



IAEA

International Atomic Energy Agency

Atoms for Peace and Development

**Board of Governors
General Conference**

GOV/2023/37-GC(67)/14

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NUCLEAR SECURITY REPORT 2023

Report by the Director General

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Item 15 of the Conference's provisional agenda
(GC(67)/1 and Add.1)

Nuclear Security Report 2023

Report by the Director General

Summary

- Pursuant to resolution GC(66)/RES/7, a report covering activities undertaken by the Agency in the area of nuclear security and highlighting significant accomplishments within the framework of the Nuclear Security Plan during the reporting period is submitted to the Board of Governors and the General Conference for their consideration.

Recommended Action

- It is recommended that the Board of Governors take note of this report.

Nuclear Security Report 2023

Report by the Director General

A. General

1. This report was produced for the 67th regular session (2023) of the General Conference in response to resolution GC(66)/RES/7, in which the General Conference requested the Director General to report on activities undertaken by the Agency in the area of nuclear security, and on other relevant developments in the intervening period. This report covers the period from 1 July 2022 to 30 June 2023.

2. In accordance with its central role in strengthening the nuclear security framework globally and in coordinating international activities in the field of nuclear security, the Agency continued to provide assistance, upon request, to States in their national efforts to establish and maintain effective and sustainable nuclear security regimes, while avoiding duplication and overlap.¹

3. During the reporting period, the Agency continued to implement activities under the *Nuclear Security Plan 2022–2025*, approved by the Board of Governors in September 2021 and taken note of by the General Conference at its 65th regular session in September 2021.²

4. The Agency conducted an internal assessment of the development process for the Nuclear Security Plan, as well as the resources that may be required for different approaches. Additionally, throughout the reporting period, the Agency conducted bilateral and multilateral meetings with Member States to discuss lessons learned from the development process of the Nuclear Security Plan. The Agency will continue to engage with Member States about the process and scope of the Nuclear Security Plan prior to the development of its next iteration, covering the period 2026–2029.³

5. This report is intended to complement the *Nuclear Security Review 2023*. In March 2023, a report by the Director General containing the draft *Nuclear Security Review 2023* was submitted to the Board of Governors. The final version of the *Nuclear Security Review 2023*, prepared in the light of discussions at the Board of Governors, is provided as an information document at the 67th regular session of the Agency's General Conference. The *Nuclear Security Review 2023* includes the global trends and the Agency's activities in 2022, highlighting significant accomplishments. It also presents priorities and related activities for 2023 and beyond, as identified by the Agency and its Member States, for strengthening nuclear security globally. These priorities are addressed in the *Nuclear Security Plan 2022–2025* and the Agency's Programme and Budget, including outcomes, outputs, timelines and performance indicators. The Agency conducted bilateral and multilateral meetings, including a meeting

¹ This relates to operative paragraph 1 of resolution GC(66)/RES/7.

² This relates to operative paragraph 4 of resolution GC(66)/RES/7.

³ This relates to operative paragraph 4 of resolution GC(66)/RES/7.

with the Group of 77 in April 2023, at which matters related to the Nuclear Security Review, the Nuclear Security Report and the Nuclear Security Plan were discussed. In consultation with Member States, the complementarity and timing of the issuance of the assorted reports, within their defined scopes and with an objective of minimizing duplication, has been considered in the development of the *Nuclear Security Review 2023* and the present report.⁴

B. Responding to Current and Evolving Challenges and Risks to Nuclear Security



First Programme Committee Meeting for the 2024 International Conference on Nuclear Security (ICONS 2024) in Vienna in March 2023.

6. With a view to developing guidance and facilitating training to support Member States in implementing measures that will effectively confront current and evolving challenges, risks and threats to nuclear security, the Agency continued implementation of multiple coordinated research projects (CRPs)⁵, including:

- Facilitation of Safe and Secure Trade Using Nuclear Detection Technology — Detection of RN and Other Contraband;

⁴ This relates to operative paragraph 20 of resolution GC(66)/RES/7.

⁵ This relates to operative paragraph 5 of resolution GC(66)/RES/7.

- Advancing Maintenance, Repair, and Calibration of Radiation Detection Equipment;
- Nuclear Security Implications of Counterfeit, Fraudulent, and Suspect Items;
- Preventive and Protective Measures Against Insider Threats at Nuclear Facilities;
- Applying Nuclear Forensic Science to Respond to a Nuclear Security Event; and
- Enhancing Computer Security for Radiation Detection Systems.

7. Additionally, the Agency initiated a series of modified CRPs to specifically address emerging threats and technologies in nuclear security. Under this new series, CRPs of approximately one year in duration will be conducted to quickly address new threats and technologies. Currently, the Agency is developing a new CRP to determine the nuclear security implications of uncrewed systems (aerial, ground and maritime). The research undertaken as part of the short-duration CRP will assist in the development of a non-serial publication that will detail the nuclear security implications of uncrewed systems, as well as lessons learned, best practices and measures for addressing the use of, and threats presented by, these rapidly developing and emerging technologies.⁶

8. The Agency held a Technical Meeting on Network and Communication Systems for Radiation Detection Equipment Used for Nuclear Security in Vienna in April 2023. At the meeting, the Agency sought to develop an understanding of the operational, security and policy/legal requirements and needs regarding networks and communication systems used for nuclear security and involving radiation detection systems. Additionally, the Agency's Mobile-Integrated Nuclear Security Network (M-INSN), a secure network and communication system supporting command and control of Member State nuclear security operations, was presented. Feedback from the 27 Member States represented at the meeting, including those with existing M-INSN experience, was universally positive and provided important insight into enhancements to M-INSN that would further support Member State nuclear security applications.⁷

9. The Agency convened the third annual meeting of the International Network of Front Line Officers and Organizations for Nuclear Security Detection (FLO Network) in Vienna in October 2022. The Agency also conducted regional Technical Meetings of the FLO Network — in Madagascar in December 2022 for French-speaking African States and in Lebanon in June 2023 for the Asia region. At these events, experts in detection of and response to nuclear security events shared good practices and reviewed recent case studies in order to more effectively confront current and evolving challenges, risks and threats to nuclear security.⁸

10. In March 2023, in Vienna, the Agency convened the first meeting of the Programme Committee for the International Conference on Nuclear Security: Shaping the Future (ICONS 2024), which is planned to be held in Vienna from 20 to 24 May 2024. Representatives from 28 Member States, the European Union, and 2 international organizations participated in the meeting.⁹

⁶ This relates to operative paragraphs 5, 54 and 61 of resolution GC(66)/RES/7.

