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2007/Note 36

Note by the Secretariat

Supplementary information regarding measures to strengthen international cooperation in nuclear, radiation and transport safety and waste management

**A report supporting
GOV/2007/25-GC(51)/3**

28 August 2007

Supplementary information regarding measures to strengthen international cooperation in nuclear, radiation and transport safety and waste management

A. Introduction

1. This report provides additional information regarding Secretariat activities on international conferences, education and training related to resolution GC(50)/RES/10 and the report of the chairman of the open-ended meeting of technical and legal experts for sharing of information as to States' implementation of the Code of Conduct on the Safety and Security of Radioactive Sources and its supplementary Guidance on the Import and Export of Radioactive Sources.

B. International conferences

B.1. International Conference on Lessons Learned from Decommissioning of Nuclear Facilities and the Safe Termination of Nuclear Activities

2. This conference was held in Athens from 11 to 15 December 2006. Almost 300 delegates from 50 Member States — including 32 developing countries — attended the conference. The main outcomes of the conference relate to three areas.

3. The first area is the enhancement of international cooperation. This includes making more effective use of the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management to increase government awareness of the need for early planning, adequate funding and the development of long term strategies for decommissioning and waste and spent fuel management. Participants recommended that the Agency launch a network to promote the flow of knowledge and experience among organizations involved in decommissioning.

4. The second area is the improvement in national strategic planning for decommissioning. This includes the effective national implementation of international clearance levels, the early development of decommissioning plans — including costs and the availability of funding — and the preservation of operational knowledge.

5. The third area concerns practical considerations, especially the need, as far as possible to apply straightforward proven technologies, and to involve all stakeholders early in the decommissioning process (and in particular in the determination of the end state for the site and the release of material from the site).

6. The outcomes of the conference were used to adjust the actions and to update the International Action Plan on the Decommissioning of Nuclear Facilities. Complete information on the conference is available on the Agency's website¹.

B.2. International Conference on the Challenges faced by Technical and Scientific Support Organizations in Enhancing Nuclear Safety

7. This conference was held in Aix-en-Provence, France, from 23 to 27 April 2007. A total of 170 participants from 45 countries, four international organizations and two observers participated in the conference.

8. The conference concluded that technical and scientific support organizations (TSOs) are playing an important role in the safe, reliable and secure use of nuclear energy and associated technologies in a technically sound manner and they are an essential participant in efforts to achieve global energy security and sustainable development. The importance of TSOs having a strong knowledge base and technical competencies, including adequate resources was affirmed, and it was agreed that TSOs should be able to provide independent technical and scientific advice without pressure from outside bodies. In addition, effective regional and international cooperation between TSOs was considered important in ensuring and continuously improving their ability to provide services necessary for safety. It was further agreed that TSOs should meet regularly to discuss common challenges and to exchange and share experience.

9. The conference identified a number of recommendations to be considered by TSOs, regulatory authorities, national governments, relevant international and regional organizations, the nuclear industry and other stakeholders. These are related in particular to: networking between TSOs and other relevant bodies to more effectively cooperate and share knowledge, experience and advice, and the role of the Agency in this networking as a facilitator; cooperation among TSOs in developing common research work on nuclear and radiation safety using, where feasible, existing frameworks, in particular those provided by the Agency and the OECD/NEA; the role of the Agency in clarifying questions raised in Member States with respect to the roles and activities of TSOs in enhancing nuclear safety and in the consideration of the relevant issues and approaches; the role of the Agency in facilitating peer review and self assessment approaches for TSOs; adoption of management systems, especially qualification procedures, by TSOs to maintain credibility and competence; and TSOs providing continuing support to the Agency in conducting activities related to nuclear installations and radiation safety, security and protection of the environment.

10. The recommendations of the conference, especially those for the Agency, will be analysed to see how these can be incorporated into the Agency's programme. It is important to strengthen technical and scientific support, especially to the regulators, in the context of enhancing the global nuclear safety regime. The discussions clearly indicated that TSOs are seeking clarification with respect to their role and are requesting common guidance coordinated by the Agency.

