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NUCLEAR SECURITY

Report by the Director General

Board of Governors General Conference

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(GC(66)/1 and Add.1)

Nuclear Security

Report by the Director General

Summary

Pursuant to resolution GC(65)/RES/9, a report covering activities undertaken by the Agency in the area of nuclear security as well as 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 by the Director General

A. General

1. This report has been produced for the 66th regular session of the General Conference in response to resolution GC(65)/RES/9, 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.¹ This report covers the period from 1 July 2021–30 June 2022.

2. During the reporting period, the Agency continued to implement activities under the *Nuclear Security Plan 2018–2021*, approved by the Board of Governors in September 2017 and taken note of by the General Conference at its 61st regular session in September 2017, and 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 All activities continue to be undertaken in a prioritized manner with due regard to the protection of confidential information.³

3. 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.⁴

4. This report complements the *Nuclear Security Review 2022*. In June 2022, a report by the Director General containing the draft *Nuclear Security Review 2022* was submitted to the Board of Governors. The final version of the *Nuclear Security Review 2022*, prepared in the light of discussions at the Board of Governors, is provided as an information document at the 66th regular session of the Agency's General Conference. The *Nuclear Security Review 2022* includes the global trends and the Agency's activities in 2021, highlighting significant accomplishments. It also presents priorities and related activities for 2022 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 2018–2021*, the *Nuclear Security Plan 2022–2025* and the Agency's Programme and Budget, including outcomes, outputs, timelines and performance indicators. In addition, the *Nuclear Security Review 2022* includes information on external users of the ITDB and on past and planned activities of educational, training and collaborative networks.⁵

¹ The activities are reported in the order of the resolution's operative paragraphs.

² This relates to operative paragraphs 3, 49 and of resolution GC(65)/RES/9.

³ This relates to operative paragraphs 53 and 55 of resolution GC(65)/RES/9.

⁴ This relates to operative paragraphs 1 and 28 of resolution GC(65)/RES/9.

⁵ This relates to operative paragraph 54 of resolution GC(65)/RES/9.

B. Responding to current and evolving challenges and risks to nuclear security

5. The Agency held a virtual Technical Meeting on Artificial Intelligence for Nuclear Technology and Applications in October 2021 to provide a cross-cutting forum to discuss and foster cooperation on artificial intelligence applications, methodologies, tools and enabling infrastructure that have the potential to advance nuclear science, technology and applications. Nuclear security aspects were also considered.⁶



Fig. 1. CRP participants working to test scenarios using a simulator, gather the resulting datasets, and benchmark cyber anomaly detection techniques. (Photo: M. Hewes/IAEA)

6. In October 2021, the Agency held the First Research Coordination Meeting on the Coordinated Research Project on Preventive and Protective Measures against Insider Threats at Nuclear Facilities virtually to discuss current research progress and challenges encountered and share results under the related coordinated research project.⁷

7. The Second Research Coordination Meeting on Improving the Security of Radioactive Material throughout its Lifecycle, Associated Facilities, and Associated Activities was held by the Agency virtually in November 2021 to review the proposed research and activities under the related CRP.⁸

8. The First Research Coordination Meeting on Advancing Maintenance, Repair and Calibration of Radiation Detection Equipment was held by the Agency in Thessaloniki, Greece in May 2022 to initiate an exchange of information among the chief scientific investigators of the related CRP to effectively

⁶ This relates to operative paragraph 4 of resolution GC(65)/RES/9.

⁷ This relates to operative paragraphs 4, 41 and 46 of resolution GC(65)/RES/9.

⁸ This relates to operative paragraphs 4, 33 and 46 of resolution GC(65)/RES/9.

maintain and sustain nuclear security detection system used for detecting nuclear and other radioactive material out of regulatory control.⁹

9. In May-June 2022, the Agency held the Third Research Coordination Meeting on Advancing Radiation Detection Equipment for Detecting Nuclear and Other Radioactive Material Out of Regulatory Control in Bangkok to review the results of the activities conducted under the CRP and to discuss outcomes and recommendations for inclusion in the IAEA Technical Document that will be prepared on the CRP outcomes.¹⁰

10. During the reporting period, the Agency launched a CRP entitled “Facilitation of Safe and Secure Trade Using Nuclear Detection Technology — Detection of RN and Other Contraband”, with 12 Member States participating in the project.¹¹

11. The Agency held a Webinar on the Utilization of InterSpec for High Purity Germanium (HPGe) Analyses Including Shielding in August 2021; a Webinar on the Characterization of Contamination and NORMs with Portable High-Resolution Radionuclide Identification Devices in November 2021; a Webinar on the Use of Unmanned Aerial Vehicles for Radiation Detection and Surveillance in January 2022; and a Webinar on the Nuclear Security Implications of Counterfeit, Fraudulent and Suspect Items in March 2022.¹²