⁷ This relates to operative paragraph 5 of resolution GC(66)/RES/7.

⁸ This relates to operative paragraphs 5, 34, 53 and 61 of resolution GC(66)/RES/7.

⁹ This relates to operative paragraph 7 of resolution GC(66)/RES/7.

C. Strengthening Legal Instruments, National Legislative and Regulatory Frameworks and International Cooperation



Eighth Technical Meeting of the representatives of Parties to the CPPNM and the A/CPPNM, Vienna, November 2022.

11. The Agency conducted several Advisory Missions on Regulatory Infrastructure for Radiation Safety and Nuclear Security —to Djibouti, Gabon and Uruguay in September 2022; to the Plurinational State of Bolivia in November 2022; to Benin in January 2023; to Saint Kitts and Nevis in April 2023; and to Honduras in June 2023.¹⁰

12. In November 2022, the Agency convened a Technical Meeting of the Representatives of Parties to the Convention on the Physical Protection of Nuclear Material (CPPNM) and the CPPNM Amendment (Points of Contact Meeting) in Vienna to facilitate discussions and experience sharing on various matters within the scope of the CPPNM and its Amendment.¹¹

13. The Agency conducted two expert missions to promote adherence to the Amendment to the CPPNM (A/CPPNM), to Uganda in August 2022 and to Mongolia in October–November 2022.¹²

14. The Agency held three national workshops to raise awareness of the A/CPPNM — in Lusaka in August 2022; in Dodoma in October 2022; and in Freetown in April 2023. In coordination with the

¹⁰ This relates to operative paragraph 10 of resolution GC(66)/RES/7.

¹¹ This relates to operative paragraphs 12 and 13 of resolution GC(66)/RES/7.

¹² This relates to operative paragraphs 12 and 13 of resolution GC(66)/RES/7.

United Nations Office on Drugs and Crime (UNODC), the International Convention for the Suppression of Acts of Nuclear Terrorism (ICSANT) was also discussed at these workshops.¹³

15. Three regional workshops to promote the universalization of the A/CPPNM were held — in Hanoi in October 2022; in Asunción in November 2022; and Victoria Falls, Zimbabwe in March 2023. The Agency also conducted outreach on the CPPNM and A/CPPNM at the Regional Workshop on Integrated Nuclear Security Support Plans, held in Panama City in October 2022. In coordination with UNODC, the ICSANT was also discussed at these regional workshops.¹⁴

16. The repository of documents on the CPPNM and the A/CPPNM generated in advance of the 2022 Conference of the Parties to the A/CPPNM has been updated to include the preparatory and outcome documents of the Conference. The repository has also been moved to a new location on the Nuclear Security Information Portal to ensure that it will be easily accessible by Member States in the future. During the reporting period, two countries deposited their instruments ratifying the A/CPPNM — Mozambique in September 2022 and the Lao People's Democratic Republic in April 2023.¹⁵

17. The Agency held two Nuclear Security Information Exchange Meetings, in October 2022 and April 2023, in Vienna, which were attended by representatives from intergovernmental and non-governmental organizations and initiatives involved in nuclear security. The purpose of these meetings was to provide opportunities for the sharing of experiences and good practices and to identify areas of cooperation in nuclear security.¹⁶

18. Two Regional Workshops on Nuclear Security Information Exchange and Cooperation were held during the reporting period — one for South-East Asian countries in Singapore in July 2022; and the other for South-East African countries in Arusha, United Republic of Tanzania, in June 2023. The objective of the workshops was to strengthen national, regional and international capacities for preventing and combating illicit trafficking in nuclear and other radioactive material, as well as other nuclear security events, through enhanced information exchange and coordination.¹⁷

¹³ This relates to operative paragraphs 12, 13 and 16 of resolution GC(66)/RES/7.

¹⁴ This relates to operative paragraphs 12, 13 and 16 of resolution GC(66)/RES/7.

¹⁵ This relates to operative paragraph 14 of resolution GC(66)/RES/7.

¹⁶ This relates to operative paragraph 18 and 29 of resolution GC(66)/RES/7.

¹⁷ This relates to operative paragraphs 18 and 29 of resolution GC(66)/RES/7.

D. Improving Communication and Developing Agency Nuclear Security Guidance



Technical Meeting on the Security of Small Modular Reactors, Vienna, March 2023.

19. The Agency continued communication and outreach about its nuclear security activities through a number of platforms, including social media. Specifically, the Agency issued 8 press releases and 23 articles on nuclear security-related topics on its website, as well as a Bulletin entitled *Computer Security in the Nuclear World*. All International Physical Protection Advisory Service and International Nuclear Security Advisory Service (INSServ) missions conducted in Member States were communicated to the media and the public through press releases, subject to confidentiality requirements between the Agency and Member States. All new security-related publications were communicated to a broad audience through Agency's social media accounts.¹⁸

20. The terms of reference for the Global Nuclear Safety and Security Communication Network were updated to include nuclear security. The Agency presented its activities with regard to communication on nuclear security at the International Nuclear Security Education Network (INSEN) 2023 Leadership Meeting held in Vienna in February 2023.¹⁹

¹⁸ This relates to operative paragraph 19 of resolution GC(66)/RES/7.

¹⁹ This relates to operative paragraph 19 of resolution GC(66)/RES/7.

21. The Agency issued two new brochures entitled *Supporting Member States: Nuclear Security at Major Public Events (MPEs)* and *Nuclear Security Detection Architecture*, updated existing security-related brochures and developed for the first time a poster on the IAEA Nuclear Security Series.²⁰

22. The Agency developed four new web pages dedicated to nuclear security topics: on the Nuclear Security Training and Demonstration Centre (NSTDC), on the FLO Network, on nuclear security detection architecture and on frequently asked questions on the A/CPPNM.²¹

23. The Agency convened the Nuclear Security Guidance Committee (NSGC) in November–December 2022 and June 2023 in a hybrid format in order to ensure extensive participation by Member States. At these meetings, decisions on proposals for new publications and revisions of existing publications in the IAEA Nuclear Security Series were made, draft publications to be submitted to Member States for comment and drafts for publishing were approved, and draft publications in the IAEA Safety Standards Series that have interfaces with nuclear security were cleared.²²