11. More information on the conference is available on the Agency's website².

12. Several conference participants indicated an interest in having a follow-up conference in three years. In this context, the Japan Nuclear Energy Safety Organization has expressed its willingness to host the next conference.

¹ <http://www-pub.iaea.org/MTCD/Meetings/Announcements.asp?ConfID=143>

² <http://www-pub.iaea.org/MTCD/Meetings/Announcements.asp?ConfID=142>

B.3. International Conference on Environmental Radioactivity

13. The Department of Nuclear Sciences and Applications and the Department of Nuclear Safety and Security organized this conference, held in Vienna from 23 to 27 April 2007, in cooperation with the United Nations Scientific Committee on the Effects of Atomic Radiation (UNSCEAR), the South Pacific Environmental Radioactivity Association and two of the Agency's collaborating centres³. Approximately 250 participants from 75 Member States attended the conference.

14. The management and control of radiation fields and radionuclides in the environment for the optimum protection of the public or workers against health effects of ionizing radiation involves firstly sampling and/or measurement and then predictive modelling and radiological assessment to determine the significance of the measurements in relation to regulatory standards, followed by appropriate action when necessary. The conference considered all of these aspects and the inter-linkages between them. Sessions were devoted to the topics of regulation, sampling, measurement, quality, monitoring, and modelling and assessment.

15. The conference noted that, although the international safety standards for controlling the radiation exposure of the public due to radionuclides in the environment have a solid scientific foundation, there is a need for evolution and adaptation of some of the standards, especially those concerned with environmental aspects of emergency and existing exposure situations.

16. During the session on sampling, conference participants noted that International Commission on Radiation Units and Measurements (ICRU) Report 75, *Sampling of Radionuclides in the Environment*, which provides international guidance on sampling for environmental radioactivity monitoring and radioecology investigations, is starting to be used. However, there are still issues being raised concerned with the practicality of statistical tools in situations with environmental or practical constraints and the lack of resources to invest in statistically valid sampling programmes. In many areas of environmental radioactivity studies there is an urgent need for the harmonization of methodologies for sampling, measurement, analysis and reporting of data so that valid conclusions and comparisons can be made.

17. There was general acceptance that reference materials and their availability are key in ensuring quality in environmental measurements. There should be further development of the suite of reference materials to include naturally occurring radioactive material (NORM), additional and diverse media, and analytes. Quality assurance extends beyond laboratory measurements and the traditional proficiency testing approach should be broadened to include sampling strategies, assessment, software and models.

18. It was noted that some very large monitoring programmes have been established in Member States, some for compliance purposes, some for public dose assessment and some for public reassurance. There is a need for those responsible in Member States to review the current focus and objectives of their existing monitoring programmes to ensure that the most relevant sources of public exposure, such as NORM and effluents from medical installations, are adequately addressed and that the programmes remain useful and cost-effective.

19. More information on the conference is available on the Agency's website⁴.

³ Belgian Nuclear Research Centre (SCK•CEN) and the National Food Investigation Institute (NFII) of Hungary

⁴ <http://www-pub.iaea.org/MTCD/Meetings/Announcements.asp?ConfID=145>

B.4. International Conference on Knowledge Management in Nuclear Facilities

20. This conference was held in Vienna from 18 to 21 June 2007. A total of 212 participants and 20 observers from 42 Member States and ten international organizations attending the conference. The objectives of the conference were to take stock of the recent developments in nuclear knowledge management, to demonstrate and discuss the benefits of nuclear knowledge management in promoting excellence in operation and safety of nuclear facilities, to promote the use of nuclear knowledge management in the nuclear industry, and to provide insights and recommendations to the nuclear community. The conference built upon the International Conference on Nuclear Knowledge Management — Strategies, Information Management and Human Resources Development held in 2004 in France.

21. Conference participants noted that nuclear knowledge management can, inter alia, contribute to maintaining the core knowledge that must be in place to operate existing facilities safely and help assure the smooth and effective transfer of knowledge from the current generation to the next. It was also noted that many key nuclear organizations, including regulatory authorities, utilities, research and development organizations and vendors, have introduced and apply knowledge management as a corporate management approach with top-level commitment. At the strategic level, knowledge is now considered a key resource and many organizations now have formal policies on knowledge management. These policies often include human resource management, information management and process management aspects.

