

# **Technical Meeting on Implementation of the Code of Conduct on the Safety and Security of Radioactive Sources with Regard to Long Term Strategies for the Management of Disused Sealed Radioactive Sources**

**Vienna, Austria, 27 February to 1 March 2012**

## **Report of the Chairman**

1. The *Code of Conduct on the Safety and Security of Radioactive Sources* (Code of Conduct) provides guiding principles for Member States to achieve and maintain a high level of safety and security of radioactive sources. An important element of the Code of Conduct is for Member States to ensure that arrangements are made for the safe management and secure protection of radioactive sources once they have become disused. The International Atomic Energy Agency (IAEA) has organized several international workshops and technical meetings to promote safe and secure management of disused sources with emphasis on sustainable long-term management. Proceedings from selected workshops and technical meetings can be found at two IAEA webpages:
  - <http://www-ns.iaea.org/tech-areas/radiation-safety/code-conduct-info-exchange.asp?s=3>
  - <http://www-ns.iaea.org/tech-areas/waste-safety/workshops/lisbon-dsrs2010.asp?s=3&l=24>
2. From 27 February to 1 March 2012, the IAEA held a Technical Meeting on Implementation of the Code of Conduct with Regard to Long Term Strategies for the Management of Disused Sealed Radioactive Sources at the IAEA Headquarters in Vienna, Austria. The meeting was organized by the IAEA Division of Radiation, Transport, and Waste Safety (NSRW) with input from the Division of Nuclear Fuel Cycle and Waste Technology and the Office of Nuclear Security.
3. The purpose of the meeting was to promote the safe and secure management of disused sources, with emphasis on sustainable and comprehensive long-term management strategies, and to build on recommendations from the 2011 Technical Meeting on Developing Strategies for Assisting Member States in the Management of Disused Sealed Radioactive Sources, Vienna, Austria; the 2010 International Workshop on Sustainable Management of Disused Sealed Radioactive Sources, Lisbon, Portugal; and the 2009 Technical Meeting on Implementation of the Code of Conduct on the Safety and Security of Radioactive Sources with Regard to Long Term Strategies for the Management of Sealed Sources, Vienna, Austria.

## **Meeting Programme**

4. The Programme was organized into topical sessions on IAEA Perspectives on Safety and Security of Disused Sources; National Experiences with Disused Sources; Review of Recommendations from Previous Meetings; and Options for Long-Term Management of Disused Sources (Return of Disused Sources to Commercial Supplier, Return of Disused Sources to Country of Origin [Repatriation], Long-Term Storage of Disused Sources, and Disposal). The Programme also included working group

sessions on Return of Disused Sources to Supplier and Repatriation; Dedicated Storage Facilities<sup>1</sup> and Disposal Capabilities for Disused Sources; Comprehensive Strategy for End-of-Life Management of Disused Sources; and National Strategies for Regaining Control over Orphan Sources and Improving Control over Vulnerable Sources (including disused sources). The working group topics were identified on the second day of the meeting in consultation with meeting participants.