24. Work on the Agency's nuclear security guidance continues to focus on enhancing the set of Nuclear Security Series publications. To ensure that the publications remain up to date, the Agency continued its review of the Nuclear Security Fundamentals and Recommendations with the aim of determining whether these publications should be updated in the near future. As a part of this effort, the Agency hosted an open-ended meeting of legal and technical experts in Vienna in December 2022 to gather feedback and perspectives from a broad range of Member States regarding the need for and implications of the revision, in the near term, of the Nuclear Security Fundamentals publication *Objective and Essential Elements of a State's Nuclear Security Regime* (IAEA Nuclear Security Series No. 20).²³

25. The Agency continues its efforts to improve the timeliness of the issuance of Nuclear Security Series publications. As of 30 June 2023, all Nuclear Security Series publications approved by the NSGC had been issued or were at the last stage of editing prior to publication.²⁴

26. The Agency undertook further efforts to translate Nuclear Security Series publications into Arabic, Chinese, French, Russian and Spanish. During the reporting period, 1 publication was translated into Arabic, 2 into French, and 5 into Russian.²⁵

27. A Workshop on Managing the Interface Between Nuclear Safety and Security for Nuclear Fuel Cycle Facilities was held by the Agency in Vienna in October 2022 to provide participating Member States with a forum for sharing knowledge, experiences and practical information related to the management of the interface between safety and security for nuclear fuel cycle facilities.²⁶

28. The Interface Group, which brings together the chairs of the Safety Standards Committees and the NSGC, reviewed 7 publication proposals for possible safety–security interfaces following a

²⁰ This relates to operative paragraph 19 of resolution GC(66)/RES/7.

²¹ This relates to operative paragraph 19 of resolution GC(66)/RES/7.

²² This relates to operative paragraph 21 of resolution GC(66)/RES/7.

²³ This relates to operative paragraph 37 of resolution GC(66)/RES/7.

²⁴ This relates to operative paragraph 23 of resolution GC(66)/RES/7.

²⁵ This relates to operative paragraph 23 of resolution GC(66)/RES/7.

²⁶ This relates to operative paragraph 25 of resolution GC(66)/RES/7.

recommendation from the Secretariat's Coordination Committee on Safety Standards and Nuclear Security Series Publications.²⁷

29. The Agency continued development of a draft IAEA Technical Document (TECDOC) on the security of small modular reactors. This draft was also discussed at a hybrid Technical Meeting on the Security of Small Modular Reactors in Vienna in March 2023.²⁸

E. Promoting Nuclear Security Culture



Regional Workshop on Nuclear Security Culture in Practice, Tokai, Japan, February-March 2023.

30. The Agency conducted two National Workshops on Nuclear Security Culture in Practice — in Kigali in October 2022 and in Abidjan, Côte d'Ivoire in March 2023. The Agency also conducted two Regional Workshops on Nuclear Security Culture in Practice — in Lusaka in October 2022 (for English- and French-speaking African countries) and in Tokai, Japan in February–March 2023 — and one International Workshop on Nuclear Security Culture in Practice in Bahadurgarh, India in September 2022.²⁹

31. The Agency continued its efforts to enhance understanding of nuclear security culture self-assessment through four national workshops — held in Accra and in Chakri, Pakistan in August 2022, in Dakar in November 2022 and in Bangkok in February 2023.³⁰

²⁷ This relates to operative paragraph 25 of resolution GC(66)/RES/7.

²⁸ This relates to operative paragraph 28 of resolution GC(66)/RES/7.

²⁹ This relates to operative paragraphs 30 and 31 of resolution GC(66)/RES/7.

³⁰ This relates to operative paragraphs 30, 31 and 60 of resolution GC(66)/RES/7.

F. Strengthening Education and Training



Annual Meeting of the International Network for Nuclear Security Training and Support Centres, Vienna, July 2022.

32. Two e-learning modules were translated and made available in Arabic, Chinese, English, French, Russian and Spanish during the reporting period, and two new modules entitled “Introduction to Nuclear Security Culture” and “Nuclear Security Detection Architecture Awareness” were developed, bringing the total number of e-learning modules to 21, of which 19 are available in the above-mentioned languages.³¹

33. The Agency held a National Workshop on Radiological Crime Scene Management in Cairo in October 2022; a virtual National Train-the-Trainer Course on Radiological Crime Scene Management: Session 1 for Thailand in September 2022; a Regional Train-the-Trainer Course on Radiological Crime Scene Management: Session 2 in Bogotá in December 2022; and an International Train-the-Trainer Course on Radiological Crime Scene Management for Subject Matter Experts in Seibersdorf, Austria, in November 2022.³²

34. The Agency conducted a National Train-the-Trainers Course on the Physical Protection of Nuclear Material and Nuclear Facilities in Rawalpindi, Pakistan in October 2022.³³

35. In August 2022, the Agency held a Regional Train-the-Trainers Course for Instructors of Front Line Officers on the Detection of Nuclear and Other Radioactive Material out of Regulatory Control in Vienna.³⁴

³¹ This relates to operative paragraphs 31 and 33 of resolution GC(66)/RES/7.

³² This relates to operative paragraph 32 of resolution GC(66)/RES/7.

³³ This relates to operative paragraph 32 of resolution GC(66)/RES/7.

³⁴ This relates to operative paragraph 32 of resolution GC(66)/RES/7.

36. The Agency continues to conduct e-learning and some technical events in hybrid or virtual formats. During the reporting period, 4542 e-learning modules were completed by 1529 users. Also during the reporting period, the Agency implemented 139 nuclear security training events, of which 10 were held in a virtual format and 8 in a hybrid format.³⁵

37. The 2022 Annual Meeting of the International Network for Nuclear Security Training and Support Centres (NSSC Network) was held in Vienna in July 2022. It was attended by 54 participants from 37 States and 4 observer organizations, to celebrate the 10th anniversary of the NSSC Network and to identify priority activities for the upcoming year. The 2023 Annual Meeting of the NSSC Network was held in Pattaya, Thailand in February 2023. Attended by 70 participants from 42 States and 2 observer organizations, it brought together Member States that have established or are planning to establish a Nuclear Security Support Centre (NSSC), in order to share information on key technical themes relevant to operating such a centre, and to work individually and collaboratively among the NSSC Network Working Groups to plan activities and discuss priorities for the upcoming year.³⁶

38. The NSSC Network leadership meeting was held in Vienna in December 2022, with the aim of providing a forum to discuss overall NSSC Network priorities and receive updates on progress in implementing individual Working Group action plans.³⁷

39. The INSEN annual meeting was held in Vienna in July 2022, gathering nearly 80 participants from 40 States, at which nuclear security education activities, the revision of the INSEN action plan, and a report on new and ongoing activities of INSEN members were discussed.³⁸

