,000,000	Completed
<b>Russian Federation</b>			
Management of INSC in Russia incl. R7.01/08 – JMU Moscow	36 months	3,500,000	Completed but renewed until 12/2013
R1.11/08 - Support to improved operational and maintenance procedures of Rosenergoatom NPPs <sup>17</sup>	36 months	6,500,000	Project cancelled
R3.01/08 - Institutional and technical cooperation with Rostekhnadzor and its TSOs to develop their capabilities on the basis of transferred Western European safety principles and practices	36 months	2,000,000	Project cancelled
R4.01/08 - Cooperation on Radioactive Waste, Decommissioning and Remediation activities with the Russian Federation	36 months	5,000,000	Project cancelled
<b>Subtotal Russian Federation</b>		<b>17,000,000</b>	
<b>Sub-total Russian Federation excluding cancelled projects</b>		<b>3,500,000</b>	
<b>ENP</b>			
<b>Armenia</b>			
A1.01/08 - Support to Nuclear Operator of Armenia - Armenian Nuclear Power Plant <sup>8</sup>	36 months	5,500,000	Implementation on-going
A5.01/08 - Nuclear Safeguards – Armenia	48 months	500,000	Implementation on-going
<b>Belarus</b>			
BY3.01/08 - Institutional and technical cooperation with GOSATOMNADZOR to develop its capabilities on the basis of transferred European safety principles and practices (service and supply)	30 months	Service 1,300,000 and supply 900,000	Implementation on-going (service), implementation to start (supply)
<b>Georgia</b>			
GE3.01/08 - Support to Nuclear Safety Authority (NRSS) of Georgia in the field of regulations, norms and radioactive waste management licensing activities	24 months	800,000	Project cancelled
GE4.01/08 - Survey and strategic assessment of Georgian radioactive waste disposal and interim storage sites	15 months	1,000,000	Implementation on-going

<sup>16</sup> Table 2 includes also the projects for the Russian Federation which were initially approved by the INSC Committee but subsequently cancelled as the required Financing Agreement could not be concluded with Russia within the required timeframe. The projects which were approved as part of the reallocation of the funds initially foreseen for Russian projects are also mentioned.

<sup>17</sup> Included in AAP 2008 Part II

<b>Ukraine</b>			
Chernobyl Shelter Fund (3rd instalment)	36 months	15,000,000	Paid
Management of INSC in Ukraine (JSO)	36 months	3,500,000	Completed but renewed until 12/2014
U1.05/08 - Support to improved operational, maintenance procedures and safety management at Energoatom NPPs	36 months	8,355,000	Implementation on-going
U3.01/08 - Cooperation with SNRCU for the licensing of radioactive waste management facilities and for the validation of soft on-site assistance (NPP level)	36 months	1,700,000	Implementation on-going
U3.02/08 - Support SNRCU to implement RODOS in the Information and Emergency Centre of Ukraine	24 months	500,000	Implementation on-going
U4.01/08: - Improvement of radioactive waste classification and management in Ukraine	36 months	8,000,000	Implementation on-going
U3.03/08 - Support to SNRCU in activities related to NPP safe operations of risk-informed approaches (operation and maintenance), integrated NPP safety oversight system, severe accident analysis and management, regulatory issues about reactor pressure vessel operations <sup>18</sup>	36 months	3,500,000	Implementation to start <sup>19</sup>
U3.04/08 - Support to SNRCU in the regulatory activity during commissioning of the radioactive waste processing facilities at Rivne NPP and Zaporozhye NPP	24 months	500,000	Implementation to start
U4.02/08 - Feasibility Study and Preliminary Design for a near-surface facility for the long-term storage of long-lived and high level radioactive waste at the "Vector" site, in the Chernobyl Exclusion Zone	36 months	2,000,000	Implementation on-going
Additional Community Contribution to the EBRD for the Chernobyl Shelter Fund	36 months	10,700,000	Paid
<b>Subtotal Ukraine</b>		<b>53,755,000</b>	
<b>Egypt</b>			
EG3.01/08 - Provision of assistance related to the first cooperation steps for developing and strengthening the capabilities of Egypt Atomic Energy Authority (EAEA)	24 months	1,000,000	Completed (18/02/2012)
<b>Jordan</b>			
JO3.01/08 - Provision of assistance related to the first cooperation steps for developing and strengthening the capabilities of Jordan Nuclear Regulatory Commission (JNRC)	24 months	1,000,000	Completed (03/2012)
<b>REGIONAL (Armenia and Russian Federation)</b>			
REG 5.01/08 – Nuclear Safeguards – Russian Federation and Armenia	48 months	3,700,000	Project cancelled
<b>MULTI-COUNTRY</b>			
MC2.01/08 - Enhancing national and regional preparedness for responding to radiation incidents and emergencies in some non-EU countries (IAEA)	36 months	1,000,000	Implementation on-going
<b>TOTAL AAP 2008</b>		<b>71,255,00</b>	

