

**The Americas Regional Meeting for Sharing Experience and Lessons Learned in Implementing the Code of Conduct on the Safety and Security of Radioactive Sources and its Supplementary Guidance**

Mexico City

12 – 16 February 2024

Summary of the Chair

1. The Americas Regional Meeting for Sharing Experience and Lessons Learned in Implementing the Code of Conduct on the Safety and Security of Radioactive Sources and its Supplementary Guidance, was held in Mexico City from 12 to 16 February, under the chairmanship of Ms. Cristina Dominguez (Argentina).
2. The meeting was attended by 39 experts from 19 Member States of the Americas Region: Argentina, Brazil, Bahamas, Canada, Chile, Costa Rica, Cuba, Dominica, Dominican Republic, El Salvador, Guyana, Haiti, Honduras, Jamaica, Mexico, Saint Kitts and Nevis, Saint Lucia, Trinidad and Tobago and United States of America.
3. The Scientific Secretaries for the meeting were Mr. Timothy Hayes (IAEA Division of Radiation, Transport and Waste Safety (NSRW), Ms. Leeza Duval (NSNS), Mr. Juan Carlos Benitez Navarro (NEFW) and the Technical Officer Mr. Dragan Avramovski (NSRW).
4. The meeting commenced with Mr. Alejandro Nuñez, Director of the National Commission of Nuclear Security, Safety, and Safeguards from Mexico (CNSNS), delivering the opening address. In his remarks, Mr. Nuñez underscored the expanding utilization of nuclear science and technology and the beneficial role of radioactive sources across medical, agricultural, industrial, and research applications. He also emphasized the criticality of establishing and implementing a national legal framework to ensure the safety and security of radioactive sources, aiming to prevent accidents and misuse. Furthermore, Mr. Nuñez highlighted the longstanding tradition of cooperation within the Americas region and stressed the imperative for enhanced regional collaboration and coordination regarding the implementation of the Code of Conduct and supplementary Guidance.
5. The proceedings were then advanced by Mr. Timothy Hayes (IAEA) in his extended opening remarks. Mr. Hayes warmly welcomed participants, emphasizing the pivotal role of the Code of Conduct and its supplementary Guidance in aiding states to fortify or establish regulatory infrastructures for ensuring the safety and security of radioactive sources. He underscored the beneficial uses of radioactive sources while cautioning about the potential risks associated with those falling under the scope of the Code of Conduct (Category 1 to 3) if not managed within a robust legal and regulatory framework for safety and security.
6. Throughout the meeting, representatives from the IAEA Secretariat and various participating Member States delivered presentations on subjects pertinent to the Code of Conduct and supplementary Guidance. These presentations will be accessible to participants via a secure shared webpage. As a result, the detailed contents of the presentations are not duplicated in this summary report.
7. During the meeting, the IAEA Secretariat conducted interactive sessions using Slido platform to discuss the implementation of the Code of Conduct and scenario-based exercises on the import and export of

radioactive sources. Additionally, an interactive survey was conducted to identify gaps and trends in the lifecycle management of radioactive sources. At the end of the meeting, a summary of the interactive sessions was provided.

8. The meeting was divided into 5 thematic sessions. Each session included a presentation related to the new Regulatory Authority Information System (RAIS+).

9. The Secretariat (Mr. Dragan Avramovski, NSRW) offered a comprehensive overview of the recently updated RAIS+ through his presentations and practical demonstration sessions, elucidating the functionalities and characteristics of RAIS+, which encompass Authorization of Import and Export, Management of National Source Registry, Inspection and Enforcement, as well as the customization capabilities inherent within RAIS +.

### **I. Overview of Radioactive Sources – Understanding the Safety and Security Risk**

10. The Secretariat (Mr. Timothy Hayes) presented a comprehensive overview of radioactive material, covering radioactive sources, fundamental concepts, and pertinent definitions. Additionally, Mr. Hayes outlined common practices involving Category 1 to 3 radioactive sources and their implementation in ensuring safety and security.