22. The main recommendation of the conference is that nuclear knowledge management should become an integral part of all nuclear activities at the project, corporate and national level. The conference also recommended that the Agency remain the global forum for advancing the use of nuclear knowledge management, continue to develop and provide guidance and assist in self-assessments and programme development, and extend nuclear knowledge management activities to regulatory bodies and TSOs.

23. Complete information on the conference is available on the Agency's website⁵.

C. Education and training in nuclear, radiation, transport and waste safety

24. Education and training in nuclear, radiation, transport and waste safety continues to be a high priority area of work in Major Programme 3. A common approach is used for a consistent implementation of the strategic plan endorsed by the General Conference in resolution GC(45)/RES/10.C. The focus is on a train-the-trainers approach, on the preparation and wide distribution of exemplary training material based on the Agency's safety standards, and support to postgraduate education. Technical cooperation projects, both national and regional, and safety networks are used as the principal means for effective delivery of training activities. The Agency's

⁵ <http://www-pub.iaea.org/MTCD/Meetings/Announcements.asp?ConfID=153>

education and training website⁶ was improved to present all the training materials organized in an accessible framework for the intended audiences.

25. Information about the training courses and materials was prepared and supplemented by training courses, seminars and workshops designed to the application of the Agency's safety standards and best practices. A training DVD has been prepared to reduce the high costs of providing separate training packages.

C.1. Nuclear installation safety

26. The Secretariat has adapted the strategy for education and training in nuclear safety with special focus on cooperation, knowledge sharing and training programmes based on the Agency's safety standards. Standardized training materials for use by lecturers and trainees, both in English and other languages, are also available.

27. A network of training officers amongst Nuclear Safety Standards Committee (NUSSC) regulators was established for ensuring and maintaining competence in regulatory bodies and Agency support for training programmes. A questionnaire was prepared to obtain feedback from NUSSC members on the effectiveness of Agency training, strategy and materials.

28. The ANSN Topical Group on Education and Training prepared a detailed work programme. A preliminary revision of the current training materials was performed to define a complete training package that will address the needs of regulatory bodies.

29. A two-week course on training assessment methodologies and the use of training materials developed by the Agency was successfully conducted in October 2006 in Saclay, France, for professionals from Europe and East Asia engaged in human resources development.

30. A two-week version of the Basic Professional Training Course on Nuclear Safety was conducted in Vietnam in November 2006. Local experts, using Agency training materials translated into the local language, gave most of the lectures. An additional course will be conducted in 2007 to strengthen the technical competencies of the national regulatory body.

31. Agency staff actively participated in the regional postgraduate course on nuclear safety organized annually by the Argentinean Nuclear Regulatory Authority.

C.2. Radiation safety

32. A steering committee, composed of representatives of Member States, continues to oversee the implementation of the strategic plan following General Conference resolution GC(45)/RES/10.C on education and training.

33. A detailed Education and Training Appraisal mission took place in Argentina, which has been a regional training centre for over two decades. The training centre was shown to have sustainable education and training programmes and this has led to actions being initiated towards establishing a long term agreement between the Agency and Argentina.

34. An inter-centre network between the Agency and the steering committee members (representing regional, collaborating and national training centres) has been established and is now operational. Currently, all standardized training material is loaded onto the network and a discussion forum has been created.

⁶ <http://www-ns.iaea.org/training/>

35. Four national train-the-trainer events were implemented during the reporting period and the Agency continues to develop training modules for practice-specific training. Modules on radiation protection in neutron monitoring, radiation protection in work place monitoring and radiation protection for lawyers were developed and submitted to steering committee members for review. More than 30 training packages on a wide range of radiation safety topics are now complete and have been validated by the steering committee. The six training packages for regulatory inspectors are now also available in Arabic, French and Spanish. The training packages for assessment of exposures due to external radiation and assessment of exposures due to intakes are now also available in Russian and Spanish.