<sup>18</sup> Included in AAP 2008 Part II - modification

<sup>19</sup> "Implementation to start" = Contract to be signed

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**TABLE 3**

**2009 Annual Action Programme –Parts I and II**

<i>Region/ Country/ Project Title</i>	<i>Duration</i>	<i>Amount</i>	<i>Status (mid 2012)</i>
Technical support for the project cycle management of nuclear safety projects (JRC) <sup>20</sup>	36 months	2,500,000	Implementation on-going
Accompanying measures 2009 for the management of Nuclear Safety Instrument	36 months	1,000,00	Completed
<b>Russian Federation</b>			
Sector Assistance to the Russian Nuclear Operator: Assistance to Smolensk and Belyarsk NPPs	24 months	2,000,000	Completed (31/10/2011)
<b>ENP</b>			
<b>Armenia</b>			
A4.01/09 - Development of Radioactive Waste Management Strategy for Armenia	36 months	1,500,000	Implementation to start
A1.01/09 - Support to Nuclear Operator of Armenia - Armenian Nuclear Power Plant	36 months	7,500,000	Implementation on-going
A3.01/09 - Enhancement of the safety assessment capabilities of the Armenian Nuclear Regulatory Authority (ANRA) for licensing of Medzamor 2 safety improvements and of decommissioning activities (follow up of project AR/TS/06) <sup>1</sup>	36 months	2,000,000	Implementation to start
<b>Belarus</b>			
BY3.01/09 - Development of technical cooperation in nuclear safety in the field of assistance to Regulatory Authorities (Belarus)	30 months	2,200,000	Implementation to start
<b>Georgia</b>			
G4.01/09 - Support to the operators in the preparation of Safety Assessment Reports for Georgian radioactive waste disposal and interim storage sites	36 months	500,000	Implementation to start
<b>Ukraine</b>			
ChSF - Chernobyl Shelter Fund	36 months	9,700,000	Paid
Community Contribution to the EBRD for the Nuclear Safety Account (NSA)	36 months	15,000,000	Paid
U1.05/09 - Cooperative safety programme to enhance the cultural, procedural and technical capability and effectiveness of NNEGC and its NPP's <sup>21</sup>	36 months	8,800,000	Implementation of 2 of the 5 projects on-going
U4.01/09 - Support to the establishment of a national waste management organization and the improvement of the radioactive waste management infrastructure in Ukraine	36 months	5,000,000	Implementation on-going
<b>Subtotal Ukraine</b>		<b>38,500,000</b>	

