

Application of the Code of Conduct on the Safety of Research Reactors, 28–31 October 2008, Vienna

The International Meeting on Application of the Code of Conduct on the Safety of Research Reactors (the 'Code') was held in Vienna, 28-31 October, 2008, following four regional meetings held in 2006 and 2007. The purpose of this International Meeting was: to identify common issues and trends in application of the Code; to identify actions to be taken to address issues; and to exchange information, enhance international cooperation and promote more effective application of the Code.

Forty-one (41) Member States were represented by 64 delegates at the meeting. The excellent attendance provides encouraging evidence of widespread interest in the Code and its application.

The thirty-two (32) country presentations at this meeting reported progress in implementation of the Code, but some Member States reported continuing challenges, including:

- Effective independence of the regulatory body;
- Need for improvement in the requirements and implementation process for periodic safety review;
- Continuous improvement of safety culture;
- Improved safety management, and greater transparency, stakeholder engagement and public involvement in regulation and operations to enhance the public's perception as well as the reality of safety;

- Aging of facilities and staff, establishment of adequate aging management programmes, and availability of well-trained and competent staff and appropriate financing of both the operating organization and regulatory body;
- Deficiencies in arrangements for reactors in extended shutdown and for decommissioning.

This meeting was a successful and effective forum for exchange of information and experience. The principal conclusions and recommendations for future work included the following:

- The series of regional meetings leading up to this international meeting has provided useful insights into ongoing work on implementation of the Code. Future regional meetings should continue to be arranged.
- International or regional meetings should also be arranged with a focus on particular issues where difficulties have been reported.
- There should be future triennial International Meetings at a time shortly after the Review Meetings of the Convention on Nuclear Safety. These meetings should include a voluntary, but expanded reporting and discussion process resembling the process used for the CNS.

International Nuclear Security Advisory Service (INSServ) – An Overview

The International Nuclear Security Advisory Service (INSServ) is a flexible mechanism to help States determine the status of technical and administrative arrangements necessary for the effectiveness of a national nuclear security regime. Subjects covered by INSServ missions include: national legislative and regulatory frameworks for nuclear security; physical protection of nuclear and radioactive material and associated facilities; detection and interdiction of illicit trafficking in nuclear and other radioactive material; and planning and readiness for responding to nuclear security incidents as well as assessing nuclear forensics capabilities. Through this mechanism, the IAEA establishes partnerships and networking with national stakeholders - such as law enforcement and customs - with important roles in ensuring security within the State. The results of the INSServ, once agreed by the State, are incorporated into an Integrated Nuclear Security Support Plan (INSSP) so that identified nuclear security needs can be addressed in a systematic way using available national, bilateral or multilateral resources.



Border crossing: inbound lane for radiation inspection of heavy trucks



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<http://www.iaea.org/OurWork/ST/NS>

Environmental Monitoring for Radiation Safety II

"All nuclear facilities and uranium mines, in their day-to-day activities, release some amount of radioactive effluents into the environment, transferring to the food chain, the air you breathe or to the water you drink," says Didier Louvat, Head of the IAEA's Waste and Environmental Safety Section. "Of course, before governments give authorization for a nuclear power plant to operate or for mining to take place, they have to assess the risk these releases can pose to the public and to the environment."

The IAEA has been working with nuclear safety organizations from various countries for decades to streamline the way such risks are assessed. It regularly hosts sessions through a programme called *Environmental Modelling for Radiation Safety (EMRAS)*. It builds on work that began shortly after the 1986 Chernobyl accident, which released radionuclides over large areas of the former Soviet Union and Europe, and prompted a reassessment of the way risks associated with nuclear facilities are determined.

The IAEA's EMRAS II Programme was launched at its First Technical Meeting which was held at the IAEA's Headquarters in Vienna from 19 to 23 January 2009. The meeting was attended by 110 participants from 38 Member States.

EMRAS II continues some of the work of previous international programmes in the field of radioecological modelling. The general aim of the programme is to improve capabilities in the field of environmental radiation dose assessment by the acquisition of improved data for model testing, model testing and comparison, reaching consensus on modelling philosophies, approaches and parameter values, development of improved methods and exchange of information. The latest EMRAS II will result in further harmonization on modelling radionuclide transfer to the environment. To date, EMRAS has also focused on accident assessments, waste management and disposal, and uranium mining activities.



EMRAS meetings attract many attendees because it is an effective opportunity to check the validity of the assessment models used every day in their countries. At these gatherings nuclear safety assessors test their models with different scenarios, compare results and eventually refine their mathematical calculations to better estimate the true impact of radionuclide releases. "The importance of a harmonized approach is that, if you have nuclear facilities adjacent to other countries, then it is essential that assessments made in one country are compatible with assessment methods in the bordering country," says Mr. Louvat.

Nine working groups were established at the conference:

- Reference Methodologies for Controlling Discharges Routine releases;
- Reference Approaches to Modelling for Regulatory Compliance at NORM and Legacy Sites;
- Reference Models for Waste Disposal;
- Biota Modelling;
- Wildlife Transfer Coefficient Handbook;
- Dose Effects Modelling;
- Tritium Accidents;
- Environmental Sensitivity; and
- Urban Areas.



Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management

the environment. The adherence to the Joint Convention by IAEA Member States that are not contracting parties is a very straightforward way to express the commitment of a State with waste and spent fuel management safety.

