Annual Report 2009 on Implementation of AIDCO Nuclear Safety Projects

= Assessment of the Monitoring Team =

This report is issued in response to a request by AIDCO A4 covering the 2009 monitoring reports.

1. Relevance and Quality of Design

The projects are designed in-line with the strategic plan of the Instrument for Nuclear Safety Cooperation (INSC). The nuclear safety thematic sectors duly pursue Overall Objectives with improvements of (i) safety culture at the Operator of Nuclear Power Plants (NPPs), (ii) competencies of Regulators, and (iii) safe management of radioactive waste & decommissioning and nuclear material accountancy and control. Hence the relevance is assessed as highly appropriate and compatible with IAEA *Fundamental Safety Principles (2007)*. Essentially nuclear safety projects duly ensure the *Human Right on a standard of living adequate for health and well-being*; both for present and future generations. The appropriateness of the design is the basis of shown good scores.

Table 1: Scores of 2009 Monitoring reports.

Thematic sectors[1)] (no. Monitoring Reports)	**Area of assessment**					**Average for sector**
	Quality of Design	Efficiency	Effective-ness	Impact	Sustaina-bility	
Support to the Operator (SO) = Operation & Design = (19)	3.19	3.09	3.11	3.11	3.21	**3.14**
Regulatory Authorities (RA) (26)	3.05	2.93	2.96	3.03	3.11	**3.01**
Radioactive Waste & Safeguards (RW&S) (15)	3.25	2.81	2.83	3.03	3.11	**3.01**
Other (JSO/ JMU offices) (2)	3.30	2.70	2.75	2.80	2.75	**2.86**
Average	**3.15**	**2.94**	**2.97**	**3.05**	**3.13**	**3.05**

Note: 1. From Monis database 01/01/2009 to 31/12/2009 for issued monitoring reports: Ukraine (26), Russia (27), Armenia (5), Moldova (1), Belarus (2) and Azerbaijan (1). Total reports 62, total monitored 'stand-alone' projects 55.
2. Score: 4=very good, 3=good, 2=problems, and 1=serious deficiency. 'On track'= 2.5.

The institutional structure supporting nuclear safety is adequate in target countries. Mostly well established organisations (Operator, Regulator, Technical Organisations) are involved. Reorganisations of the Armenian and Russian nuclear Regulator and restructuring of the Russian nuclear industry under Rosatom were completed.

The projects properly pursue higher levels of safety compliance with international conventions and resolutions (IAEA Nuclear Safety, Security & Radwaste, UN-1540: Non-proliferation) and to the EC policy. At the heart of the nuclear safety culture is the believe that the pursuit of continuous improvement is a vital safeguard against complacency in the operation of a nuclear facility and in regulatory arrangements (European Regulators, ENSREG). Nuclear Safety projects are duly compliant with this principle that underpins the June 2009 Council Directive (2009/71/Euratom) on establishing a Community framework for the safety of nuclear installations. Moreover, the AIDCO-JRC's comprehensive programme on Safeguards is in line with the 2009 Commission's policy proposal (IP/09/992) on enhancing chemical, biological, radiological and nuclear security.

Evolving political and strategic conditions were at the basis for the Government of the Russian Federation for not-signing the Financing Agreement. Hence most new projects under AP 2007 & 2008 could not be contracted. A partnership with Russia is being explored[1] for cooperation on high levels of safety and security standards.

2. Project Performance (Efficiency & Effectiveness)

Support to the Operators of 10 Nuclear Power Plants (NPPs) have been assessed with highest scores on performance (3.09 & 3.11). Especially the Operators of Russian NPPs with the now almost completed on-site assistance projects, regard the assets of cooperation such as Human Factors, Management of Change, and Risk Informed Decision Making as highly valuable. Projects in Russia are phasing out with selected projects at Smolensk and Beloyarsk extended for covering the period for delivery of equipment.

New projects in Ukraine successfully made the transition to more focus on 'Soft Activities' i.e. cooperation on best practices for operation & maintenance of NPPs with only limited supply of equipment. This transition promotes ownership. The observed reduced presence of Contractor's team leaders requires more coordination by the NPP. The Joint Support Office in Kiev promotes the transition to 'Soft Activities' by facilitating a systematic identification, selection, and prioritisation of proposals which were duly elaborated by NPPs' experts for final decision making. Energoatom established internal procedures and structures to support this process.