<sup>20</sup> Included in AAP 2009 Part I

<sup>21</sup> Included in AAP 2009 Part II

<b>Morocco</b>			
MO3.01/09 - Provision of assistance related to the first cooperation steps for developing and strengthening the capabilities of Moroccan Nuclear Regulatory Authority and its TSO	36 months	1,000,000	Implementation on-going
<b>LATIN AMERICA</b>			
<b>Brazil</b>			
BR1.01/09 - Nuclear Safety Cooperation with the Nuclear operator of Brazil (Electronuclear)	36 months	3,000,000	Implementation on-going
BR3.01/09 - Nuclear Safety Cooperation with the Regulatory Authorities of Brazil (CNEN)	36 months	2,000,000	Implementation on-going
<b>SOUTH EAST ASIA</b>			
<b>Philippines</b>			
PH3.01/09 - Technical assistance for improving the legal framework for nuclear safety and strengthening the capabilities of the Regulatory Authority of the Philippines and its TSO	36 months	1,500,000	Implementation to start
<b>Vietnam</b>			
VN3.01/09 - Technical assistance for improving the legal framework for nuclear safety and strengthening the capabilities of the Regulatory Authority of Vietnam (VARANS) and its TSO	36 months	2,000,000	Implementation on-going
<b>MULTI-COUNTRY</b>			
MC.01/09 - Contributions to IAEA Technical Cooperation (TC) and Nuclear Installations Safety (NIS) projects in non EU countries (IAEA) (48 countries)	36 months	6,500,000 (A: 5,400,00 B: 1,100,000)	Implementation on-going
<b>TOTAL AAP 2009</b>		<b>73,700,000</b>	

**TABLE 4<sup>22</sup>****2010 Annual Action Programme –Parts I and II**

<i>Region/ Country/ Project Title</i>	<i>Duration</i>	<i>Amount</i>	<i>Status (mid 2012)</i>
Sector Assistance to the Russian Nuclear Operator: Assistance (OSA ) to Novovoronezh	36 months <sup>23</sup>	1,000,000	Implementation on-going
Cooperation with the Ukrainian Nuclear Operator: Extension of On-Site Assistance (OSA) to Rivne and Zaporozhye Nuclear Power Plants	36 months	3,000,000	Implementation on-going
Support to Nuclear Operator of Armenia – Extension of On-Site Assistance (OSA) to Armenia Nuclear Power Plant	36 months	2,400,000	Implementation on-going
Accompanying measures 2010 for the management of Nuclear Safety Instrument – Global Allocation	36 months	1,300,000	Completed
<b>Subtotal 2010 Part I</b>		<b>7,700,000</b>	
<b>ENP</b>			
<b>Armenia</b>			
Armenia - Institutional building of Armenian Nuclear Regulatory Authority (ANRA) (Follow-up of project AR/RA/04)	36 months	1,000,000	Implementation to start
<b>Ukraine</b>			
Ukraine - U3.01/10 Assistance to State Nuclear Regulatory Committee of Ukraine (SNRCU) in regulation of priority issues on safe radioactive waste management and harmonization of regulatory requirements on nuclear and radiation safety with reference levels of the Western European Nuclear Regulators Association (WENRA)	36 months	2,500,000	Implementation to start
Ukraine - U1.05/10 Cooperative safety programme to enhance the Operational Effectiveness, Safety Performance and Human Resources' effectiveness of NNEGC Energoatom and its nuclear power plants	36 months	9,000,000	Implementation to start
Ukraine - U4.01/10 Support for Radioactive Waste Management in Ukraine	36 months	9,627,627	Implementation to start
ChSF - Additional EU Contribution to the European Bank for Reconstruction and Development (EBRD) for the Chernobyl Shelter Fund	36 months	17,000,000	Paid
<b>Subtotal Ukraine</b>		<b>40,627,627</b>	
<b>Egypt</b>			
Egypt – EG3.01/10 Provision of assistance related to developing and strengthening the capabilities of the Egyptian Nuclear Regulatory Authority	36 months	1,500,000	Implementation to start

<sup>22</sup> The table includes also the projects for Brazil which were initially approved by the INSC Committee but subsequently cancelled as the required Financing Agreement could not be concluded within the required timeframe.