11. The Secretariat (Mr. Juan Carlos Benitez Navarro) provided a comprehensive overview of the categorization of radioactive sources, elucidating their common purposes, various types, and associated devices. This presentation included references to the IAEA Safety Guide No RS-G-1-9, recognized globally as a foundation for risk-informed decision-making in this field. The overview extended to the classification of radioactive sources into Categories 1 through 3, each with corresponding security levels denoted as Level A, B, and C respectively.

12. The Secretariat (Ms. Leeza Duval) offered an overview of the likelihood and consequences of accidents and malicious acts. The presentation delved into the differences between safety and security definitions, analyzing the consequences of radiological accidents as reported by Member States. Additionally, the overview encompassed components of risk assessment, the types of threat devices that can lead to consequences, acceptable risk, and risk management strategies. Furthermore, a case study of the Goiania Accident was included.

### **II. Overview of the Code of Conduct on the Safety and Security of Radioactive Sources**

13. The Secretariat (Mr. Timothy Hayes) presented an overview of the development of the Code of Conduct. Mr. Hayes' presentation encompassed the objectives, fundamental principles, key provisions, initiatives, and valuable resources associated with the Code of Conduct. Additionally, Mr. Hayes highlighted the complementary role of the Code of Conduct alongside legally binding instruments such as the Joint Convention. Furthermore, practical guidance was offered to participants on the process of endorsing the Code and Guidance, alongside encouragement for its implementation.

14. Ms. Cristina Dominguez (Argentina) presentation covered the Code of Conduct's complementarity and interaction with other binding and non-binding legal instruments. It also highlighted differences in objectives, scope, and terminology compared to the CPPNM, A/CPPNM, Joint Convention, UN Resolutions 1540, and ICSANT. Understanding how different legal instruments complement or diverge from each other allows for the development of coherent and consistent approaches to nuclear safety and

security at national, regional, and international levels and facilitates cooperation among states and organizations.

### **III. Guidance on the Import and Export of Radioactive Sources**

15. Mr. Timothy Hayes (NSRW) presented an overview of the development of the Guidance on the Import and Export of Radioactive Sources. Following this, Mr. Hayes reviewed essential provisions concerning the import and export of Category 1 & 2 sources in alignment with the Guidance and the Code of Conduct. Additionally, he examined the roles and responsibilities of the Point of Contact, terminology relevant to the import and export of sources, the concept of "exceptional circumstances," and the significance of the "Importing and Exporting State Questionnaire".

16. Mr. Brent Ferguson (Canada) shared insights on the evaluation of export permissions for radioactive sources. He discussed Canada's history of strengthened import/export controls and highlighted the country's database. Additionally, he provided an example demonstrating how Canada applies these guidelines in assessing export applications.

17. Ms Andrea Jones (USA) shared the USA's experience on Import and Export of Radioactive Sources, explained US NRC legal and regulatory framework, and provided an overview of the import and export licensing process, provided inspection and enforcement related activities, also share challenges in the field and explained NRC's International Assistance Partnerships achievements.

18. Mr. Ricardo Gutterres (Brazil) delivered a presentation sharing the experience of the licensing process in Brazil, the coordination with local authorities, and the establishment of Bilateral Arrangements with other Member States, to harmonize and facilitate the import and export of radioactive sources.

19. The Secretariat (Leeza Duval) presented on the IAEA Incident and Trafficking Database (ITDB). This database serves as the IAEA's information system on incidents of illicit trafficking and other unauthorized activities involving nuclear and other radioactive materials outside of regulatory control. It demonstrates how it contributes to reinforcing import and export controls.

### **IV. Guidance on the Management of Disused Radioactive Sources**

20. The Secretariat (Mr. Timothy Hayes) provided an overview of the Guidance on the Management of Disused Radioactive Sources (Guidance on Disused Sources) highlighting its key provisions.

21. The Secretariat (Mr. Juan Carlos Benitez Navarro) provided presentations about the Management of Category 1-2 and 3-5 Disused Sealed Radioactive Sources. He discussed approach and technical options, such as Reuse or Recycling (within the country), return to a supplier, conditioning of DSRS, Storage and Disposal, and shared MS experiences in Conditioning DSRS with the collaboration of other MS and IAEA support.