5. The meeting was attended by 148 experts from 62 Member States of the IAEA (Afghanistan, Albania, Algeria, Argentina, Belarus, Bosnia and Herzegovina, Bulgaria, Burkina Faso, Cambodia, Canada, Chile, China, Croatia, Cuba, Czech Republic, Democratic Republic of the Congo, Ecuador, Egypt, Finland, France, Georgia, Germany, Ghana, Hungary, India, Indonesia, Islamic Republic of Iran, Italy, Japan, Latvia, Lebanon, Lithuania, Madagascar, Mali, Mexico, Morocco, Mozambique, Niger, Nigeria, Pakistan, Panama, Poland, Qatar, Republic of Korea, Republic of Moldova, Russian Federation, Senegal, Serbia, Sudan, Sweden, Switzerland, Tajikistan, The former Yugoslav Republic of Macedonia, Turkey, Ukraine, United Kingdom, United Republic of Tanzania, United States of America, Uruguay, Vietnam, Yemen, and Zimbabwe) and one non-Member State of the IAEA (Timor Leste). The meeting was also attended by observers from the European Commission, the Food and Agricultural Organization of the United Nations, and the International Source Suppliers and Producers Association (ISSPA). The Scientific Secretaries for the meeting were Ms Monika Kinker (IAEA NSRW-WES) and Mr Eric Reber (IAEA NSRW-RIT). The meeting was chaired by Mr James Joyce (United States).
6. Mr Phil-Soo Hahn, Director of Radiation, Transport and Waste Safety (NSRW), opened the meeting. Mr Hahn recalled some of the historical accidents involving orphan sources and emphasized that disused sources warrant special attention because they present the largest pool of potential orphan sources. To prevent disused sources from becoming orphan sources, he called on each Member State to develop and implement comprehensive domestic solutions for end-of-life management of radioactive sources, with the expectation that they may remain in the State indefinitely. Mr Hahn described the IAEA's continued activities in facilitating interaction between Member States in the context of the Code of Conduct and the *Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management* (Joint Convention). He recalled previous IAEA-related meetings, such as those held in Vienna in 2011 and 2009 and in Lisbon in 2010 (paragraph 3). He noted that the high number of participants at the meeting demonstrates a strong commitment to establishing a global regime for strengthening the safety and security of radioactive sources. Mr Hahn announced that the Government of the United Arab Emirates has committed itself to host an international conference in Abu Dhabi on 27-31 October 2013 to follow up on the findings of the International Conference on the Safety and Security of Radioactive Sources, held in Bordeaux, France, in 2005. In closing, Mr Hahn thanked the United States for providing an extra-budgetary contribution to the IAEA specifically to support participants from Member States that otherwise could not have attended the meeting.
7. Twenty-one presentations were given at the meeting by Members States, IAEA, ISSPA, and four working group sessions were organized under themes related to strategies for safe and secure long-term management of disused sources. The content of the presentations, key issues discussed, and associated findings and recommendations are summarized below.

---

<sup>1</sup> In this report, 'dedicated storage facility' means a facility that has been established for the purpose of storing disused sources and that may contain disused sources from multiple users.

## Findings and Recommendations

### IAEA Perspectives on Safety and Security of Disused Sources

8. The IAEA informed participants on activities, guidance, and assistance for safe and secure management for disused sources. Participants acknowledged that sustainable management of disused sources needs a national policy and strategy, an adequate legal and regulatory framework, and adequate resources and infrastructure. To help Member States meet these objectives, participants recognized that the IAEA has developed extensive safety standards, security guidance and technical guidance, technological assistance plans, and other resources for disused sources management, some of which is contained in radioactive waste management guidance.

### Review of Recommendations from Previous Meetings

9. Participants were informed on completed and planned actions by the IAEA and Member States to address findings and recommendations from the 2009 Code of Conduct meeting, 2010 Lisbon workshop, and the 2011 International workshop (paragraph 3). For example:
  - a. In 2011 and 2012, respectively, the IAEA published safety standards on National Strategy for Regaining Control over Orphan Sources and Improving Control over Vulnerable Sources (SSG-19), and on Control of Orphan Sources and Other Radioactive Material in the Metal Recycling and Production Industries (SSG-17). Furthermore, training courses and equipment are provided to Member States in support of orphan source search and recovery programmes by the IAEA and through bilateral arrangements.
  - b. An Ad Hoc Group of Major Supplier States, with the IAEA as an observer, has been meeting annually since 2010 to discuss repatriation of vulnerable sources, harmonization of import/export exchange, and other items of particular concern to major supplier states. Members of the Ad Hoc Group informed meeting participants that they are developing best practice documents for source repatriation and import/export controls. Paragraphs 16-21 of this report discuss the results of the working group session on return of disused sources to suppliers and repatriation.
  - c. The IAEA announced that it is in the final stages of publishing the revised Guidance on the Import and Export of Radioactive Sources (Guidance). In September 2011, the Guidance was approved by the IAEA Board of Governors and endorsed by the IAEA General Conference. To assist Member States in the application of the Guidance, the IAEA maintains an international directory of national points of contact for export and import of radioactive sources:  
<http://www-ns.iaea.org/tech-areas/radiation-safety/code-of-conduct.asp?s=3&l=22>
10. Participants were informed that previous findings and recommendations on recycling/reuse, repatriation, transportation, storage, and disposal of disused sources continue to be relevant for promoting safe and secure end-of-life management of disused sources. The IAEA conveyed that these open issues were specifically included on the agenda for this Code of Conduct meeting, including the working group sessions, for further discussions on potential solutions.