<sup>23</sup> Tables 4 and 5: Durations are indicative where no contracting has taken place yet.

<b>Jordan</b>			
Jordan – JO3.01/10 Provision of assistance related to developing and strengthening the capabilities of the Egyptian Nuclear Regulatory Authority	36 months	1,200,000	Implementation on-going
<b>CENTRAL ASIA</b>			
<b>Uzbekistan</b>			
Uzbekistan - UZ4.01/0 Integrated environmental impact assessment and feasibility study for the management and remediation of uranium production sites of Charkesar and Yangiabad	36 months	1,500,000	Implementation to start
<b>CHINA</b>			
China - CH3.01/10 Upgrading Nuclear Safety and Management Technical Capabilities of the Chinese National Nuclear Safety Authority (NNSA) and other Institutions and Centres Providing Technical Backstopping to NNSA	36 months	2,000,000	Implementation to start
<b>CENTRAL &amp; LATIN AMERICA</b>			
<b>Brazil</b>			
Brazil BR1.01/10 Nuclear Safety Cooperation with the Nuclear Operator of Brazil (Electronuclear)	36 months	3,000,000	Project cancelled
<b>Mexico</b>			
Mexico - MX3.01/10 Nuclear Safety Cooperation with the Regulatory Authorities of Mexico (CNSNS)	36 months	1,800,000	Implementation on-going
Mexico MX4.01/10 Cooperation in the development of a policy and strategy for the management of spent nuclear fuel (including provisions for its safe interim storage) and radioactive waste in Mexico	36 months	1,500,000	Implementation on-going
<b>MULTI-COUNTRY</b>			
Multi-Country MC.01/10 Contributions to IAEA Technical Cooperation and Nuclear Installation Safety projects in non-EU countries	36 months	4,000,000	Implementation on-going
Multi-Country MC.02/10 Support to establishing CONNECT: Connecting the Network of Networks for Enhanced Communication and Training in Radioactive Waste Management, Decommissioning and Environmental Remediation	36 months	500,000	Implementation on-going
Multi-Country MC3.01/11 Training and Tutoring for experts of the National Regulatory Authorities and their Technical Support Organisations for developing or strengthening their regulatory and technical capabilities	36 months	3,000,000	Implementation on-going
Multi-Country REG4.01/10 Establishment of a legislative and regulatory framework for the remediation of uranium mining legacy sites in Central Asia, establishment of a regional watershed monitoring system and capacity building in analytical techniques, training and education and information exchange	36 months	2,500,000	Implementation on-going
		<b>61,627,627</b>	
<b>Subtotal 2010 Part II</b>			
<b>TOTAL AAP 2010</b>		<b>69,327,627</b>	