The On-Site Contractor at the Armenian NPP expedited the preparation of modernisation measures enabling the contracting of some ten supply projects in 2010-11. Due attention is being given to the preparation for decommissioning with target 2016. The IAEA-assisted Coordination meetings are highly beneficial for creating

[1] Green light from the Council for the Commission to negotiate a broad Nuclear Partnership Agreement with Russia, 22 Dec. 2009, IP/09/1990.

maximum effect from international support that now also includes a Russian contribution.
Profound expertise of JRC Petten is at the basis of five projects on material embrittlement of VVER reactors. Extending contracts required attention. The applied reviews and exchange between experts contributed to the high quality and acceptance of the results which are important for determining the safe lifetime of reactor units. Other generic projects have a more direct relation to operating practices e.g. Risk Monitor, preventive maintenance strategy and product conformity assessment. The nuclear industry gives proper support to the implementation of these projects which are regarded as effective and beneficial to the operational safety.
Regulatory Authorities: Regulators in target countries are properly supported in their principal responsibilities on regulation, inspection and licensing nuclear activities. Specific technical support is provided for the license review of industrial modernisation projects at nuclear facilities (2+2 concept). The applied contracting strategy with independent components of larger overall RA Contracts provides good flexibility as it facilitates the essential synchronisation of license reviews with the schedule of submission of license documents by the industrial side. Generally, a consistent set of best EU practices is used as reference in the review. Closer adherence to defined Nuclear Licensing Steps (NLSs) would support transparency on status.
Routine practices of national Regulators in Ukraine and Russia have been well established and present needs are more confined to areas that typically require innovative approaches. The cooperation on licensing for the Lepse ship decommissioning was successful while the license review of the Chernobyl Engineered near surface radwaste Disposal Facility requires further attention. Expressed future needs for the Regulator in Ukraine relates to specific areas where the national expertise can benefit from exchange on EU practices and approaches.
Radioactive Waste & Safeguards: The completed project facilitating a 'Site Monitoring Unit' for Chernobyl waste projects has been highly effective. Many contractual, legal, regulatory and technical impediments were resolved in the process of completing the Industrial Complex for Solid Radioactive waste Management (ICSRM). Although full licensing (hot commissioning) and operating skills need to be acquired by ChNPP in 2010, the successful completion of the first large radioactive waste treatment facility at Chernobyl is a major achievement.
Projects not fully successful are a Monitoring system at Ob/Irtysh River as an offer for related equipment was not received, and the Murmansk Information Centre that was only recently relocated to the *Lepse* museum ship as confirmed by AIDCO and the new local Governor. Results are expected but the initial operation of the Centre can no longer be supported. Moreover, an ongoing project on establishing a facility for manufacturing packages (Drums & Containers) for radwaste near Chernobyl is being implemented with large delay.
In 2009, a comprehensive cooperation on ***Safeguards*** started with 7 target countries based on Administrative Agreements between AIDCO and JRC-Ispra. Relevance and visibility are very good. The coordination through the Joint Steering Committee on Safeguards (Rosatom-JRC/AIDCO) on Russian projects and the applied integrated approach were major assets of cooperation with: (i) Acquisition of state-of-the-art equipment, (ii) Exchange of measuring techniques, and (iii) Disposition of reference materials. An area for attention was the limited review of Partner's reports leading to a poor documentation of achievements. At present, most Safeguards projects are at an initial phase with a slow start that is appropriate for first-time partners to join and make proper arrangements.
Overall qualifications for efficiency and effectiveness are good as reflected in the scoring overview.

3. Impact Prospects and Potential Sustainability

OS: Equipment once licensed and installed has a profound sustainable impact. Sustaining results of soft-activities require continued vigilance of the NPP Operator. This sustainability of soft-activities can often not be fully assessed near the end-of-project; hence Ex-Post Monitoring of selected projects could be an asset. Wider attendance to end-of-project dissemination meetings would enhance the project's impact.
RA: Performed EU expert reviews of licenses promote that internationally supported projects meet best practices. Moreover, international cooperation and ratified international conventions with periodic peer reviews (most notably on Nuclear Safety) are sustainable mechanisms that avoid complacency in meeting high standards. Annual review meetings in both Moscow and Kiev give a comprehensive overview of status and actions.
RW&S: Managing RW is of interest in both EU and partner countries. Transferred analyses methods give due consideration to environmental concerns and methods for isolating the low and intermediate level RW. For Safeguards projects, JRC Ispra assisted coordination and cooperation ensures a sustainable impact of projects.

4. Overall Assessment

The Nuclear Safety programme evolved from assistance to cooperation between qualified expert organisations in EU and target countries. In this cooperation the national organisations have been empowered to consider best practices in their day-to-day work and have been encouraged to request for international consultations for innovative approaches e.g. on remediating legacy radwaste. The promoted dialogue between Operators and Regulators pursued an improved safety culture while duly respecting their distinguished responsibilities.
In the spirit of the 2005 Paris Declaration on Aid Effectiveness, the monitoring team involves national experts in assessing the project implementation which is also an asset for easy access to facilities and experts. The documented responses from AIDCO of nearly 50% indicate the careful attention given to monitoring reports.
Principal End-Users of Nuclear Safety projects are greatly indebted for expediently resolving difficulties and for achieving pertinent results. Only through diligent and zealous efforts by staff of Project Partners, Contractors, EU Delegations, JRC and AIDCO alike, these successes could have been accomplished.
The closer cooperation of AIDCO with IAEA is considered beneficial for (i) increased effectiveness of donor coordination avoiding duplication, (ii) provision of an independent expert review of achievements, and (iii) a proper overview of needs in shaping future cooperation.

Nuclear Safety Monitors, Joseph Jehee, Nick Vinogradov, Vadim Kuzyk, and Yuri Dolgov. January 2010.