C. Strengthening legal instruments, national legislative and regulatory frameworks and international cooperation

12. Four webinars to promote the universalization of the Convention on the Physical Protection of Nuclear Material (CPPNM) and its Amendment were held by the Agency in August 2021.¹³

13. The Agency, jointly with the United Nations Office on Drugs and Crime, hosted a Seminar to Promote the Universalization of the Amendment to the Convention on the Physical Protection of Nuclear Material and the International Convention for the Suppression of Acts of Nuclear Terrorism in Vienna in November 2021.¹⁴

14. The Agency held two virtual national workshops to raise awareness of the Amendment to the CPPNM for relevant stakeholders and decision makers in the Lao People’s Democratic Republic and Sri Lanka, both in September 2021.¹⁵

15. In cooperation with the Government of Morocco, the Agency held a virtual regional workshop to promote further adherence to the CPPNM and its Amendment for the Africa region in December 2021.¹⁶

⁹ This relates to operative paragraphs 4 and 46 of resolution GC(65)/RES/9.

¹⁰ This relates to operative paragraphs 4 and 46 of resolution GC(65)/RES/9.

¹¹ This relates to operative paragraphs 4 and 46 of resolution GC(65)/RES/9.

¹² This relates to operative paragraph 4 of resolution GC(65)/RES/9.

¹³ This relates to operative paragraph 10 of resolution GC(65)/RES/9.

¹⁴ This relates to operative paragraph 10 of resolution GC(65)/RES/9.

¹⁵ This relates to operative paragraph 10 of resolution GC(65)/RES/9.

¹⁶ This relates to operative paragraph 10 of resolution GC(65)/RES/9.



Fig. 2. Director General Rafael Mariano Grossi opens the First Conference of the Parties to the Amendment to the Convention on the Physical Protection of Nuclear Materials held in Vienna, 28 March -01 April 2022. (Photo: D. Calma/IAEA)

16. The Agency held a hybrid International Seminar on the CPPNM and its Amendment in Vienna in February 2022 to promote universal adherence to the A/CPPNM and to support implementation by its Parties.¹⁷

17. The Agency convened the Conference of the Parties to the Amendment to the Convention on the Physical Protection of Nuclear Material from 28 March to 1 April 2022, in Vienna. To facilitate preparations for the Conference, the Agency held open-ended consultations of Parties to the Amendment and Parties to the CPPNM in October and December 2021 and in January, February and March 2022 to, inter alia, finalize the draft Rules of Procedure and draft Agenda for the Conference and facilitate the development of the draft outcome document. Regional meetings were also convened by the Agency in October, November and December 2021 to assist Parties in preparing for the Conference. On the margins of the Conference, a number of side events were organized. The Agency, in cooperation with Canada, held a side event entitled “Towards Universal Adherence to the Amendment to the Convention on the Physical Protection of Nuclear Material (A/CPPNM): Challenges, Success Stories and the Way Forward”.¹⁸

18. In cooperation with the European Union, the Agency held a side event on European Union–Agency cooperation towards the universalization of the A/CPPNM during the International Conference on Nuclear Law: The Global Debate in April 2022.¹⁹

19. The Agency established an online repository on the Nuclear Security Information Portal (NUSEC) of documents regarding the CPPNM and its Amendment and relevant treaty conferences and continued

¹⁷ This relates to operative paragraph 10 of resolution GC(65)/RES/9.

¹⁸ This relates to operative paragraph 10 and 11 of resolution GC(65)/RES/9.

¹⁹ This relates to operative paragraph 10 of resolution GC(65)/RES/9.

to update it throughout the period. The repository is open to all Parties to the CPPNM and Parties to the Amendment.²⁰

20. The annual Technical Meeting of the Representatives of States Parties to the CPPNM and its Amendment was held virtually in December 2021 to discuss, inter alia, laws and regulations giving effect to the CPPNM and its Amendment, the role of designated Points of Contacts, and national experiences in the implementation of the CPPNM and its Amendment.²¹

21. To share information about Agency activities on the security of radioactive material and to explore technical topics related to regulatory challenges and lessons learned, the Agency organized the virtual Ninth Meeting of the Working Group on Radioactive Material Security (WGRMS) in October 2021.²²

22. The Agency held three Regional Workshops on the Development of Regulatory Infrastructure for Radiation Safety and Security of Radioactive Material in Vienna, two in April 2022 for English and French-speaking countries in the Africa region and English-speaking countries in the Caribbean region, and one in June 2022 for Spanish-speaking countries in the Latin America and Caribbean region. The Agency conducted an Advisory Mission on Regulatory Infrastructure for Radiation Safety and Nuclear Security in the Democratic Republic of Congo in March–April 2022 and in Seychelles in May–June 2022.²³