22. Ms. Gloria Zarate Perez (Chile) shared the Chilean experience regarding the return of disused Category 1-2 Sources to supplier, which was carried out within the framework of the IAEA project titled "Multi-Regional Project on Sustainable Management of Disused Sealed Radioactive Sources". Ms. Zarate presented the challenges in the process and the significance of coordination with national and international organizations, resulting in a successful operation.

23. Ms. Yolanda Pérez Reyes (Cuba) shared information about the applications of radioactive sources in Cuba, the framework of the national inventory of sources "From Cradle to Grave," the regulatory framework, and the implementation of the Code of Conduct and its Guidelines. Ms. Pérez Reyes also provided examples of the reuse of disused radioactive sources in various applications and shared lessons learned.

24. Ms. Evelyn Bustillo (Honduras) shared the experience about the Recovery of Radioactive Material Outside of Regulatory Control that happened in Honduras.

25. Mr. Verne Emmanuel (Saint Lucia) shared challenges and management options for disused radioactive sources in his country. Among the challenges is the need to strengthen the legal and regulatory framework, provide training and resources to implement the recommendations of the code of conduct, and its complementary guidelines.

26. Mr. Brian Rabaey (USA) shared some initiatives of the US National Nuclear Security Administration's Office of Radiological Security (ORS) to address many of the End-of-Life Management Challenges that ORS has identified in working with Member States. Mr. Rabaey explained that ORS is also developing "An End-of-Life Management Toolkit" that allows ORS to collaborate with partner states to improve disused source security and safety and meet their End-of-Life Management needs.

27. Ms. Theresa Clark (USA) shared the US major achievements over 20 Years of Code of Conduct Commitment and Implementation. These include the implementation of a National Security Memorandum encompassing the advancement of nuclear and radioactive material security, bilateral arrangements with Member States, support for raising awareness and political commitment to the Code and its Supplemental Guidance, collaboration with IAEA Member States to facilitate secure export/import of sources, conducting over 1000 security inspections within a 2-year period, issuance of the Safety Culture Policy Statement, evaluation of needs for Category 3 quantities of radioactive materials, assistance to users in the removal and disposal of disused radioactive sources, and encouragement of transition to non-radioisotopic alternative devices.

28. The Secretariat (Mr. Hayes and Mr. Benitez Navarro) provided insights about the Draft TECDOC on Establishing Financial Provisions for the Management of Disused Sources and on the Reuse and Recycling of DSRS.

## **V. Regulatory Framework for the Control of Radioactive Sources – Maintaining Control of Radioactive Sources throughout Lifecycle**

29. Mr. Christian Romero (Mexico) shared the lessons learned from the radiological incident in Hueyapoxtla.

30. Mr. Hugo Briso (Chile) explained the national regulatory system and informed that the full set of safety standards is being reviewed having the Code of Conduct as a reference, import and export transfers are undertaken consistently with the provisions of the Guidance, also explained that Chile implements import and export activities through bilateral agreements with Canada. Moreover, DSRS are usually returned to the same providers, thus giving compliance to the Guidance.

31. Mr. Cliff Riley (Jamaica) presented Jamaica's experience, in achieving a Sustainable Authorization Process implemented to fulfill the mandates of the Code and the accompanying legislation. Currently, 35% of authorized users are under regulatory control, and there is a trained personnel team dedicated to orphan

source recovery. All authorized facilities are required to have appropriate safety measures and security plans for activities involving the use of ionizing radiation sources. Additionally, there are plans use of RAIS+ as the National Register of Sources.

32. The Secretariat (Mr. Timothy Hayes) presented on IAEA support for the implementation of the Code of Conduct and supplementary Guidance. In this regard, Mr. Hayes reviewed the Code of Conduct's formalized process which calls for the periodic exchange of information and lessons learned, and the evaluation of implementation progress made by Member States. Mr. Hayes provided information on IAEA Peer Reviews and Advisory Missions, detail on the upcoming events related to the Code of Conduct, as well as events in the planning stages, noting the next Open-ended Code of Conduct Meeting is scheduled for 2026.