36. To assist Member States in implementing the training of radiation protection officers, teaching material was developed for the core syllabus in line with the Agency's syllabus for radiation protection officers and supplementary modules on specific topics are being developed by the regional training centres.

37. A questionnaire aimed at assessing training needs was sent to Member States participating in the Agency's regional projects on upgrading radiation protection infrastructure, with 62 out of 95 Member States responding. Initial analysis of the data confirmed that there is a strong need for training in medical and industrial sectors.

38. The training material developed under the Agency RCA⁷ project "Distance Learning in Radiation Protection" is now pre-training learning material for the participants of the Agency's postgraduate educational course in radiation protection and the safety of radiation sources. The same material is also available in web format and is available for e-learning.

39. The Agency organized 21 regional training events relating to radiation, transport and waste safety within the framework of regional projects, national projects and regional cooperation agreements during the reporting period.

40. The annual postgraduate educational courses in radiation protection and the safety of radiation sources were held at the regional centres in Argentina, Belarus, Malaysia, Morocco and the Syrian Arab Republic.

41. Several regional training courses were conducted in 2006 on practical response to radiological emergencies, response of radiological assessors, medical preparedness and response, field trials of emergency response capabilities and preparation, and conduct and evaluation of exercises to test preparedness for nuclear and radiological emergencies. More than 200 trainees attended regional courses in China, Dominican Republic, Egypt, Greece, Indonesia, Islamic Republic of Iran, Japan and Republic of Korea. The Agency also supported national courses on emergency preparedness and response in Algeria, Chile, Mexico, Morocco and Tunisia.

42. During 2006, a standardized package covering control of radiation sources in medical and industrial practices was delivered to train regulators from all regions. The training packages have been revised to take into account the Code of Conduct on the Safety and Security of Radioactive Sources, the Guidance on the Import and Export of Radioactive Sources and the Categorization of Radioactive Sources, together with any other relevant new documentation and international standards and guidance. Similar packages have been developed on control of radiation sources in cyclotron facilities, radiation safety for lawyers and radiation safety for custom officers (the latter developed with the World Customs Organization). These training courses, which are available in all UN official languages, have been used by Member States to enhance the technical competence of regulatory staff.

⁷ Regional Cooperative Agreement for Research, Development and Training Related to Nuclear Science and Technology

C.3. Transport safety

43. The Agency, in cooperation with the Government of Malaysia, held a regional training course on the safe transport of radioactive material in Malacca, Malaysia, from 13 to 24 November 2006. Twenty-four students from 12 countries attended.

44. The purpose of the course was to provide comprehensive training on IAEA Safety Requirements TS-R-1: *Regulations for the Safe Transport of Radioactive Material 2005 Edition* (Transport Regulations) to those who bear the responsibility in their respective countries for ensuring implementation of and compliance with Agency and other international transport safety requirements. The course included lectures, practical exercises, discussions, simulated transport incidents with role-playing for proper response, and technical visits. It provided both theoretical and practical training in the scientific and technical bases for international recommendations, and their implementation. The subject areas covered included philosophy and provisions contained in the Transport Regulations and supporting guides and technical documents, implementation of the Transport Regulations in the codes of international regulatory organizations for specific transport modes and radiation protection concepts in relation to transport of radioactive material.

C.4. Waste safety

45. A network of centres of excellence in geological disposal was initiated in 2001. Through this network, training is provided to Member States on state of the art technologies for the design and development of geological repositories for high-level radioactive wastes. Moreover, the Agency coordinates research and development on subjects of common interest and value to Member States participating in the network. So far, more than 150 professionals from over 20 Member States have taken part in 11 training courses. Training falls within the following three major themes related to geological disposal: methodologies and fundamentals of geological disposal; social interactions and outreach; and numerical modelling.

D. Report of the Chairman of the Open-ended Meeting of Technical and Legal Experts for Sharing of Information as to States' Implementation of the Code of Conduct on the Safety and Security of Radioactive Sources and its supplementary Guidance on the Import and Export of Radioactive Sources (Vienna, 25 to 29 June 2007)

“1. An open-ended meeting of technical and legal experts for sharing of information as to States' implementation of the Code of Conduct on the Safety and Security of Radioactive Sources (the Code) and its supplementary Guidance on the Import and Export of Radioactive Sources (the Guidance), was held from 25 to 29 June 2007 at the IAEA Headquarters in Vienna under the chairmanship of Mr S. McIntosh (Australia).