23. A Regional Workshop on Strategic Directions for Establishing Integrated Management Systems for Regulatory Bodies was held by the Agency in Vienna in May 2022 to discuss and assess with senior managers of regulatory bodies the strategic directions needed to foster and facilitate the development, establishment and maintenance of integrated management systems in their organizations that are consistent with IAEA safety standards and nuclear security guidance.²⁴

24. The Agency held a virtual International Training Course on the Establishment of a Nuclear Security Regime for Nuclear Power Programmes in June–July 2021 to train the participants in the development of nuclear security infrastructure for a national nuclear power programme.²⁵

25. The virtual International Training Course on Establishing Nuclear Security Regulatory Regimes for Emerging Nuclear Power Programmes was held by the Agency in August–September 2021 to provide fundamental awareness, concepts and tools that inform the drafting and execution of State nuclear security regulations in line with Agency nuclear security guidance and other relevant international legal instruments concerning nuclear material, nuclear facilities and associated activities.²⁶

26. The Agency held the International Training Course on Developing Regulations and Associated Administrative Measures for Nuclear Security in Vienna in May 2022 to familiarize the participants with the Agency's guidance on the development and maintenance of a nuclear security regulatory framework and associated administrative measures that are necessary for nuclear security.²⁷

²⁰ This relates to operative paragraph 12 of resolution GC(65)/RES/9.

²¹ This relates to operative paragraph 14 of resolution GC(65)/RES/9.

²² This relates to operative paragraphs 14 and 15 of resolution GC(65)/RES/9.

²³ This relates to operative paragraphs 14 and 15 of resolution GC(65)/RES/9.

²⁴ This relates to operative paragraphs 14 and 15 of resolution GC(65)/RES/9.

²⁵ This relates to operative paragraph 14 of resolution GC(65)/RES/9.

²⁶ This relates to operative paragraph 14 of resolution GC(65)/RES/9.

²⁷ This relates to operative paragraphs 14 and 15 of resolution GC(65)/RES/9.



Fig. 3. Radioactive sources are used worldwide in medicine, industry and research. Once they fall out of use, the risk of them being unprotected or abandoned increases. The one pictured was used at a training exercise in Wiener Neustadt, Austria. (Photo: D. Calma / IAEA)

27. To provide a forum for discussion and the sharing of practices related to the development and management of regulatory competence with regard to performing nuclear security regulatory functions, the Agency held a virtual Technical Meeting on Regulatory Competence Management in the Security of Nuclear Material and Nuclear Facilities in October 2021.²⁸

28. The Agency held three virtual national training courses on regulatory control of radiotherapy practices for safety and security, for Ecuador in August 2021, for El Salvador in November 2021 and for Costa Rica in May 2022.²⁹

29. In March and June 2022 respectively, the Agency held a Regional Training Course on the Authorization and Inspection of Radiation Safety and Nuclear Security for Medical Practices in Montevideo and a Regional Training Course on the Authorization and Inspection of Radiation Safety and Nuclear Security for Industrial Practices in Chile.³⁰

30. The Agency conducted eight virtual expert missions, upon request, to Zambia in June 2021, Cameroon in August 2021, Sudan in September 2021, Cambodia in October 2021, Nigeria and the United Republic of Tanzania in November 2021, Kuwait in December 2021 and the Niger in June 2022 to assist in the revision and update of draft national regulations for the security of radioactive material in use and storage.³¹

31. A transport security tabletop exercise was conducted by the Agency in Skopje in October 2021 to enhance the coordination and cooperation between the participating Member States in the

²⁸ This relates to operative paragraphs 14 and 15 of resolution GC(65)/RES/9.

²⁹ This relates to operative paragraph 14 of resolution GC(65)/RES/9.

³⁰ This relates to operative paragraphs 14 and 15 of resolution GC(65)/RES/9.