33. The Secretariat (Mr. Timothy Hayes, and Ms. Ms. Leeza Duval), provided a summary of the interactive session results. An overview of participating Member States and the percentage of political commitment to the Code of Conduct and its supplementary Guidance was provided. The combined results from the interactive sessions provided information on Member States progress with implementation and the challenges in establishing and/or implementing a national system for the control of radioactive sources, what level of involvement with the authorization of imports and exports participants had, various topics were discussed where the participants sought better clarity in the role and responsibilities of Points of Contacts where a revision of the current document, and continued training from the IAEA for Points of Contacts was suggested, among other

#### **Conclusions:**

1. The meeting underscored the significance of implementing the Code of Conduct on the Safety and Security of Radioactive Sources. Participants recognized its role in promoting international cooperation, establishing technical guidance for source safety and security, and enhancing regulatory practices. It was acknowledged that effective implementation necessitates commitment from all stakeholders and integration with existing legal instruments.
2. Discussions on import and export guidance highlighted the necessity for standardized procedures, rigorous authorization processes, and the effectiveness of bilateral cooperation agreements to ensure the safe and secure movement of radioactive sources across borders. Experience-sharing sessions provided valuable insights into various national approaches and best practices.
3. Managing disused radioactive sources emerged as a significant challenge requiring tailored strategies, proper categorization, and responsible disposal practices.
4. Presentations on practical experiences and regional initiatives emphasized the importance of lifecycle management, including options for return, reuse/recycling, and long-term storage and disposal, while ensuring regulatory control and security.
5. Lessons learned from radiological incidents, successes, and challenges in establishing regulatory frameworks were discussed, emphasizing the continuous need for improvement and adaptation to emerging threats.

6. Participants gained understanding of RAIS+ capabilities and appreciated its mechanism to support Member States in conducting comprehensive self-assessments and developing effective risk management strategies related to radiation sources.

7. Participants acknowledged the vital role of the IAEA in providing guidance, technical support, and fostering international cooperation in nuclear safety and security. Continued collaboration with the IAEA was emphasized to enhance capacity-building efforts, facilitate knowledge exchange, and ensure the effective implementation of international standards and best practices.

### **Recommendations**

Discussions that took place throughout the week resulted in several recommendations for the IAEA as follows:

1. Agency should continue efforts to conduct regional meetings on implementation of the Code of Conduct and Supplementary Guidance. Such efforts enhance cooperation and strengthen relations between neighboring countries or regions with common interests.
2. The Agency should consider promoting discussions and working forums to address the following topics:
  - a. Maximizing the benefits derived from IAEA advisory missions (e.g., IRRS and ARTEMIS).
  - b. Establishing regional programs/databases for similar meters to the radio program.
  - c. Review the issue of Disused Sealed Radioactive Sources (DSRS) classified as waste and the potential development of guidance on this topic.
3. The Agency should consider facilitating collaborative research and development initiatives among Member States to address emerging challenges in nuclear safety and security as it relates to implementation of the Code of Conduct and Guidance.
4. The Agency should consider enhancing technical assistance and capacity-building programs tailored to the specific needs of each region, in relation to implementation of the Code of Conduct and Guidance.
5. The Agency should enhance efforts to strengthen regulatory frameworks and standards across regions to ensure consistent and effective management of radioactive sources.
6. The Agency should conduct regional workshops to engage policymakers to foster a better understanding of the benefits of implementing the Code of Conduct and Guidance and to increase awareness of the risks associated with nuclear technologies and radiation sources not under regulatory control.
7. The Agency should facilitate the exchange of personnel and expertise among Member States through fellowship programs and professional development opportunities.
8. Continuously evaluating and adapting regional meeting formats and agendas to address evolving priorities and emerging issues in the field of nuclear safety and security is crucial for progress.



Cristina Dominguez

Chairperson

16 February 2024