2. The meeting was attended by 122 experts from 70 Member States of the IAEA (Albania, Algeria, Argentina, Armenia, Australia, Azerbaijan, Belgium, Benin, Brazil, Bulgaria, Burkina Faso, Cameroon, Canada, China, Costa Rica, Cote d'Ivoire, Croatia, Cuba, Czech Republic, Dominican Republic, Ethiopia, Finland, France, Germany, Ghana, Hungary, India, Indonesia, Iraq, Ireland, Italy, Japan, Jordan, Kazakhstan, Republic of Korea, Kyrgyzstan, Lebanon, Libyan Arab Jamahiriya,

Lithuania, Malaysia, Mali, Mauritania, Mexico, Mongolia, Morocco, Myanmar, Nicaragua, Niger, Nigeria, Norway, Pakistan, Palau, Philippines, Romania, Russian Federation, Slovak Republic, South Africa, Spain, Sweden, Tajikistan, Thailand, Tunisia, Turkey, Ukraine, United Arab Emirates, United Kingdom, United States of America, Uruguay, Venezuela and Vietnam) and 2 non-Member States of the IAEA (Cambodia and Burundi). The meeting was also attended by observers from the European Commission, the Organization for Security and Co-operation in Europe (OSCE) and the Food and Agriculture Organization (FAO). The Scientific Secretaries for the meeting were Mr I. Wheatley (Division of Radiation Transport and Waste Safety) and Mr W. Tonhauser (Office of Legal Affairs).

3. The meeting was opened by Mr Taniguchi, Deputy Director General of the Department of Nuclear Safety and Security. In his opening remarks, Mr Taniguchi recalled the success of the informal exchange of information on national approaches to controlling radioactive sources that took place at the International Conference on the Safety and Security of Radioactive Sources held in Bordeaux, France, from 27 June to 1 July 2005. He noted that the value of those presentations was recognized by the IAEA General Conference, and that the Secretariat was requested to undertake consultations with Member States with a view to establishing a more formalized process for a periodic exchange of information and lessons learned and for the evaluation of progress made by States towards implementing the provisions of the Code. Further to that request, the Secretariat organized an open-ended meeting of technical and legal experts from 31 May to 2 June 2006 to undertake such consultations. The participants in that meeting reached consensus on a mechanism for a voluntary, periodic exchange of information among States on their implementation of the Code and Guidance. That mechanism was subsequently endorsed by the IAEA Board of Governors and it provided the framework for this meeting.

4. The objective of the meeting was to promote a wide exchange of information on national implementation of the Code and Guidance. In line with the non-legally binding nature of the Code and the Guidance, participation in the meeting and presentation of papers was on a voluntary basis and the meeting was open to all Member and non-Member States of the IAEA, whether or not they had made a political commitment to the Code and/or to the Guidance.

5. During the opening session, there were reports from regional meetings in Latin America and South East Asia. After the opening, the meeting divided into three country groups (assigned on an alphabetical basis) to facilitate the voluntary presentation of papers. The country groups were chaired by Mr R. Gutterres (Brazil), Mr R. Jammal (Canada) and Mr M. Markkanen (Finland), with the assistance of Mr S. Evans, Ms C. Heinberg and Mr A. Wetherall from the IAEA Secretariat. Experts from 53 States presented papers on implementation of the Code and the Guidance. At the end of the meeting, the three country groups met in plenary to discuss the overall findings of the meeting. The key issues are summarised below.

Infrastructure for regulatory control

6. It was recognised that the establishment and maintenance of a single regulatory body, effectively independent of other functions with respect to radioactive sources, is one of the most important steps to the effective implementation of the Code of Conduct and its associated guidance on the import and export of radioactive sources. At the same time, participants stressed the importance of close working relationships between regulatory bodies and other bodies with responsibilities related to radiation protection and/or the safety and security of radioactive sources, such as customs authorities and security agencies.