40. The 2023 INSEN leadership meeting was held in Vienna in February 2023. At the meeting, participants evaluated the progress of the INSEN action plan for the current year, discussed nuclear security working group activities, and prepared for the INSEN annual meeting.³⁹

41. The Agency continues to consider all aspects, including planning for financial resources, related to the long-term sustainability of the NSTDC at Seibersdorf, and to keep Member States informed of progress made. Resource mobilization for the capital construction and procurement costs for the NSTDC, has been completed with generous donor support. In response to the call on the Agency to reapply all Programme Support Costs (PSC) from extrabudgetary contributions related to the NSTDC to assist in these efforts, the application of PSC generated by capital and procurement funding to direct and indirect costs of the NSTDC is under review. A site visit by the Friends of the NSTDC in September 2022 and a briefing to the Friends of the NSTDC in February 2023, a briefing to the Advisory Group on Nuclear Security in November 2022, as well as a technical briefing to Member States in December 2022, were conducted to keep Member States informed of progress.⁴⁰

³⁵ This relates to operative paragraph 33 of resolution GC(66)/RES/7.

³⁶ This relates to operative paragraph 34 of resolution GC(66)/RES/7.

³⁷ This relates to operative paragraph 34 of resolution GC(66)/RES/7.

³⁸ This relates to operative paragraph 34 of resolution GC(66)/RES/7.

³⁹ This relates to operative paragraph 34 of resolution GC(66)/RES/7.

⁴⁰ This relates to operative paragraph 35 of resolution GC(66)/RES/7.

G. Assisting in the Development and Implementation of Integrated Nuclear Security Support Plans, and Supporting Member State Needs



Regional Workshop on Integrated Nuclear Security Support Plans, Panama City, October 2022.

42. The Agency continues to assist with efforts globally to establish effective and sustainable national nuclear security regimes, including obligations under relevant international legal instruments. Integrated Nuclear Security Support Plan (INSSP) missions and awareness-raising missions for senior officials are key tools that the Agency uses for these efforts.⁴¹

43. The Agency conducted 20 INSSP review missions, to Botswana, Cambodia, Egypt, Ethiopia, Kenya, Lebanon, Madagascar, Mauritius, Mexico, Mongolia, Morocco, Namibia, Peru, Rwanda, South Africa, Tajikistan, Uganda, Uzbekistan, Zambia and Zimbabwe; and 3 INSSP finalization missions, to Brunei Darussalam, the Plurinational State of Bolivia and Guinea-Bissau. The Agency also undertook ten awareness-raising missions targeting decision makers, to Brunei Darussalam, Cambodia, Ethiopia, Guinea-Bissau, Libya, Madagascar, Mauritius, Mongolia, Yemen and Zambia. In addition, Brunei Darussalam and Eswatini benefited from an INSSP preparatory mission in September 2022 and January 2023, respectively.⁴²

⁴¹ This relates to operative paragraphs 36 and 39 of resolution GC(66)/RES/7.

⁴² This relates to operative paragraphs 36 and 39 of resolution GC(66)/RES/7.

44. In October 2022, the Agency held a regional workshop on INSSPs in Panama City. The workshop aimed to raise awareness of the importance of nuclear security and the INSSP mechanism in Central American Integration System States.⁴³

45. In January–February 2023, the Agency conducted an Interregional Workshop to Coordinate the Implementation of Integrated Nuclear Security Support Plans for the Members of the Arab Network of Nuclear Regulators in Hammamet, Tunisia, which identified common regional and sub-regional needs and potential pathways to address these needs through regional or sub-regional approaches.⁴⁴

46. The Agency held four Regional Schools on Drafting Regulations for Radiation Safety and Security of Radioactive Material in Vienna for Latin America in August 2022, for the Africa region in October 2022 (in English) and in November 2022 (in French) and for the Caribbean region in June 2023. The Agency also held two Regional Schools on Drafting Regulations for Radiation Safety, for the Europe and Central Asia region in January 2023, and for the Asia and the Pacific region in February 2023. The purpose of these Schools was to assist participants with the drafting and revision of their countries' national regulations on the radiation safety and security of radioactive material. Participants learned how to ensure the compatibility of their national regulations with the relevant Agency safety standards and nuclear security guidance.⁴⁵

47. The Agency initiated a full revision of the functional areas of the INSSP template as part of an effort to improve its usability for States and to continue to improve its linkage to the top-tier Nuclear Security Series publications (Nuclear Security Series Nos 13, 14, 15 and 20). Additionally, the Agency began realignment of the Nuclear Security Information Management System self-assessment tool to match the new INSSP template, which better links it to the INSSP and will further strengthen the ability of States to identify nuclear security needs.⁴⁶

48. The Agency continued its efforts to develop a voluntary mechanism to match Member State requests for assistance with other Member State offers of assistance, highlighting urgent needs and with due regard to confidentiality. The Agency conducted multiple donor meetings throughout the reporting period and continued its efforts to strengthen internal coordination on agreed activities and projects, including those set out in INSSPs; to improve the effectiveness and efficiency of the management of the Nuclear Security Fund; and to improve programme management through the streamlining of contribution acceptance, monitoring and reporting processes, as well as the status of funded activities and emerging needs.⁴⁷

⁴³ This relates to operative paragraphs 36 and 39 of resolution GC(66)/RES/7.

⁴⁴ This relates to operative paragraphs 36 and 39 of resolution GC(66)/RES/7.

⁴⁵ This relates to operative paragraph 37 of resolution GC(66)/RES/7.

⁴⁶ This relates to operative paragraphs 37, 39 and 60 of resolution GC(66)/RES/7.

⁴⁷ This relates to operative paragraphs 40 and 63 of resolution GC(66)/RES/7.

H. Supporting Continued Dialogue on the Security of Radioactive Sources and New Technologies



Radioactive sources experts gathered in Vienna to discuss progress in the implementation of the IAEA's Code of Conduct on the Safety and Security of Radioactive Sources, May 2023.