**TABLE 5****2011 Annual Action Programme –Parts I and II**

<i>Region/ Country/ Project Title</i>	<i>Duration</i>	<i>Amount</i>	<i>Status (mid 2012)</i>
Accompanying measures 2011 for the management of the Nuclear Safety Instrument – Global Allocation	36 months	500,000	Implementation to start / on-going
AA.01/11 Technical support for the project cycle management of nuclear safety projects (JRC)	36 months	2,500,000	Implementation to start
R7.01/11 Assistance to the Implementation of the Nuclear Safety Instrument (INSC) in the Russian Federation (JMU)	36 months	750,00	Implementation on-going
U7.01/11 Assistance to the Implementation of the Nuclear Safety Instrument (INSC) in Ukraine (JSO)	36 months	2,750,000	Implementation on-going
ChSF - European Union Contribution to the Chernobyl Shelter Fund	36 months	28,000,000	Paid
Ukraine - Health and ecological programmes around the Chernobyl Exclusion Zone	36 months	4,200,000	Implementation to start
<b>Subtotal 2011 Part I</b>		<b>38,700,000</b>	
<b>ENP</b>			
<b>Armenia</b>			
Armenia - A1.01/11 Contributions to the Armenian nuclear power plant (ANPP) operator for the implementation of the "stress tests" at ANPP	36 months	1,000,000	Implementation on-going
Armenia - A3.01/11 Enhancement of the safety assessment capabilities of the Armenia Nuclear Regulatory Authority (ANRA), for nuclear decommissioning and for the regulatory assessment of the execution of the "stress tests"	36 months	800,000	Implementation to start
<b>Ukraine</b>			
Ukraine – CSF2001.II European Union Contribution to the Chernobyl Funds	36 months	8,000,000 (direct)	6,000 paid, 2,000 to be paid
Ukraine – U3.01/11 Cooperation with SNRIU in regulatory activities connected with the implementation of the Joint Safety Improvement Program at Ukrainian NPPs and "soft" EU industrial projects	36 months	2,400,000	Implementation to start
Ukraine – U4.01/11 Support to radioactive waste management in Ukraine	36 months	7,600,000	Implementation to start
<b>CENTRAL ASIA</b>			
<b>Kyrgyzstan</b>			
Kyrgyzstan - KG4.01/11 Integrated Environmental Impact Assessment (EIA) and Feasibility Study (FS) for the management and the remediation of the Min-Kush uranium production legacy site	18 months	600,000	Implementation to start
<b>Mongolia</b>			
Mongolia - MN3.01/11 Establishment of a Regulatory Framework for Uranium Mines and Milling Operations in Mongolia	36 months	1,000,000	Implementation to start

<b>Tajikistan</b>			
Tajikistan – TJ04.01/11 Integrated Environmental Impact Assessment (EIA) and Feasibility Study (FS) on the remediation of the uranium tailings management facility of Degmay	36 months	1,100,000	Implementation to start
Tajikistan – TJ4.02/11 Integrated Environmental Impact Assessment (EIA) and Feasibility Study (FS) on the remediation of the remediation of the uranium mining and processing facility of Taboshar	36 months	1,300,000	Implementation to start
<b>CHINA</b>			
China – CH3.01/11 Enhancing the capacity and regulatory capabilities of the Chinese National Nuclear Regulatory Authority and its Technical Support Organisations	36 months	2,000,000	Implementation to start
China – CH3.02/11 Enhancing capabilities in the areas of Emergency Management and in the Management of Severe Accidents	36 months	1,500,000	Implementation to start
China – CH4.01/11 Cooperation in the development of a policy and strategy for the management of radioactive waste and spent nuclear fuel in China	36 months	1,500,000	Implementation to start
<b>MULTI-COUNTRY</b>			
Multi-country MC3.01/11 Training and Tutoring for experts of the National Regulatory Authorities and their Technical Support Organisations for developing or strengthening their regulatory and technical capabilities	36 months	3,000,000	Implementation to start
Multi-country MC5.01/11 Nuclear Safeguards – Brazil and Argentina	36 months	2,000,000	Implementation to start
<b>OTHER</b>			
<b>Iraq</b>			
Iraq – IQ4.01/11 Feasibility study, basic design and engineering design of an engineered radioactive waste disposal facility	36 months	2,000,000	Implementation to start
<b>Subtotal 2011 Part II</b>		<b>35,800,00</b>	
<b>TOTAL AP 2011</b>		<b>74,500,000</b>	