### National Experiences with Disused Sources

11. Participants noted that Member State programmes for end-of-life management of disused sources are in various stages of development. Member States that generate large quantities of radioactive waste, e.g., States with nuclear fuel cycle facilities including nuclear power plants, generally have more

comprehensive disused sources management programmes. These programmes were noted as having mature legislative and regulatory frameworks, national source tracking systems, orphan source identification and recovery capabilities, and end-of-life management capabilities, including commercial recycle/reuse, safe and secure storage, and disposal. However, even in those Member States, it was reported that not all disused sources can be disposed, recycled, or reused (paragraph 15). End-of-life disused source management programmes for Member States without nuclear industries generally focus on orphan source identification and recovery; and disused source storage, recycle/reuse, repatriation, and return to supplier. It was noted that many disused sources remain in storage because of difficulties in implementing other end-of-life options (paragraphs 12, 13, and 15). For example, a participant indicated that there is currently no commercial recycle/reuse option for disused radium-226 sources. Several member states reported accomplishments in recovering and conditioning orphan sources, including joint projects with the IAEA and donor Member States.

### **Options for Long-Term Management of Disused Sources**

12. Return of Disused Sources to Commercial Supplier. The meeting reported that recycling or reuse of disused sources is generally the preferred option provided it is cost-effective and technically feasible. A one-for-one source exchange of a disused source being returned to the supplier from a user's facility when a new source is delivered is a common industry practice that limits the number of disused sources that may otherwise be abandoned. Participants confirmed that transportation issues continue to be a primary challenge to the reuse and recycling of disused sources, as well as other end-of-life options (e.g., repatriation). Aspects of transportation issues include the high cost of transportation, lack of a valid special form and/or device certificate, incomplete source characterization, shortage of certified type B transport containers, and availability of carriers willing to transport radioactive material. It was also reported that some States have policies that prohibit the import of disused sources that did not originate from their territory. Meeting participants indicated a need for clarification of the term "country of origin", as discussed in paragraph 13. States noted that many States prohibit importation of radioactive waste, including any disused sources classified as radioactive waste (not all Member States classify disused sources as radioactive waste). Several Member States reported that, before a source can be imported into their State, the prospective source user and the manufacturer must enter into a contract that requires the manufacturer to accept the return of the source at the end of its useful life. It was also reported that this contract is a pre-condition for the issuance of a license to import and use the source in some States. ISSPA representatives communicated industry's position that disused sources can often be returned to manufacturers, but that manufacturers typically do not cover the return costs. ISSPA representatives also informed participants that industry encourages source users to consider financial costs associated with end-of-life management of radioactive sources at the time of procurement. Meeting participants suggested that ISSPA develop a best practice document on return of sources to manufacturers. Paragraphs 16-21 discuss the results of the working group session on return of disused sources to suppliers and repatriation.
13. Return of Disused Sources to Country of Origin (Repatriation). It was reported that several supplier States have repatriation programmes. Participants noted that the IAEA does not define the term "repatriation." The meeting was informed that the Ad Hoc Group is developing a document that defines "repatriation" as "*unique arrangements for return of previously exported disused radioactive source(s) to a Supplier State with special support or facilitation from that Supplier State's government; it is not considered shipment of a source to a commercial manufacturer for recycling or reuse*". Some participants expressed that repatriation should be the last option for disused sources and only if recycling or return to the commercial supplier or sustainable options within the residing State are unavailable. It was further noted that repatriation may be necessary to ensure that vulnerable

sources do not present a safety and security hazard. The same transportation issues affecting reuse and recycling (paragraph 12) also affect repatriation or sources. Participants noted that there are different understandings of the term “country of origin.” Also, ambiguity exists for sources containing components from multiple States.