49. The Agency addressed four new requests related to strengthening physical protection at facilities with high activity radioactive sources in use and storage. The Agency assisted in the removal of 18 high activity disused radioactive sources from 2 States, continued to support the ongoing removal of 35 high activity disused radioactive sources in 7 States and initiated the preparatory work for the removal of an additional 42 sources from 4 States.⁴⁸

50. A trilateral contract, involving the Agency, the awarded contractor, and the end-user representing the beneficiary State, on the conditioning of four disused radioisotope thermoelectric generators, was signed during the reporting period. The conditioning will serve as a preventative measure to maintain radioactive source containment and ensure that the devices are suitable for safe and secure long term storage, as part of a project to assist Member States in strengthening the safety and security of disused radioisotope thermoelectric generators.⁴⁹

51. The Agency continued its support for the implementation of a first-of-a-kind borehole disposal system in Ghana and Malaysia, a disposal solution that combines financial affordability and

⁴⁸ This relates to operative paragraphs 41 and 42 of resolution GC(66)/RES/7.

⁴⁹ This relates to operative paragraphs 41 and 42 of resolution GC(66)/RES/7.

technological feasibility, where disused sealed radioactive sources can be safely, securely and permanently emplaced.⁵⁰

52. As of 30 June 2023, 147 States had made a political commitment to implement the Code of Conduct on the Safety and Security of Radioactive Sources, of which 131 had also notified the Director General of their intention to act in a harmonized manner in accordance with the Code's supplementary Guidance on the Import and Export of Radioactive Sources. A total of 151 States have nominated points of contact to facilitate the export and import of radioactive sources. In addition, 58 States have notified the Director General of their intention to act in a harmonized manner and in accordance with the Code's supplementary Guidance on the Management of Disused Radioactive Sources.⁵¹

53. The Agency held a Technical Meeting to Create Awareness of the Need for Political Commitment to the Code of Conduct on the Safety and Security of Radioactive Sources and its Supplementary Guidance in Vienna in August–September 2022.⁵²

54. The Agency held the sixth Open-ended Meeting of Technical and Legal Experts for Sharing Information on States' Implementation of the Code of Conduct on the Safety and Security of Radioactive Sources in Vienna in May–June 2023 to share information on the implementation of the Code of Conduct and its supplementary Guidance and to commemorate the 20th anniversary of the approval of the Code of Conduct.⁵³

55. An International Meeting of the Points of Contact for the Purpose of Facilitating the Import and Export of Radioactive Sources in Accordance with the Guidance on the Import and Export of Radioactive Sources was held by the Agency in Vienna in January 2023.⁵⁴

⁵⁰ This relates to operative paragraphs 41 and 42 of resolution GC(66)/RES/7.

⁵¹ This relates to operative paragraph 43 of resolution GC(66)/RES/7.

⁵² This relates to operative paragraph 43 of resolution GC(66)/RES/7.

⁵³ This relates to operative paragraph 43 of resolution GC(66)/RES/7.

⁵⁴ This relates to operative paragraph 43 of resolution GC(66)/RES/7.

I. Using the Incident and Trafficking Database and Advising on Threat Assessment, Including for Insider Threats



Advanced, Practitioner-Level Training Course on Preventive and Protective Measures against Insider Threats, Belgium, September 2022.

56. The Agency provided quarterly Incident and Trafficking Database (ITDB) analytical summary reports, issued its annual factsheet summarizing ITDB incidents for public information and, in response to requests from Member States, provided additional information services in support of three major public events (MPEs).⁵⁵

57. In September 2022, the Agency held the Advanced, Practitioner-Level Training Course on Preventive and Protective Measures against Insider Threats in Antwerp, Belgium. Lectures were delivered by experts from 11 Member States, as well as by the International Criminal Police Organization.⁵⁶

58. The Agency held the Second Research Coordination Meeting on Preventive and Protective Measures against Insider Threats at Nuclear Facilities for the furtherance of the related CRP in Vienna in November 2022. Participants presented their current progress, worked collaboratively in groups on the project activities and discussed the TECDOC that is planned to be issued upon conclusion of the project.⁵⁷

⁵⁵ This relates to operative paragraph 47 of resolution GC(66)/RES/7.

⁵⁶ This relates to operative paragraph 49 of resolution GC(66)/RES/7.

⁵⁷ This relates to operative paragraphs 49 and 54 of resolution GC(66)/RES/7.

59. The Agency held a National Training Course on Preventive and Protective Measures against Insider Threats to Nuclear Material in Abu Dhabi in May 2023.⁵⁸

J. Strengthening Information and Computer Security



The International Conference on Computer Security in the Nuclear World took place from 19 to 23 June 2023 at IAEA's Vienna headquarters.

60. The Agency issued the non-serial publication *Computer Security Approaches to Reduce Cyber Risk in the Nuclear Supply Chain* in December 2022 and conducted several training courses related to computer security during the reporting period.⁵⁹ These courses included:

- A Regional Training Course on Conducting Computer Security Assessments in Tokai, Japan, in August–September 2022;
- A National Training Course on Computer Security Incident Response for Nuclear, Radiological and Associated Facilities in São Paulo, Brazil, in September 2022;
- An International Training Course on Protecting Computer Based Systems in Nuclear Security Regimes in Daejeon, Republic of Korea, in September–October 2022;
- Two Regional Training Courses on Computer Security Fundamentals for Nuclear Security, in Vienna in October–November 2022 and in Rabat in February 2023;

⁵⁸ This relates to operative paragraph 49 of resolution GC(66)/RES/7.

⁵⁹ This relates to operative paragraph 51 of resolution GC(66)/RES/7.

- A National Training Course on Conducting Computer Inspections for Nuclear Facilities in Cairo in November 2022;
- A Regional Training Course on Computer Security for Industrial Control Systems for Radioactive Material in Vienna in December 2022;
- An International Workshop on Instrumentation and Control and Computer Security for Small Modular Reactors in Paris in March 2023; and
- A Regional Training Course on Conducting Computer Security Exercises for Nuclear Security in Bariloche, Argentina, in March 2023.

61. In June 2023, the Agency held the International Conference on Computer Security in the Nuclear World: Security for Safety in Vienna. The conference attracted more than 500 registered participants from 94 countries and 7 international organizations, reflecting the high priority that the international nuclear security community places on the topic of computer security. The conference affirmed the Agency's unique role in fostering cooperation between countries and enabling the sharing of technical information and best practices in the adoption of rapidly developing technologies. Recommendations from the conference will help to inform the IAEA's future planning and programmatic activities in relation to implementation of information and computer security activities.⁶⁰

⁶⁰ This relates to operative paragraph 51 of resolution GC(66)/RES/7.

K. Assisting in Building Capacity in Nuclear Forensics



Demonstration of the actions typically taken when a nuclear or radioactive material sample is received and unpacked at a nuclear forensics laboratory during an International Training Course on Nuclear Forensics Methodologies, United States of America, February–March 2023.