**TABLE 6****2010 and 2011 Countries Allocations and Contracting Status (by mid-2012)**

AP		CENTRAL & LATIN AMERICA	CHINA	RUSSIA	UKRAINE	ENP exc. UKR <sup>24</sup>	IRAQ	CENTRAL ASIA (MONGOLIA, KYRGYZTAN, TAJIKISTAN, UZBEKISTAN) <sup>25</sup>	MULTI-COUNTRY	ADMINISTRATIVE SUPPORT MEASURES	TOTAL
2010-I	Allocated	-	-	1,000,00	3,000,000	2,400,000		-	-	1,300,000	7.700.000
	Contracted	-	-	1,000,000	3,000,000	2,330,000		-	-	903,387	7.233.387
2010-II	Allocated	6.300.000	2.000.000	-	40,627,627	3,700,000		1.500.000	7,500,000	-	61.627.627
	Contracted	3.000.000	-	-	17,000,000	1,200,000		-	7,475,000	-	28.675.000
2011-I	Allocated	-	-	- <sup>26</sup>	32,200,000	-		-	-	6.500.000	38.700.000
	Contracted	- <sup>27</sup>	-	-	28,000,000	-		-	-	1,847	28.001.847

<sup>24</sup> Includes under AAP 2010 (in alphabetical order): Armenia, Egypt, Jordan; includes under AAP 2011 (in alphabetical order): Armenia. Ukraine, although being a ENP participant country, is mentioned separately due to the large amount of funding under INSC.

<sup>25</sup> Includes under AAP 2010: Uzbekistan; includes under AAP 2011: Kyrgyzstan, Mongolia and Tajikistan.

<sup>26</sup> The "assistance to the Implementation of INSC in the Russian Federation (JMU)" and in "(...) Ukraine (JSO)" projects are considered to be part of "Administrative Support Measures" (see on the right side: Admin Support Measures 2011-I).

<sup>27</sup> See on the right side: Multi-Country 2011-I.

<b>2011-II</b>	<b>Allocated</b>	-	<b>5,000,000</b>	-	<b>18,000,000</b>	<b>1,800,000</b>	<b>2,000,000</b>	<b>4,000,000</b>	<b>5,000,000</b>	-	<b>35,800,000</b>
	<i>Contracted</i>	-	-	-	<i>8,000,000</i>	<i>1,000,000</i>		-	-	-	<i>9,000,000</i>
<b>TOTAL</b>	<b>Allocated</b>	<b>6,300,000</b>	<b>7,000,000</b>	<b>1,000,000</b>	<b>93,827,627</b>	<b>7,900,000</b>	<b>2,000,000</b>	<b>5,500,000</b>	<b>12,500,000</b>	<b>7,800,000</b>	<b>143,827,627.000</b>
	<i>Contracted</i>	<i>3,000,000</i>	-	<i>1,000,000</i>	<i>56,000,000</i>	<i>4,530,000</i>		-	<i>7,475,000</i>	<i>905,234</i>	<i>72,910,234.00</i>

**TABLE 7****2010 and 2011 Sector Allocations and Contracting Status (by mid-2012)**

<b>Annual Action Programme</b>		<b>On-Site Assistance /Support to the Operator (Cat. 1)</b>	<b>Regulatory Authorities (Cat. 3)</b>	<b>Radioactive Waste Management (Cat. 4)</b>	<b>Multi-country / regional projects incl. IAEA cooperation</b>	<b>Chernobyl projects</b>	<b>Administrative Support Measures</b>	<b>TOTAL</b>
<b>2010</b>	<b>Allocated</b>	<b>18,400,000</b>	<b>10,000,000</b>	<b>15,127.627</b>	<b>7,500,000</b>	<b>17,000,000</b>	<b>1,300,000</b>	<b>69,327.627</b>
	<i>Contracted</i>	<i>6,330,000</i>	<i>2,700,000</i>	<i>1,500,000</i>	<i>7,475,000</i>	<i>17,000,000</i>	<i>903,387</i>	<i>35,908,387</i>
<b>2011</b>	<b>Allocated</b>	<b>1,000,000</b>	<b>7,700,000</b>	<b>14,100,000</b>	<b>5,000,000</b>	<b>40,200,000</b>	<b>6,500,000</b>	<b>74,500.500</b>
	<i>Contracted</i>	<i>1,000,000</i>	<i>-</i>	<i>-</i>	<i>-</i>	<i>36,000,000</i>	<i>1.847</i>	<i>37,001,847</i>