7. The papers provided to the meeting demonstrated clear and widespread progress in strengthening legislative and regulatory infrastructure in the area of safety of radioactive sources. At the same time,

the availability of sufficient resources and expertise were an ongoing challenge for the implementation of that legislative and regulatory infrastructure in many States.

8. However, it was evident that progress in development of such infrastructure in the area of security of radioactive sources was not as even, with some Member States, from all regions, yet to fully reflect the provisions of the Code in this area in their legislation. Participants looked forward to the finalization and publication of the IAEA Security Guide on the Security of Radioactive Sources, whilst recognizing that there would be a need to tailor the application of the guidance to national circumstances and to integrate security measures with safety regulations. Participants recognized that the development and enhancement of security regulation and security culture and their integration into the existing safety regulatory structure need to be done in a balanced manner that does not unduly restrict the beneficial uses of radioactive sources. There may often be a need for regulatory bodies to seek the advice of specialized security experts.

9. Participants welcomed the availability of assistance from the Agency and from other international and regional programs in developing a legislative and regulatory infrastructure. Such assistance has proven to be very valuable to many States. In particular, the Agency's RaSSIA missions and Model Projects had assisted States to improve their legislative and regulatory infrastructure. At the same time, it was noted that in such cases, it was important for the States benefiting from such programs to also develop national capabilities in this area.

10. There was some discussion of the relationship between the Code of Conduct and the European Union (EU) legislation, such as the High Activity Sealed Source (HASS) Directive. Such legislation is binding on EU Member States, whereas the Code is not legally binding. At the same time, it was recognized that EU legislation (such as the HASS Directive) is not as detailed with respect to import/export outside the EU and security of radioactive sources as are the Code and the Guidance. It was noted that in order to fully implement the Code and Guidance, some EU Member States have already supplemented EU legislation with additional national legislation in the areas mentioned above.

11. Some participants suggested that in order to facilitate the implementation of the Code, the Secretariat should develop a document mapping the provisions of the Code against relevant IAEA standards.

Facilities and services available to the persons authorized to manage radioactive sources

12. Many participants advised that their States had established dosimetry services for determining workers' occupational dose, health surveillance and calibration facilities for equipment used for radiation protection, and had installed appropriate security devices in facilities housing high activity radioactive sources. Some other participants advised that their States do not have appropriate radiation protection equipment for the purpose of monitoring, detection, handling and measurement, or had not upgraded security at facilities where high activity radioactive sources may be used.

13. It was noted that multilateral and bilateral support may be available to States for the provision of such equipment, including the upgrading of security at high risk facilities. Such support needs to be delivered in a manner which is sustainable by the recipient state.

Training of staff in the regulatory body, law enforcement agencies and emergency service organizations

14. The importance of training programmes — covering both safety and security — for staff of the regulatory body and other relevant government agencies (such as customs officials, law enforcement officers and staff of emergency response agencies) was universally recognized. In practice, however, in some States relevant training had not yet been provided to the staff of those other relevant government agencies. It was noted that the Agency and regional or bilateral programmes have a major

role in preparing and delivering training courses and making materials and expertise available. National training programmes conducted by national experts with full participation of representatives of all relevant institutions in a State was vital in the longer term in order to ensure sustainability of the expertise within the country. To that end, participants supported the use of a '*Train the trainer*' approach.

15. The importance of systematic and ongoing training programmes for regulatory body staff was emphasized. Such training might be undertaken in cooperation with local universities and other educational institutions. Retraining should be undertaken when regulations are revised and/or on the basis of training needs analysis.

Experience in establishing a national register of radioactive sources

16. Participants recognised the importance of establishing and maintaining a national register of Category 1 and 2 radioactive sources as recommended by the Code. Many States have established such a national register, but resource and other challenges have meant that some are only now starting to do so, and some have not yet started. Some participants noted that tracking systems formed an important component of their national registers. Participants noted new solutions which are taking advantage of modern computer technology; e.g. user accessible web-based systems, common systems with Customs and GPS-tracking. Participants also recognized the potential benefits of a national register as part of a comprehensive information system (e.g. the IAEA's Regulatory Authority Information System - RAIS, or other software systems) supporting a wide-range of regulatory functions.