14. Long-Term Storage of Disused Sources. Placement of disused sources in dedicated storage facilities is an important component of a comprehensive end-of-life management strategy. Member States reported progress in developing regulatory programmes and infrastructure for dedicated storage facilities. Some achievements were accomplished with technical assistance from the IAEA and donor States. It was noted that some States place limits on the amount of time a user may keep a disused source at their facility. Surpassing the time limits may result in fines or penalties by the regulatory authority. It was noted that this regulatory approach may successfully discourage accumulation of disused sources in onsite storage for prolonged time periods when return to supplier or other end of life options are unavailable. However, participants indicated that many sources remain in onsite storage indefinitely due to existing challenges with other end-of-life management options. The sustainability of dedicated storage facilities varies from State to State. To avoid undue burden on future generations, meeting participants reported that long-term storage is not a permanent solution to disused source management, especially for sources with longer half-lives. Industry representatives commented that long-term storage is also not a realistic option for source manufacturers due to liability concerns. It was noted that predisposal management of disused sources should take into account future management steps, including transport and disposal. Paragraphs 22-25 present the results of the working group session on dedicated storage facilities and disposal capabilities for disused sources.
15. Disposal of Disused Sources. Participants discussed disposal technologies and agreed that disposal, where available, provides a sustainable end-of-life option for disused sources. Member States with large volumes of radioactive waste generally have existing or planned disposal facilities, although not all disused sources can be disposed of at these facilities. Participants commented that near surface disposal is not always an option for disused sources containing higher concentrations of long-lived radionuclides due to potential long term safety issues (e.g., human intrusion). Meeting participants communicated that one of the challenges for siting a disposal facility is obtaining acceptance by the public, legislative bodies, and regulatory agencies. It was suggested that an effective public outreach strategy may help those States seeking to develop disposal capabilities. Participants noted that the primary disposal methods currently used for disused sources are near surface facilities (e.g., trenches, vaults) and geologic repositories. It was acknowledged that the appropriate method of disposal for disused sources should consider the inventory of sources in a State and their characteristics. The Borehole Disposal of Sealed Radioactive Sources (BOSS) concept may be an attractive disposal option for many States, particularly States with relatively small inventories of radioactive waste. A representative of the IAEA informed that the technology is designed to be cost-effective, sustainable, safe, secure, and can be installed with commercially available equipment and materials. Participants were also informed that the BOSS system is supported by a comprehensive set of IAEA safety guidance and extensive external review. One meeting participant informed on the status of a proposed BOSS project; it was also reported that other Member States are considering whether to pursue the BOSS technology. Paragraphs 22-25 present the results of the working group session on dedicated storage facilities and disposal capabilities for disused sources.