62. The Agency extended its Practical Arrangements with the Stockholm International Peace Research Institute in Sweden and with Thailand’s Office of Atoms for Peace for nuclear forensics activities.⁶¹

63. The Agency held an introductory workshop on nuclear forensics for Association of Southeast Asian Nations countries in Daejeon, Republic of Korea in October 2022; a training course providing a practical introduction to nuclear forensics in Sydney, Australia, in November 2022; and an international training course on nuclear forensics methodologies in Richland, United States of America in February–March 2023.⁶²

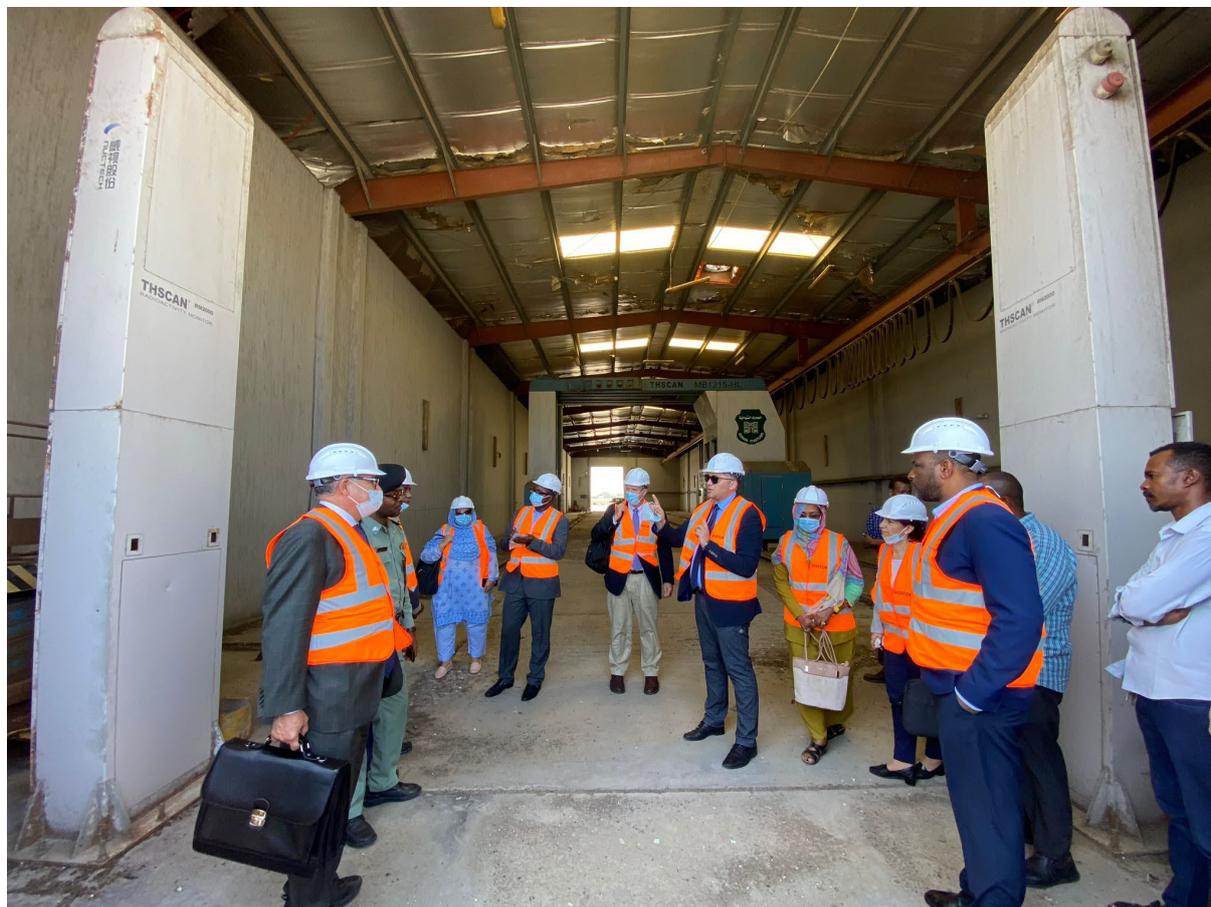
64. A new CRP entitled “Nuclear Forensics Science to Bridge the Radiological Crime Scene to the Nuclear Forensics Laboratory” was launched. It focuses on how nuclear forensics and radiological crime scene management directly enhance nuclear security, helping to ensure that nuclear energy can be used for energy generation, industrial and medical applications, and other peaceful applications.⁶³

⁶¹ This relates to operative paragraph 52 of resolution GC(66)/RES/7.

⁶² This relates to operative paragraph 52 of resolution GC(66)/RES/7.

⁶³ This relates to operative paragraphs 52 and 54 of resolution GC(66)/RES/7.

L. Providing Technical Assistance for MPEs and Detecting Nuclear and Other Radioactive Material out of Regulatory Control



INSServ mission to Sudan, December 2022.

65. During the reporting period, the Agency provided support for 12 MPEs.⁶⁴

66. In collaboration with Egypt, the Agency held a virtual coordination meeting on the implementation of nuclear security measures for the 27th session of the Conference of the Parties of the United Nations Framework Convention on Climate Change in August 2022, and a National Workshop on Responding to Criminal or Intentional Unauthorized Acts involving Nuclear and other Radioactive Material at Main Venues and other Strategic Locations of Major Public Events in October–November 2022 in Cairo. The Agency subsequently provided support for the forthcoming 28th session of the Conference of the Parties, by holding a National Workshop on Developing and Implementing Nuclear Security Systems and Measures for Major Public Events in Dubai, United Arab Emirates, in May 2023.⁶⁵

67. Through an ongoing CRP entitled “Advancing Maintenance, Repair, and Calibration of Radiation Detection Equipment”, the Agency is developing technical documents, hardware and software tools, guidelines, and training materials for radiation detection instrument maintenance, repair and calibration that can be used by Member States to effectively maintain and sustain nuclear security detection systems used for detecting nuclear and other radioactive material out of regulatory control. An associated project

⁶⁴ This relates to operative paragraph 53 of resolution GC(66)/RES/7.