³¹ This relates to operative paragraph 14 of resolution GC(65)/RES/9.

implementation of arrangements for the security of any radioactive material in transport that is not nuclear material.³²

32. A virtual national workshop on drafting transport security regulations was held by the Agency for Bolivia in August 2021 to enhance the participants' understanding of the need for a transport security plan, and to provide them with the necessary knowledge to develop, design, maintain, and evaluate such a plan.³³

33. The Agency held four virtual Meetings of the Network of Front Line Officers' Working Group, for Africa in September 2021, for Latin America in October 2021, for Europe and Central Asia in October 2021, and for Asia in November 2021, to share best practices and lessons learned in nuclear security detection operations and to encourage networking and regional cooperation in this area.³⁴

34. Two virtual Nuclear Security Information Exchange Meetings were held by the Agency, in October 2021 and April 2022, attended by Euratom/European Union, European Police Office, International Criminal Police Organization, Nuclear Threat Initiative, United Nations (UN) 1540 Committee, UN Counterterrorism Office, UN Office for Disarmament Affairs, UN Office on Drugs and Crime and Vienna Center for Disarmament and Nonproliferation. The purpose of these meetings was to provide for a systematic and active exchange of information on planned events and activities, to identify areas of cooperation with a view to ensuring effective use of resources and avoiding duplication and overlap, and to further strengthen cooperation.³⁵

D. Developing Agency nuclear security guidance and improving communication

35. The Agency continued to increase its external communication on nuclear security. This included providing nuclear security-related communications and outreach through its media platforms, including social media. Indicatively, the Agency published 31 articles, seven press releases and one video on nuclear security-related topics on the Agency's website. Nuclear security was also mentioned in many Agency communications and outreach not primarily focused on nuclear security.³⁶

36. The Nuclear Security Guidance Committee (NSGC) started its fourth three-year term in June 2021. During the reporting period, the Agency convened two regular meetings of the NSGC, virtually in December 2021 and hybrid in June 2022 to enable representatives of all Member States to participate in the work of the NSGC. In addition, an Extraordinary Meeting of the NSGC was convened in August 2021, and a joint meeting of the NSGC and the Emergency Preparedness and Response Standards Committee was convened virtually in November 2021.³⁷

37. The Agency held a hybrid Meeting of Legal and Technical Experts on the Need for Revision of the Nuclear Security Fundamentals in Vienna in January 2022 to discuss the need for a revision of *Objective and Essential Elements of a State's Nuclear Security Regime* (IAEA Nuclear Security Series No. 20) in the near term. As a follow-up to this meeting, in June 2022, the Agency circulated a

³² This relates to operative paragraph 14 of resolution GC(65)/RES/9.

³³ This relates to operative paragraph 14 of resolution GC(65)/RES/9.

³⁴ This relates to operative paragraph 15 of resolution GC(65)/RES/9.

³⁵ This relates to operative paragraph 22 of resolution GC(65)/RES/9.

³⁶ This relates to operative paragraph 16 of resolution GC(65)/RES/9.

³⁷ This relates to operative paragraph 17 of resolution GC(65)/RES/9.

questionnaire to all Member States requesting detailed information on changes they would recommend to Nuclear Security Series No. 20 in the event that a revision of this publication were to be undertaken.³⁸

38. As of April 2022, the Agency had translated all Nuclear Security Series publications at the Implementing Guide level into Arabic, French and Spanish.³⁹

39. The Agency published one new Implementing Guide and one new Technical Guidance publication in the Nuclear Security Series, as well as two revisions of existing Technical Guidances: *Computer Security for Nuclear Security* (IAEA Nuclear Security Series No. 42-G), *Security Management of Radioactive Material in Use and Storage and of Associated Facilities* (IAEA Nuclear Security Series No. 43-T), *Computer Security Techniques for Nuclear Facilities* (IAEA Nuclear Security Series No. 17-T (Rev 1) and *Model Academic Curriculum in Nuclear Security* (IAEA Nuclear Security Series No. 12-T (Rev. 1)).⁴⁰

40. At their October 2021 meetings, the International Nuclear Safety Group and the Advisory Group on Nuclear Security approved for publication their draft joint report *A System View of Nuclear Security and Nuclear Safety — Identifying Interfaces and Building Synergies*.⁴¹

41. The Agency published *Managing the Interface between Safety and Security for Normal Commercial Shipments of Radioactive Material* (Technical Reports Series No. 1001) in September 2021.⁴²



Fig. 4. The Agency is continuously training and guiding country experts on the protection of their nuclear and radioactive facilities and resources against nuclear security threats. (Photo: D. Calma/IAEA)

42. The Agency held a virtual Technical Meeting on the Use of Safety Analysis Approaches for Nuclear Security Purposes in October 2021 to discuss current approaches with a focus on potential ways

³⁸ This relates to operative paragraph 17 of resolution GC(65)/RES/9.

³⁹ This relates to operative paragraph 18 of resolution GC(65)/RES/9.

⁴⁰ This relates to operative paragraph 19 of resolution GC(65)/RES/9.

⁴¹ This relates to operative paragraph 19 of resolution GC(65)/RES/9.