## Working Group Sessions

### Working Group: Return of Disused Sources to Supplier and Repatriation

16. Working group participants acknowledged that repatriation should only be considered if commercial return to supplier, reuse/recycling, safe and secure storage, or disposal in the importing State is unavailable. Working group participants indicated a particular interest in establishing a common definition of "country of origin" in the framework of repatriation. For commercial reuse/recycling considerations, participants denoted that country of origin is the State from which the source was formerly exported. For purposes of repatriation, there may be broader interpretations, and it was noted that States can self-identify as the country of origin. For purposes of repatriation, the country of origin may be defined or identified when repatriation is being considered (see also paragraph 13). Working group members proposed that the IAEA, in cooperation with ISSPA, should compile a list of commercially available recycle options and make this information available to Member States.
17. The working group noted that port authorities and carriers often prohibit shipments of disused sources, even with an approved container and appropriate import/export licenses. Working group participants recommended that the IAEA (via the International Steering Committee on Denial of Shipments and other mechanisms) should continue its outreach to ports, carriers, and the general public to allow shipments of radioactive sources. Several working group participants suggested the IAEA consider developing Type B(U) containers to provide a level of assurance to Competent Authorities and that Competent Authorities recognize (or at least more readily revalidate) unilateral container certifications issued by another Competent Authority. Several working group participants also suggested working to maintain special form and Type B status (perhaps through addressing return of disused sources specifically in the IAEA Safety Standard Regulations for the Safe Transport of Radioactive Material, TS-R-1) in anticipation of return shipments in several decades. Other working group participants countered that Special Arrangements could be used to achieve this. Further engagement with the Transport Safety Standards Committee was proposed.
18. Working group participants suggested that the IAEA inform at the next Code of Conduct meeting on the International Steering Committee on Denials of Shipments and the draft Code of Conduct on the Transboundary Movement of Radioactive Material Inadvertently Incorporated into Scrap Metal and Semi-Finished Products of the Metal Recycling Industries.
19. Some importing States have license requirements that imported sources be returned to the manufacturer at the end of their useful life. However, States generally do not have financial assurance requirements in place that address the high costs associated with the end-of-life management of disused sources. Industry representatives indicated that they disagree with regulatory requirements for contractual agreements between the end user and the supplier that establish a guarantee by the supplier to take back a source once it becomes disused. The industry representatives pointed out that there may be regulatory restrictions (current or future) that prohibit the return of the disused source to the supplier, and suggested that it may be more appropriate to require that the end user provide financial assurance to ensure that the disused source is properly managed at end-of-life.
20. It was acknowledged that, when a source is returned to a supplier in a different State or is repatriated, the State where the source has been imported to becomes the exporting State and must follow the Code of Conduct and the Guidance. Working group participants suggested that Member States complete the new Questionnaire when the revised Guidance is published.
21. One working group participant elaborated on the concept of developing a disused source credit system based on the international carbon (CO<sub>2</sub>) system. Disposing of additional sources in existing

disposal facilities may only represent an incremental cost for the site. Industry representatives saw benefit toward simplifying and reducing costs associated with transport between borders. Working group participants identified potential difficulties with the concept, such as determining who would pay the tax and whether they would be reimbursed with a credit later, the multinational nature of source production, negative connotations associated with labeling sources "pollutants," equities of States with disposal sites, impact on State commitments under the Joint Convention, and potential public concerns. Working group participants considered implementation ideas such as assigning different values to different activities and isotopes, credits for the use of alternative technologies, having one Supplier State dispose of sources from another in their State in exchange for the other State doing the same, and the use of bilateral agreements versus international instruments. The working group agreed that the use of this potential alternative should not replace the preferred option of commercial return to the manufacturer.

#### Working Group: Dedicated Storage Facilities and Disposal Capabilities for Disused Sources

22. Working group participants reported that the placement of disused sources in dedicated storage facilities is current practice in many States. Working group participants noted that the number of disused sources in Member States vary significantly, with the majority of disused sources consisting of cobalt-60, cesium-137, and radium-226. While working group participants were informed that some companies do recycle sources (e.g., cobalt-60 and americium-241), it was noted that, even with the options of recycling and repatriation, disposal options must still be developed. It was noted that placement of disused sources in a dedicated storage facility is often a necessary step in the long-term management of disused sources.
23. Working group participants noted that the IAEA Safety Standards address the issue of disused sources management, but that practical advice and examples are also needed. The working group participants encouraged the IAEA to support efforts of States toward disposal by disseminating examples of and providing training on good practices in the area of disposal. Working group participants also encouraged the IAEA to consider developing an international source/device transport container design and qualification.
24. Working group participants noted that disposal remains an unresolved issue in most States, with participants reporting significant variations in the progress being made towards disposal of disused sources. Among the causes for the lack of progress in disposal, participants noted limited public acceptance, insufficient funding, and a need for practical examples of strategies for determining suitable disposal options.
25. Participants suggested that the IAEA consider developing a technical document on disused source disposal that provides a methodology for choosing disposal options in consideration of volume, radiological properties, and other characteristics of disused sources, as well as examples of strategies for determining suitable disposal options.