17. It was considered important that individuals responsible for inputting information into the register receive adequate training and have sufficient experience and knowledge about radioactive sources. Participants recognized the potential benefits of methods for ensuring data accuracy, including cross-checks between notifications from users and suppliers, inspections, inventory campaigns.

National strategies for gaining or regaining control over orphan sources, including arrangements for reporting loss of control and to encourage awareness of, and monitoring to detect, orphan sources

18. Radioactive sources may have become orphaned for many reasons. When such sources are found, the responsibility for managing such sources within a country is sometimes unclear, and national policies need to be established.

19. Many participants reported that their States have established services for searching for and regaining control over orphan and found sources, although in many cases this searching would be more effective if additional resources were available, especially in terms of trained staff and monitoring equipment. It was noted that multilateral and bilateral advice and support is available for source recovery activities. Technical information about types of radioactive sources and associated devices can be of benefit to a range of organizations and bodies that may encounter orphan sources. It was recognized that sometimes it is difficult to balance the need to share such information with the need to protect sensitive information about the source.

20. Several participants reported that their States had detected sources at national borders, particularly orphan sources in shipments of scrap metal. Dealing with such situations however was done very much on a case by case basis. Participants noted that the management of orphan sources found at borders should be consistent with overall safety and security objectives, particularly the need to ensure that sources were not re-orphaned.

21. Several participants observed that since the monitoring of scrap metal is an important means of detecting orphan sources, it was important that it be carried out in accordance with the national legislative and regulatory framework. However, in most cases scrap metal dealers are not regulated by the same national body that regulates radioactive sources. Nevertheless, it was considered to be clearly in such dealers' commercial interest to install radiation monitoring equipment at the entrances to their facilities, and many had done so.

22. Some participants recognized the usefulness of the IAEA's illicit trafficking database (ITDB), and called upon all States to report relevant incidents through this reporting system.

Approaches to managing sources at the end of their life cycles

23. Many participants indicated that the return of sources to the supplier at the end of their useful life was a condition of authorization to hold such sources in their States. It was noted that in some cases, national legislation of some other States may hamper or prevent the return of these sources to their country of origin. Such States could consider changing their legislation to facilitate the return of sources. There may also be problems where a supplier has gone out of business, and sources which were imported prior to the coming into force of such requirements also posed a challenge.

24. Alternative approaches to managing sources at the end of their life cycles include recycling, re-selling, storing or disposing of sources. In the latter cases, many States do not have long-term storage or disposal facilities available. Such States often require the authorized user to store the source indefinitely on their own premises; however, this poses obvious ongoing safety and security risks. The development of central storage facilities capable of dealing with high activity sources was recognized as being desirable.

25. Participants observed that, consistent with paragraph 22(b) of the Code, some States have introduced a requirement for financial provision for final disposal as a condition of authorization. However, it has proved difficult to determine what the amount of such financial provision should be, and such schemes are therefore not currently widespread.

Experience with implementation of the import and export provisions of the Code and the Guidance on the Import and Export of Radioactive Sources

26. The import/export provisions of the Code and the Guidance form an important part of the global regulatory infrastructure for radioactive sources. All States are potentially exporters of radioactive sources, even if only to return a disused source to its manufacturer. It is therefore important that States establish systems within their legislative and regulatory framework to control exports as well as imports. It was recognized that the cooperation and coordination of relevant national agencies, such as customs, immigration, intelligence and other security agencies is necessary.