⁴² This relates to operative paragraph 19 of resolution GC(65)/RES/9.

that insights from safety analysis, both probabilistic and deterministic, could be used to support nuclear security considerations.⁴³

E. Promoting nuclear security culture

43. The Agency held the Third International Seminar to Share Experience and Best Practices from Conducting International Physical Protection Advisory Service Missions in a hybrid format in December 2021 to provide a forum for sharing and discussing lessons learned, benefits received, and challenges experienced during the preparation and conduct of International Physical Protection Advisory Service (IPPAS) missions and follow-up activities.⁴⁴

44. A virtual International Workshop on International Nuclear Security Advisory Service Guidelines was held in September 2021 to prepare experts to conduct International Nuclear Security Advisory Service missions in accordance with *International Nuclear Security Advisory Service (INSServ) Guidelines* (IAEA Services Series No. 39).⁴⁵

45. The Agency held National Workshops on Nuclear Security Culture in Practice in Yaounde in July 2021, in Cernavoda, Romania in October 2021 and in Kinshasa in May 2022 to enhance the participants' understanding of the concept of nuclear security culture and its application in practice.⁴⁶

46. A national workshop on conducting nuclear security culture self-assessments was held by the Agency in Selangor, Malaysia in October 2021 to enhance the participants' understanding of the Agency's nuclear security culture self-assessment methodology.⁴⁷

F. Strengthening education and training

47. The Agency held the hybrid Leadership Academy for Nuclear Security in Vienna in May 2022 to help build leadership skills among middle and senior managers working in the field of nuclear security.⁴⁸

48. During the reporting period, the Agency continued its training and train-the-trainers programmes based on the Nuclear Security Series, which resulted in 6999 participants taking part in training and related events (1728 participants taking part in 51 training activities, and 5271 participants taking part in 42 webinars). In addition, 1728 new users completed 3548 e-learning modules.⁴⁹

49. The Agency continues to devote additional resources to the development, translation, revision and maintenance of e-learning courses to make training more readily available. Since the conception of the e-learning project, 26569 Agency nuclear security e-learning modules have been completed by 11636 users from 177 States through over 67029 learning hours. Eighteen e-learning modules are available in

⁴³ This relates to operative paragraph 19 of resolution GC(65)/RES/9.

⁴⁴ This relates to operative paragraphs 23 and 33 of resolution GC(65)/RES/9

⁴⁵ This relates to operative paragraph 23 of resolution GC(65)/RES/9.

⁴⁶ This relates to operative paragraphs 23 and 24 of resolution GC(65)/RES/9.

⁴⁷ This relates to operative paragraphs 23, 24 and 51 of resolution GC(65)/RES/9.

⁴⁸ This relates to operative paragraph 25 of resolution GC(65)/RES/9.

⁴⁹ This relates to operative paragraph 25 of resolution GC(65)/RES/9

Arabic, Chinese, English, French, Russian and Spanish, and one new module entitled “Introduction to Nuclear Forensics” was developed, bringing the total number of e-learning modules to 19.⁵⁰

50. The Agency continues to regularly identify areas where new and updated training courses are needed based on information from Integrated Nuclear Security Support Plans (INSSPs) and the Nuclear Security Information Management System. During the reporting period, following an exercise to map training materials, 66 items in the Nuclear Security Training Catalogue were reviewed, training materials for 48 courses and workshops were revised and updated, and training materials for four new courses or workshops were developed.⁵¹

51. The Agency held the annual meeting of the International Nuclear Security Education Network (INSEN) virtually in August 2021 to review and revise the INSEN action plan and to discuss cooperation and collaboration with the International Network for Nuclear Security Training and Support Centres (NSSC Network).⁵²

52. Four new institutions, from University of Siena, Italy; Tajourna Nuclear Research Center, Libya; King Abdul Aziz University, Saudi Arabia; and the International Nuclear Security Forum, USA, joined INSEN during the reporting period.⁵³