#### Working Group: Comprehensive Strategy for End-of-Life Management of Disused Sources

26. The working group recognized there is no single comprehensive end-of-life strategy applicable for all States. The working group participants noted that strategies will reflect variations in: (i) the maturity of legislative and regulatory system; (ii) the presence of a nuclear power programme; (iii) the inventory and the characteristics of disused sources in the State; (iv) the financial and human resources available; and (v) whether the State is a supplier of radioactive sources. Working group participants commented that disused sources are likely to be the most important consideration with

regard to radioactive waste management in States without nuclear power programmes. It was noted that for some States with a nuclear industry, it can be a challenge to ensure that sufficient priority is given to disused sources.

27. For a State with disused sources and no or a limited nuclear industry, the group recommended the implementation of a comprehensive strategy based on a hierarchical structure consisting of an overarching policy, a management strategy, a regulatory framework, and operational facilities. The overarching policy relies on political commitment to deliver the rest of the strategy; a declaration of the fundamental objectives that the policy is trying to achieve; and an expression of the State's policy on financial obligations for end-of-life management. A major challenge was identified in the case of States without sufficient political commitment, accompanied by an absence of government funds to deal with disused sources.
28. The management strategy should tier from the overarching policy and address core issues such as end-of-life options and mechanisms to fund those options. Working group participants indicated that different strategies are likely to be needed for: (i) disused sources that were formerly orphan sources and have been collected by government intervention or other means; (ii) disused sources on licensed sites that are managed by licensee; (iii) sealed radioactive sources now in use but which will become disused; and (iv) sources not yet imported but which are potential disused sources in the future. Working group participants recommended that risk management principles should underpin these strategies.
29. Working group participants identified a number of common elements in existing regulatory frameworks of their States including: (i) placing responsibility on licensees for management of disused sources that they have used; (ii) specifying a hierarchy of options at end-of-life; (iii) providing for Government intervention in the case of orphaned sources; and (iv) recognizing that a national register of disused sources is an important regulatory tool. Working group participants noted a number of challenges in the regulatory area including (i) application of consistent regulations to each end-of-life option (which considers both licensing of the activity and inspection/enforcement by the regulator); (ii) ensuring that end-of-life regulation is joined up with regulation of other stages in the life cycle of a source (e.g., import/export regimes); (iii) optimum time limits for storage of sources before removal for disposal; and (iv) contingency plans in the event that a source supplier refuses to take these sources back.
30. Regarding operational facilities for end-of-life management of disused sources, based on participant comments, most States appear to rely primarily on a combination of on-site storage by users and some form of dedicated storage facility. In some States, such storage facilities are not adequately safe and secure. It was noted during the plenary discussions that many countries have no dedicated storage facility. Only a few States have adequate disposal facilities for disused sources. Working group participants communicated that technical assistance and co-operation from the IAEA is of great importance in helping States strengthen their storage and disposal capability. Of particular interest is the current IAEA initiative concerning inter-regional technical cooperation projects for waste management in States with small radioactive waste inventories (including disused sources).

Working Group: National Strategies for Regaining Control over Orphan Sources and Improving Control over Vulnerable Sources (including disused sources)

31. Regarding formal national strategies for regaining control over orphan sources and improving control over vulnerable sources including disused sources, of the 14 participants in the working group, two participants indicated that their States have such national strategies in place; two indicated that their

States have developed draft national strategies and ten indicated that their States do not have a national strategy in place.