27. The discussion highlighted the importance of States' nominating and notifying to the Agency national points of contact as a central part of those systems to facilitate the export and/or import of radioactive sources, further to paragraph 4 of the supplementary Guidance. Where such contact points have been nominated and actively responded to communications from exporting States, this has facilitated implementation of the Guidance. On the other hand, delays and difficulties may occur with respect to export and/or import of sources, either if the point of contact has not been nominated, if the details of the point of contact are incomplete or inaccurate or if the point of contact is not fully aware of his or her role and responsibilities. If States have differing regulatory bodies and points of contact for parts of their territory or autonomous regions, such information should be provided to the Agency. Some States have up to four points of contact, and sometimes it is not clear what the division of work is. It was highlighted that there is no requirement for States to make a commitment to the Code and/or the Guidance prior to the nomination of a point of contact. It was recommended that nominations of

national point of contact (preferably by position rather than name), their responsibilities if there is more than one within a State, and any changes to this information should therefore be notified promptly to the Agency, so that it may continue to maintain a list of State points of contact further to paragraph 19 of the supplementary Guidance⁸. Some participants suggested that the Secretariat could verify the details of the points of contact on a periodic basis.

28. Participants noted that the practical implementation of the Guidance may be facilitated by widespread use of the notification and consent forms available to points of contact on the Agency's secure web page.

29. It was noted there was some uncertainty regarding the meaning of 'consent' versus the meaning of 'authorization' in relation to the export of Category 1 sources. Participants noted that these are two separate requirements: not only does the importing State need to consent to the import of the source, it also has to provide evidence that the intended recipient has the requisite authorization to hold the source.

30. Some participants suggested that it would be useful to hold an international meeting to harmonize the implementation of the Guidance. Some participants suggested that it could be useful to share information on the reasons why import or exports were not authorized in particular cases, and the cases when they were authorized under 'exceptional circumstances'. Participants noted that there is currently no common approach by which an exporting State assures itself that the importing State is technically and structurally competent to receive Category 1 or 2 sources.

Conclusions

31. A number of conclusions were reached:

- 31.1. There is widespread international support for the Code and the import/export Guidance. States that have not yet made a political commitment to the Code or the Guidance were encouraged to consider doing so. It was noted that a political commitment to the former did not automatically equate to a political commitment to the latter — although it was possible to make a commitment to both documents in a single communication to the Director-General.
- 31.2. The adoption and implementation of the Code by States, and the Agency's technical cooperation program have produced significant improvements in regulatory infrastructure and capability in relation to radioactive sources in many States.
- 31.3. In relation to the import and export of Category 1 and 2 sources, many States have already provided national points of contact (POC) to the Secretariat, and this information is available on the IAEA webpage dedicated to the Code. It was recognized that this information is of mutual benefit to both importing States and exporting States, and all States are encouraged to provide their POC's to the Secretariat and to inform it of any future updates or changes to that information.
- 31.4. The establishment of a national registry of sources is an essential element of the regulatory control process and it should be given high priority.
- 31.5. Orphan sources detected at national borders need to be managed in a safe and secure manner. This area of concern would benefit from further multilateral discussions.

⁸ <http://www-ns.iaea.org/tech-areas/radiation-safety/code-of-conduct.htm>

- 31.6. The importance of sustainability of implementation of all areas of the Code was emphasised. Such sustainability required the development of national expertise within all States, and ongoing international, multilateral and bilateral support. Some participants encouraged the Agency to monitor ongoing progress in this respect.
- 31.7. Participants agreed that the meeting achieved the objective of facilitating the exchange of information between States. The self-assessment process involved in the preparation of papers had also been of benefit. Participants appreciated the open nature of the discussions, and encouraged the Secretariat to hold similar meetings in the future perhaps on a triennial basis, subject to availability of funds.
32. In relation to funding the meeting, the Chairman's report of the 2006 meeting of technical and legal experts noted that the Regular Budget of the Agency did not contain the funds necessary to support the proposed information exchange mechanism, and that it would need to be largely supported by extra-budgetary funding. Member States were encouraged to positively consider providing such funding on a voluntary basis, and as noted in Mr Taniguchi's opening remarks, Canada and the USA had provided the extra-budgetary funding to the IAEA to specifically support the participation of experts from States that otherwise could not have attended the meeting. If the meeting is to be repeated in the future, then Member States need to consider how best to fund the participation by experts.
33. As foreshadowed in the mechanism approved by the Board, experts suggested that the Director-General submit this report to the Agency's policy-making organs for their information.”