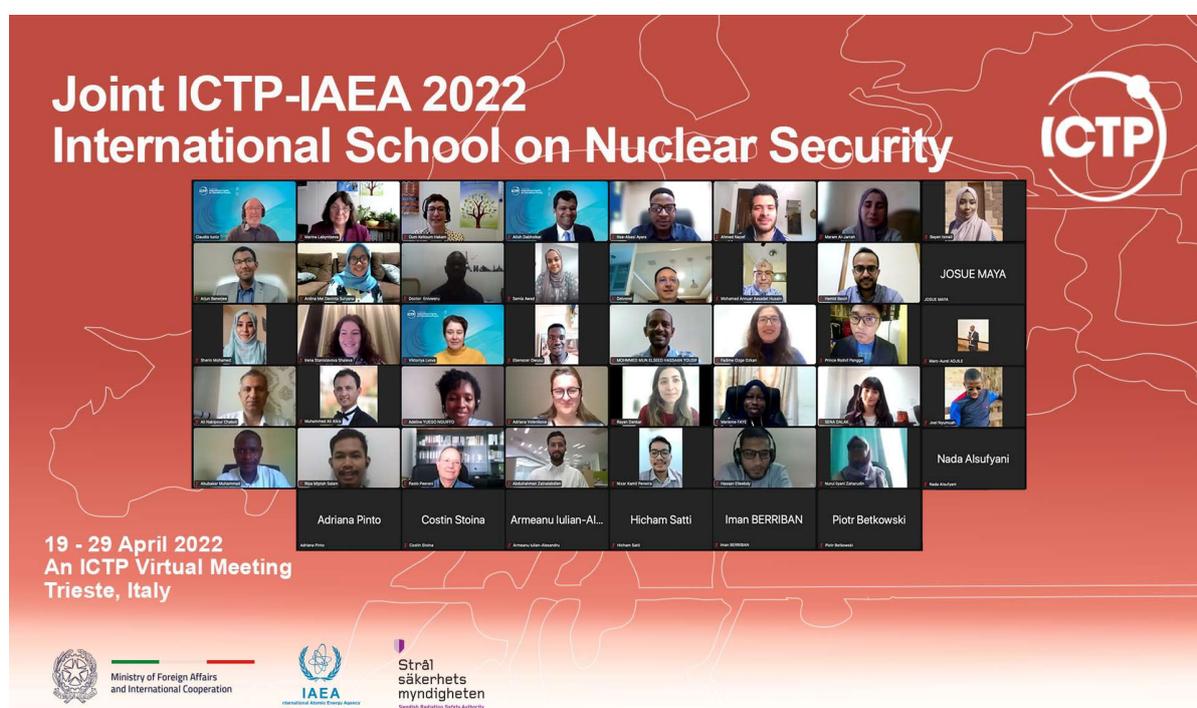


Fig. 5. Group photo of participants in the joint ICTP-IAEA International School on Nuclear Security, convened virtually in April 2022. (Photo: M. Maffione, ICTP)

53. The Agency held virtual International Schools on Nuclear Security in cooperation with Saudi Arabia in Arabic in October 2021, with Indonesia in November 2021 and with Italy in April 2022. It also held two hybrid Schools in Vienna for Marie Skłodowska-Curie Fellowship Programme (MSCFP)

⁵⁰ This relates to operative paragraph 25 of resolution GC(65)/RES/9.

⁵¹ This relates to operative paragraph 25 of resolution GC(65)/RES/9.

⁵² This relates to operative paragraphs 15 and 26 of resolution GC(65)/RES/9.

⁵³ This relates to operative paragraph 26 of resolution GC(65)/RES/9.

fellows in November and December 2021. The Agency also held a workshop on the CPPNM and its Amendment for MSCFP fellows in December 2021.⁵⁴

54. The Agency signed a Collaborating Centre Agreement with the Moroccan Nuclear and Radiation Safety and Security Agency, covering the field of nuclear security response, in July 2021.⁵⁵

55. The Agency held a ground-breaking ceremony to establish a Nuclear Security Training and Demonstration Centre (NSTDC) at its Seibersdorf laboratories in Vienna in July 2021, to provide optimal support to States through the use of appropriate technical infrastructure and equipment. Once completed, this specialized training facility will complement and fill gaps in training capabilities that do not commonly exist among institutions in States and will further enhance Member States' capacity building, upon request, with advanced technology and expertise. The Agency continued to engage and consult with Member States in relation to the NSTDC, including by holding three virtual consultancy meetings on operational requirements and the statement of work for physical protection equipment for the NSTDC in July 2021; on infrastructure integration requirements for computer security training and demonstration activities at the NSTDC in July 2021; and on the coordination of detection and response training and demonstration activities at the NSTDC in August 2021. Additionally, two informal technical briefings on the NSTDC for Member States were held by the Agency in December 2021 and May 2022 to provide updates on the progress of the establishment of the facility, with a specific focus on ensuring its sustainability.⁵⁶



Fig. 6. Ground breaking ceremony for new Nuclear Security Training and Demonstration Centre (NSTDC) at Seibersdorf, July 2021. (Photo: D. Calma/IAEA)

⁵⁴ This relates to operative paragraphs 26 and 50 of resolution GC(65)/RES/9.

⁵⁵ This relates to operative paragraph 26 of resolution GC(65)/RES/9.

⁵⁶ This relates to operative paragraph 27 of resolution GC(65)/RES/9.