The Joint Convention

The Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management was adopted on 5 September 1997 and entered into force on 18 June 2001. The contracting parties to the Joint Convention have now held two review meetings and the third one will be held in Vienna, at the IAEA Headquarters from 11 to 20 May 2009.



Second Review Meeting, May 2006

The review meetings have identified areas where significant progress has been made, particularly in the establishment of holistic national waste management policies, including decommissioning activities, and in the management of legacy waste. A number of challenges have been identified in the implementation of these policies, amongst which are the long term management of spent fuel, the disposal of high level waste and the need to find suitable disposal options for all types of radioactive waste. In addition, the review process of the Joint Convention provides a very special opportunity to learn from each other and to share experiences to improve the measures for the safety of radioactive waste and spent fuel management.

Number of Contracting Parties

To date, there are 46 contracting parties to the Joint Convention. Since the Second Review Meeting, five countries have become contracting parties, namely, China (December 2006), South Africa (February 2007), Kyrgyzstan (March 2007), Nigeria (July 2007) and Tajikistan (March 2008). Recently accessed are Senegal and Uzbekistan, who will become contracting parties on March 24 and April 19, 2009 respectively.

On May 11 the Third Review Meeting of the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management (the Joint Convention) will start at the IAEA's Headquarters. More than 500 participants are expected.

At a time when we are witnessing an expansion of nuclear power programmes to meet the increasing energy demands in many parts of the world, radioactive waste disposal continues to be high on the nuclear policy agenda of many countries. Together with the overall safety of nuclear power plants and decommissioning, waste disposal remains a key concern of the public and the news media. The plans for new and reinvigorated nuclear power development worldwide need to be complemented by equally ambitious plans for the establishment and enhancement of sustainable radioactive waste management programmes encompassing all types of waste generated by the nuclear fuel cycle; up to and including their final disposal. The failure to properly address waste disposal in the first decades of nuclear energy development

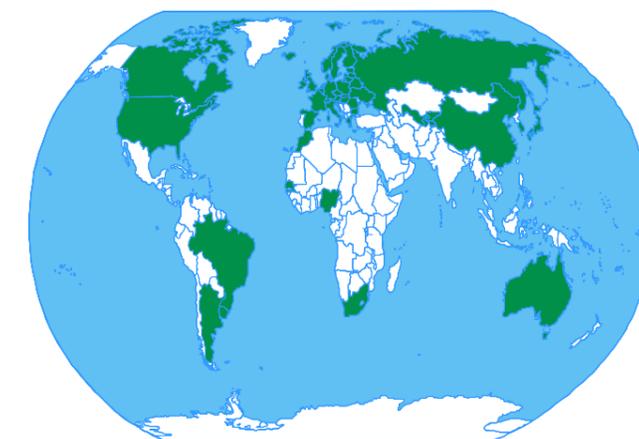


First Review Meeting, November 2003

have left a legacy of doubt in the minds of the public and politicians over its overall safety. If this doubt is not ameliorated soon, it could lead to all the ambitious plans to expand the use of nuclear power on a global scale being significantly delayed. This concern could also be extended to spent fuel management.

Radioactive waste management, however, must not be seen only in the context of a nuclear programme and it is important that all IAEA Member States develop appropriate policies and strategies to manage their radioactive waste in a way that protects the public and

IAEA's web pages for the Joint Convention: the public one and the page restricted to designated users from Contracting Parties, applied for the Review Process.



Forty eight Contracting Parties as of the third review meeting (May 2009)

As was expressed by the contracting parties at the second review meeting, the current number of contracting parties is far from satisfactory. There are still Member States that have nuclear power plants that are not contracting parties. In addition, the Joint Convention concerns all countries as there will be radioactive waste, such as disused sealed sources, even in non nuclear states.

In 2008 the IAEA General Conference resolution on measures to strengthen international cooperation in nuclear, radiation, transport and waste safety welcomed again the increase in the number of contracting parties to the Joint Convention and encouraged Member States which have not yet become a party to do so.

The promotion of the Joint Convention by the IAEA

The International Atomic Energy Agency continues its efforts to promote membership in the Joint Convention. Since the last Review Meeting, the IAEA carried out several promotional activities in a number of regions of the world. Several contracting parties provided resources for these activities to develop.

All Member States of the IAEA that are now planning to initiate nuclear programs are advised by the Secretariat to ratify both the Convention of Nuclear Safety and the Joint Convention as a first step in the delineation of their safety infrastructure.

The Role of Contracting Parties

The promotion of the Joint Convention is not only the duty of the IAEA Secretariat. It is also one of the duties of each contracting party to approach and convince its closest neighbours to ratify the Joint Convention and

later to mentor and accompany them on the administrative and practical steps necessary to comply with it. At the IAEA Secretariat, we will never have better convincing arguments than a State may give to its neighbours by considering them as peers and inviting them to review their work.

Future Prospects

As the number of contracting parties grows, the vision of the Joint Convention as a global instrument for the safety of the management of spent fuel and radioactive waste will be reinforced, and its incentive character highlighted. The spirit of the Joint Convention now is to revitalize it as a forum where peers work to improve the radiological safety of the world and learn from each other's experiences, in an ambiance of mutual respect and trust. All contracting parties will eventually receive net benefits from their participation in the Joint Convention.