⁶⁵ This relates to operative paragraph 53 of resolution GC(66)/RES/7.

to develop radiation portal monitor kits that can be used for in-field diagnostics, as well as for the training of experts, is also in progress.⁶⁶

68. The Agency began full implementation of the CRP “Facilitation of Safe and Secure Trade Using Nuclear Detection Technology — Detection of RN and Other Contraband”. The CRP is supporting projects in 22 Member States that will enhance the safety–security interface, as well as support trade and customs applications, by developing and demonstrating methods using nuclear detection technologies to detect nuclear and radioactive materials and commercial fraud and public safety hazards, such as explosives, illicit drugs and contaminated goods.⁶⁷

69. The Agency conducted four INSServ peer reviews of States’ nuclear security regimes for material outside of regulatory control, during which experts shared their experiences and lessons learned. These were conducted in Malaysia in October 2022, in Sudan in November–December 2022, in Viet Nam in March 2023 and in Georgia in April–May 2023.⁶⁸

70. The Agency continued the development of a report on the nuclear security arrangements for, and lessons learned from, the preparation and conduct of the 2021 Africa Cup of Nations, which was held in Cameroon in January–February 2022. The Agency also began developing a report on the nuclear security arrangements for, and lessons learned from, the preparation and conduct of the 2022 FIFA U-20 Women’s World Cup, which was held in Costa Rica in August 2022.⁶⁹

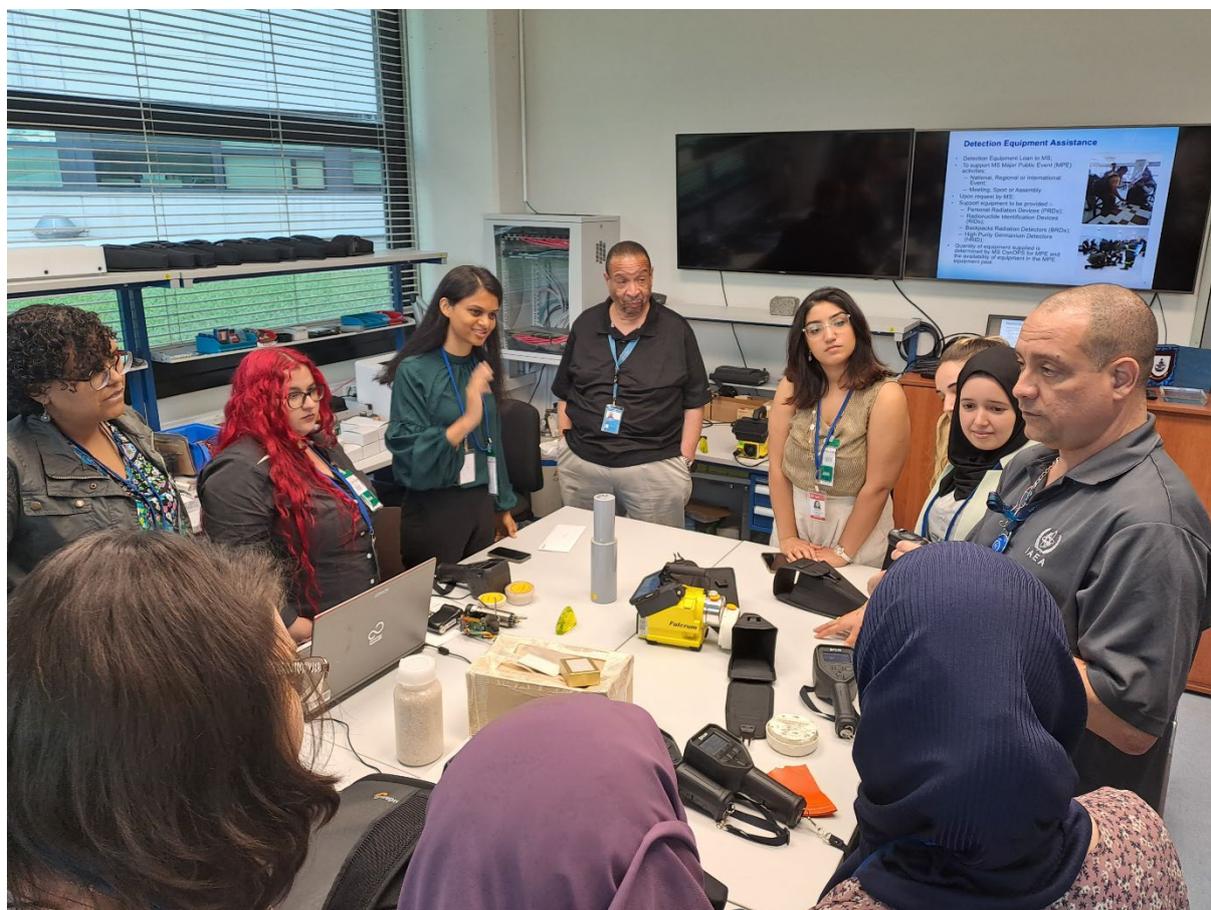
⁶⁶ This relates to operative paragraph 54 of resolution GC(66)/RES/7.

⁶⁷ This relates to operative paragraph 54 of resolution GC(66)/RES/7.

⁶⁸ This relates to operative paragraph 56 of resolution GC(66)/RES/7.

⁶⁹ This relates to operative paragraph 56 of resolution GC(66)/RES/7.

M. Strengthening Agency Internal Planning and Improving Workforce Diversity



Marie Skłodowska-Curie Fellowship Programme fellows at the International School on Nuclear Security, Vienna, August 2022.

71. During the reporting period, the Agency continued to strengthen its results based management approach, specifically to better understand the effectiveness of Agency assistance to States' national efforts in improving their nuclear security regimes. This includes improved coordination between Member State needs assessment and resource mobilization, more focus on project outcomes, and a more systematic approach to capacity building and the deployment of Agency resources in this regard.⁷⁰

72. Through the Women in Nuclear Security Initiative, and in partnership with three universities, the Agency held three webinars on the key role of education in increasing the number of women in the field of nuclear security.⁷¹

73. During the reporting period, 21 fellows of the Agency's Marie Skłodowska-Curie Fellowship Programme (MSCFP) continued their enrolment in master's programmes related to nuclear security. The MSCFP aims to help increase the number of women in the nuclear field.⁷²

74. The Agency supported graduate education programmes in nuclear security by providing fellowships to seven students from seven Member States in the 2022–2023 academic year to attend the