G. Assisting in the development and implementation of Integrated Nuclear Security Support Plans (INSSPs)

56. The Agency conducted 13 in person INSSP missions, to Albania and Senegal in July 2021, to the Niger in August 2021, to Moldova and Seychelles in September 2021, to Côte d'Ivoire in October 2021, to Georgia in December 2021, to Guinea in February 2022, to Armenia in March 2022, to Benin and Hungary in April 2022, to the Sudan in May 2022 and to the Philippines in June 2022.⁵⁷

57. The second Technical Meeting of the Points of Contact for Integrated Nuclear Security Support Plans was held virtually in December 2021 to discuss the application of INSSPs for planning Agency nuclear security assistance to Member States, to share experiences and lessons learned from the development and implementation of such plans and to provide participants with a common understanding of the INSSP development process.⁵⁸

58. The Agency facilitated one donor coordination meeting in December 2021 and 17 bilateral donor meetings to continue 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.⁵⁹

H. Supporting continued dialogue on the security of radioactive sources and new technologies

59. The Agency organized the International Conference on the Safety and Security of Radioactive Sources: Accomplishments and Future Endeavours in Vienna in June 2022. The conference fostered the exchange of Member States' experiences and anticipated future developments related to establishing and maintaining a high level of safety and security of radioactive sources throughout their life cycle.⁶⁰

60. The Agency organized the International Conference on the Safe and Secure Transport of Nuclear and Radioactive Materials virtually in December 2021. The conference increased Member States' awareness of the importance of effectively managing the interface between transport safety and transport security. The sessions and discussions during the Conference informed the Agency of the potential needs of Member States in this area, which will assist in the planning of future programmes.⁶¹

61. The Agency conducted six IPPAS missions: to Belarus in July 2021, to Burkina Faso in September 2021, to the Czech Republic and Turkey in November 2021, to Senegal in December 2021 and to Finland in June 2022.⁶²

62. Three training courses (one national, one regional and one international) were held by the Agency on security of radioactive material in use and storage, for Bosnia and Herzegovina in Sarajevo in

⁵⁷ This relates to operative paragraph 31 of resolution GC(65)/RES/9.

⁵⁸ This relates to operative paragraphs 31 and 48 of resolution GC(65)/RES/9.

⁵⁹ This relates to operative paragraphs 32 and 49 of resolution GC(65)/RES/9.

⁶⁰ This relates to operative paragraph 33 of resolution GC(65)/RES/9.

⁶¹ This relates to operative paragraph 33 of resolution GC(65)/RES/9.

⁶² This relates to operative paragraph 33 of resolution GC(65)/RES/9.

February 2022, in Cotonou, Benin for French-speaking African countries in May 2022 and in Vienna in April 2022, to enhance the participants' understanding of key Agency guidance on the security of radioactive material and associated facilities in use and storage.⁶³

63. The Agency conducted in-field physical protection assessment missions to four Member States and conducted three virtual workshops to support the enhancement of physical protection measures at facilities with high activity radioactive material in use and storage, as part of project “Strengthening Physical Protection at Facilities with High Activity Radioactive Sources towards Enhancing Nuclear Security Globally.”⁶⁴

64. The Second Coordination Meeting of the Nuclear Security Project on Enhancing Nuclear Security through the Sustainable Management of Disused Sealed Radioactive Sources in Latin America and the Caribbean, Africa and Asia and the Pacific regions was held virtually in August 2021 to evaluate the progress of implementation of the planned activities against the established performance indicators of the project outputs.⁶⁵

65. Three virtual expert missions to Sudan and Zambia in July 2021 and to Tunisia in November 2021, were conducted by the Agency upon request, to assist with the review and update of draft national policy and strategy for disused sealed radioactive sources.⁶⁶



Fig. 7. Regional Training Course on the Security of Radioactive Material in Use and Storage, Benin, 23-27 May 2022. (Photo: Y. El Abbari/IAEA)

66. The Agency held the hybrid Technical Meeting on Safety, Security and Safeguards by Design for Small Modular Reactors in Vienna in June 2022 to share opinions and experiences on safety, security

⁶³ This relates to operative paragraph 33 of resolution GC(65)/RES/9.

⁶⁴ This relates to operative paragraph 33 of resolution GC(65)/RES/9.

⁶⁵ This relates to operative paragraphs 33 and 35 of resolution GC(65)/RES/9.

