

## **Technical Meeting on Remediation Strategies and Long Term Management of Radioactive Waste after Accidental Radioactive Releases to the Environment – 20<sup>th</sup> anniversary of the Goiânia accident**

**Organized by the International Atomic Energy Agency (IAEA) in cooperation with the Brazilian National Nuclear Energy Commission (CNEN) and the Spanish Nuclear Safety Council (CSN)**

*Mendes Convention Center, Santos, Brazil, 3 to 5 October 2007*

### **Report on activities and discussions occurred during Session 2: “Planning Environmental Remediation after Accidental Radioactive Releases”**

Session 2 was chaired by Mr. Antonio Colino (CSN, Spain). It began with an invited lecture by Ms. Catherine Mercat (IRSN, France) entitled “Towards a shared vision of contaminated territories to support efficient remediation strategies”. This presentation was followed by presentations made by representatives of Ukraine (Mr. O Bondarenko), Brazil (Ms. E Rochedo and Ms. D da Costa Lauria), Mexico (Mr. M A Reyes) on the environmental consequences, environmental remediation and other aspects of rehabilitation carried out following the accidents in Chernobyl, Goiania and Juarez respectively. A final presentation was made by a representative of Spain (Mr. P Zuloaga) on the long-term management strategies for radioactive waste generated during accidents and incidents in Spain and the remediation efforts after radioactive contamination of the Spanish environment.

The presentations were followed by a discussion on international initiatives to improve environmental remediation planning and implementation. Mr Didier Louvat (IAEA) acted as moderator. The following main issues/recommendations for the IAEA were raised during the presentations and the ensuing discussion:

- **The development of a methodology for the assessment of the environmental impact of accidental releases.** It was recognised that the IAEA should assist Member States in the development of a methodology that enables the relevant organisations to assess the impact on the environment of releases of radioactivity caused by an accident. Such a methodology will help Member States devise an effective remediation strategy and prioritise their actions. Ms Mercat illustrated a very interesting and valuable methodology, which is, however, specifically aimed at evaluating the impact of releases from NPPs. The Agency should take account should of the national infrastructure and requirements when assisting Member States develop their methodology.
- **The involvement of stakeholders in elaborating a strategy for remediation of the environmental, long-term rehabilitation and other environmental aspects is an important factor for the success of the strategy.** Ms Mercat’s presentation also highlighted that it is important to involve all stakeholders when developing a

remediation strategy for the environment and that the latter should take account of the social, economical and political aspects as well as the radiological ones. The involvement of stakeholders at the planning stage will help the authorities gain the trust of the population affected. Mr Bondarenko underlined that the lists of options for rehabilitation of radioactive contaminated areas in Ukraine are still at the stage of proposal and will require a dialogue with the affected population and other stakeholders to be fully accepted and implemented.

- **The high cost of environmental remediation and the importance of prevention rather than remediation.** All the presentations highlighted the resources required in the implementation of measures for environmental remediation: financial cost to clean up the affected areas and to store the radioactive waste generated, man power necessary to monitor the areas, carry out the clean up and provide support to the population affected and to the individuals involved in the emergency response and in the recovery operations (medical staff for example), etc., social and economical impact of the accident, which could extend to the long term. In this respect, the importance of preventing accidents was emphasised by the IAEA representatives during the discussion, since prevention of accidents is less costly than remediation. It was also pointed out that it is vital for countries to have the necessary infrastructure in place to prevent such accidents and to cope with the consequences should such accidents occur. The IAEA can play a major role not only to provide assistance to Member States when such accidents occur at the request of the Member State but also to help Member States to develop their national infrastructure by, for example, assisting in establishing a national regulatory framework and providing training.
- **The need for clear guidance on criteria for environmental remediation.** The participants indicated that at the time of the accidents in Chernobyl, Goiania and Juarez no clear radiological criteria existed at international level which could be used in the application of remediation actions. In this regard another issue that was discussed was the use of clearance levels for the purposes of cleanup of a contaminated area. The discussions showed that there is a great interest in this issue and that concerns and doubts still remain on these matters. The IAEA was urged to make every possible effort to provide guidance in the area of remediation where clear regulatory guidelines are needed.
- **The transboundary implication of radiological accidents and the need for an international regulatory framework.** The discussion highlighted that all the radiological accidents presented during the meeting had transboundary implications and involved collaboration between different countries. It is therefore of great importance that mechanisms are in place to allow different countries to fully co-operate. The IAEA has played a key role in promoting collaboration at international level by establishing an international regulatory framework through its Safety Standards and its International Conventions. The IAEA should continue its work to foster international co-operation and harmonisation of regulatory frameworks.