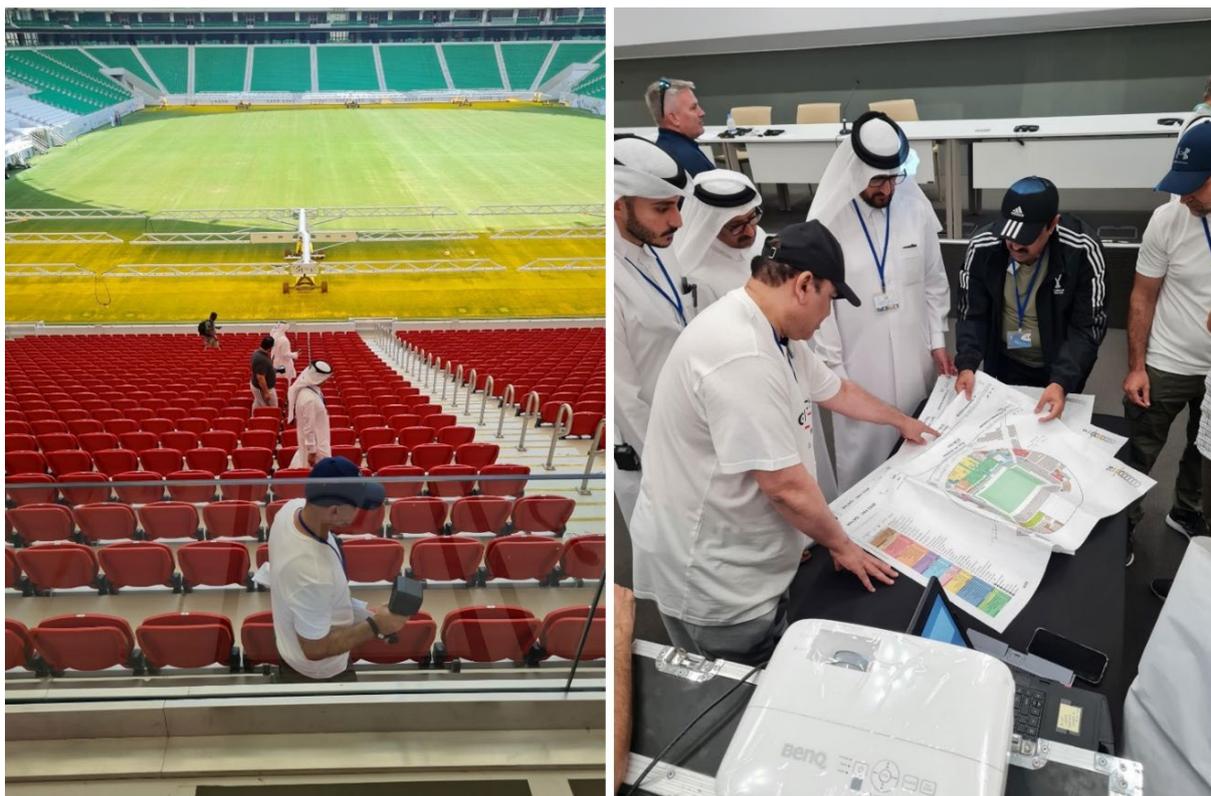
⁷⁰ This relates to operative paragraph 57 of resolution GC(66)/RES/7.

⁷¹ This relates to operative paragraph 58 of resolution GC(66)/RES/7.

⁷² This relates to operative paragraph 58 of resolution GC(66)/RES/7.

master's degree programme in nuclear security at the University of National and World Economy in Bulgaria. This represented an increase in the number of fellowships awarded, as well as broader geographical distribution and greater gender parity of recipients.⁷³

N. Supporting Infrastructure and Technology Upgrades and Associated Training Needs



The Agency provided Qatar with equipment and training to support the country's efforts to strengthen nuclear security measures in preparation for the 2022 FIFA Men's World Cup.

75. The Agency provided continued assistance to four Member States with physical protection upgrades at nuclear facilities. These upgrades are complemented by specialized technical training to support the operation, maintenance and sustainability of physical protection equipment, systems and measures for detection, delay and response.⁷⁴

76. The Agency continued to support Member State requests for loaned or donated hand-held radiation detection equipment in support of their detection systems, including nuclear security assistance for preparation and support for MPEs, and training in radiation detection equipment operation, frontline maintenance and calibration. During the reporting period, 7 Member States received equipment through a loan process; 733 items of equipment in total were loaned from over 1000 items of nuclear security detection and monitoring equipment maintained by the Agency. Additionally, the Agency's equipment laboratory held five training events.⁷⁵

⁷³ This relates to operative paragraph 58 of resolution GC(66)/RES/7.

⁷⁴ This relates to operative paragraph 61 of resolution GC(66)/RES/7.

⁷⁵ This relates to operative paragraph 61 of resolution GC(66)/RES/7.

77. The Agency held a Regional Workshop on Nuclear Security Detection Architecture and Response Frameworks for the Africa Region in Cape Town, South Africa in October 2022.⁷⁶

O. Conclusions

78. All Agency activities related to nuclear security continue to be undertaken in a prioritized manner within available resources and with due regard to the protection of confidential information.⁷⁷

79. The Agency will continue to produce this report and the Nuclear Security Review on an annual basis as complementary documents, within their defined scopes and minimizing duplication, in response to nuclear security resolutions and in consultation with Member States.⁷⁸

80. The Agency has begun an internal review of challenges in the application of Agency safety standards and nuclear security guidance in armed conflict situations. The review will cover nuclear safety and security considerations for all nuclear and radiation facilities and activities. It will analyse the issues and challenges faced at nuclear facilities in terms of practical application of the Agency safety standards and nuclear security guidance during armed conflicts, using the knowledge and experience collected in Ukraine since February 2022 and how these issues and challenges might be addressed, if possible, by all interested parties, including the Agency.⁷⁹

⁷⁶ This relates to operative paragraph 61 of resolution GC(66)/RES/7.

⁷⁷ This relates to operative paragraphs 63 and 66 of resolution GC(66)/RES/7.

⁷⁸ This relates to operative paragraph 64 of resolution GC(66)/RES/7.

⁷⁹ This relates to operative paragraph 65 of resolution GC(66)/RES/7.

Annex

Table of Concordance

Table of Concordance Between Resolution GC(66)/RES/7 Operative Paragraphs (OPs) Associated with Agency Action and Paragraphs of this Report

OP	Report Paragraph	OP	Report Paragraph
1	2	36	42, 43, 44, 45
4	3, 4	37	23, 46, 47
5	6, 7, 8, 9	39	42, 43, 44, 45, 47
7	10	40	48
10	11	41	49, 50, 51
12	12, 13, 14, 15	42	49, 50, 51
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16	14, 15	49	57, 58, 59
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28	29	58	72, 73, 74
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31	30, 31, 32	63	48, 78
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33	32, 36	65	80
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