32. Impediments to the development of such national strategies that were identified by the group included funding limitations, insufficient staffing and other resources, lack of political will, insufficient training of staff, inadequate equipment, and the absence of necessary laws and regulations.
33. The working group found that the international community could advance the development and implementation of such national strategies by encouraging regional cooperation and information exchange among States, holding training courses, and through the development of guidance documents concerning lessons learned. Participants recommended the development of a 'roadmap' or flowchart that identifies all key references in the Code of Conduct, Joint Convention, Safety Standards and the Nuclear Security Series pertaining to orphan and disused sources.
34. The working group suggested that the IAEA could provide more training to assist member states to identify and recover orphan and disused sources. The IAEA should consider the provision of expert missions to States to assist with the development of a national strategy for regaining control over orphan sources and improving control over vulnerable sources. Expert missions could also provide assistance in the development of new laws concerning orphan and disused sources.
35. Regarding border monitoring, participants in the working group commented that not all points of entry and not all cargo are being monitored for the presence of radioactive materials. Lack of funding, inadequate control frameworks and the absence of agreements between States that engage in trade were considered impediments to effective border monitoring and to managing radioactive material that is discovered in a safe manner. It was suggested that the provisions of the Metal Recycling Code of Conduct that is being developed could assist with the resolution of radioactive sources that are incorporated with scrap metal when such material is discovered through border monitoring.
36. There are a variety of ways that States conduct campaigns to search for, and to recover, orphan sources. Variations include conducting the campaign in response to a specific threat, or as part of routine operations. Orphan and disused source search campaigns that were described by the participants relied, in part, on information gathered through intelligence operations, media announcements and record gathering. Impediments to information gathering campaigns that were described included the time and effort necessary to contact potential users, reluctance on the part of source suppliers to share information on sources that have been exported to States, and lack of public support.
37. Working group participants found that, in general, the long-term management possibilities for disused sources are not adequate. This includes a lack of dedicated storage facilities, disposal facilities, and available source reuse/recycling opportunities. The working group participants also noted that difficulties in the transportation of disused sources for reuse/recycling or repatriation is a major issue for the reasons discussed in paragraph 12.
38. The working group suggested that a 'donors meeting' could be convened with the objective of raising funds for projects related to the management or disposal of disused and orphan sources.
39. Some States have implemented financial guarantee schemes, some of which collect fees associated with the licensing of radioactive sources to address the costs associated with the recovery and storage of disused sources. In addition, it was noted that a State has imposed a fee on current licensees to contribute to a national fund to manage and dispose of orphan and historic sources.

(End of reports from Working Groups)

40. It was reported that a Member State plans to submit a proposal for an Open-Ended Working Group at the 4<sup>th</sup> Review Meeting of the Joint Convention with the aim of discussing issues specific to end-of-life management of disused sources which could be useful in particular for non-nuclear countries having ratified the Joint Convention.
41. Meeting participants encouraged the IAEA to continue its practice of holding annual technical meetings on the Code of Conduct for the Safety and Security of Radioactive Sources. It was suggested that future topical meetings may be held with regard to the Code of Conduct on:
  - a. Continuation of the working group discussions on:
    - i. Return of disused sources to supplier and repatriation
    - ii. Dedicated storage and disposal capabilities for disused sources
    - iii. Comprehensive strategy for end-of-life management of disused sources
    - iv. National strategies for regaining control over orphan sources and improving control over vulnerable sources (including disused sources)
  - b. End-of-life management of disused sources, including when disused sources are managed as radioactive waste
  - c. End-of-life source management strategies specifically for States with disused sources and no or a limited nuclear industry
42. It was suggested that end-of-life management issues for disused sources should be addressed during the International Symposium on Nuclear Security that is planned for 2013.
43. It was suggested that issues such as denials of shipments, other transportation issues affecting the end-of-life management of disused sources, and current international efforts on the control of radioactive material that may be inadvertently incorporated into scrap metal could be discussed during the International Conference on the Safety and Security of Radioactive Sources that will be held in Abu Dhabi in 2013.
44. The Report of the Chairman was reviewed by meeting participants and their feedback was incorporated into the final version.
45. Participants suggested that the Director-General might wish to submit this report to the Agency's policy-making organs for their consideration and take it into account in developing future Agency actions in this area.



James L. Joyce  
Chairman  
2 March 2012