⁶⁶ This relates to operative paragraphs 33 and 35 of resolution GC(65)/RES/9.

and safeguards interfaces and particular examples of their consideration for existing and new advanced nuclear reactors.⁶⁷

67. In August 2021, the Agency held a virtual Open-ended Meeting of Legal and Technical Experts on the Implementation of the Guidance on the Management of Disused Radioactive Sources, to share with Member States the results of four virtual regional meetings on the management of disused radioactive sources, as recommended by the Code of Conduct on the Safety and Security of Radioactive Sources and its supplementary Guidance on the Management of Disused Radioactive Sources, and to further discuss the challenges faced by regulatory bodies and other stakeholders in this area.⁶⁸

68. The Agency held a virtual technical briefing for Member States on the formalized process for the exchange of information regarding the Code of Conduct on the Safety and Security of Radioactive Sources in October 2021 to provide information related to the formalized process.⁶⁹

69. 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 was held by the Agency in Vienna in May 2022 to provide information on Code of Conduct and its supplementary Guidance on the Import and Export of Radioactive Sources and Guidance on the Management of Disused Radioactive Sources.⁷⁰

I. Facilitating information exchange through the Incident and Trafficking Database (ITDB)

70. The ninth Triennial Technical Meeting of States' Points of Contact for the Incident and Trafficking Database (ITDB) was held in Vienna in April 2022 to exchange information between the Agency and ITDB points of contact.⁷¹

71. The third International Training Course for New and Prospective Points of Contact of the Incident and Trafficking Database was held virtually in September 2021.⁷²

72. The Agency held two workshops (one regional and one national) on nuclear security information exchange and coordination, in Santiago in May 2022 and in Panama City for Central America and the Caribbean region in June 2022, respectively, to strengthen national, regional and international capacity to prevent and combat illicit trafficking in nuclear and other radioactive material through enhanced information exchange and cooperation.⁷³

73. The Agency provided quarterly ITDB analytical summary reports, an annual factsheet summarizing ITDB incidents for public information and, in response to requests from Member States, additional information services in support of one major public event (MPE).⁷⁴

⁶⁷ This relates to operative paragraphs 19 and 34 of resolution GC(65)/RES/9.

⁶⁸ This relates to operative paragraph 35 of resolution GC(65)/RES/9.

⁶⁹ This relates to operative paragraph 35 of resolution GC(65)/RES/9.

⁷⁰ This relates to operative paragraph 35 of resolution GC(65)/RES/9.

⁷¹ This relates to operative paragraph 39 of resolution GC(65)/RES/9.

⁷² This relates to operative paragraph 39 of resolution GC(65)/RES/9.

⁷³ This relates to operative paragraph 39 of resolution GC(65)/RES/9.

⁷⁴ This relates to operative paragraph 39 of resolution GC(65)/RES/9.

J. Advising on threat assessment, including for insider threats, and the use of Nuclear Material Accounting and Control (NMAC)

74. A virtual international workshop on threat assessment and design basis threat (DBT) was held in September 2021 and a virtual regional workshop on threat assessment and DBT for French-speaking African countries in October 2021.⁷⁵

75. In January 2022, a National Training Course on Nuclear Material Accounting and Control for Nuclear Security Purposes at Facilities was held by the Agency in Cairo to raise awareness of nuclear material accounting and control systems at nuclear facilities to address nuclear security needs and objectives, and to familiarize the participants with relevant binding and non-binding instruments.⁷⁶

76. A hybrid International Training Course on Nuclear Material Accounting and Control for Practitioners was held by the Agency in February 2022 to provide hands-on training in domestic nuclear material accounting and control techniques in order to ensure accounting for, and control of, all nuclear material in facilities.⁷⁷

K. Strengthening information and computer security

77. The Agency held the hybrid Technical Meeting on Instrumentation and Control and Computer Security for Small Modular Reactors and Microreactors in Vienna in February 2022 to enhance cooperation and information exchange among Member States and selected organizations in the areas of instrumentation and control, and computer security, regarding the near-term deployment of small modular reactors and microreactors.⁷⁸

78. An international training course to train the trainers on computer security fundamentals was held by the Agency in March 2022 to provide trainers with the tools and methods that will enable them to train professionals in the Agency's newly revised computer security fundamentals for nuclear security training course.⁷⁹

⁷⁵ This relates to operative paragraphs 41 and 51 of resolution GC(65)/RES/9.

⁷⁶ This relates to operative paragraphs 35 and 41 of resolution GC(65)/RES/9.

⁷⁷ This relates to operative paragraph 41 of resolution GC(65)/RES/9.

⁷⁸ This relates to operative paragraph 43 of resolution GC(65)/RES/9.

⁷⁹ This relates to operative paragraphs 25 and 43 of resolution GC(65)/RES/9.



Fig. 8. Visit at the AIT Austrian Institute of Technology Cyber Range where IAEA training courses in computer security are hosted (Photo: J. Zinner/AIT)

79. In May 2022, the Agency held the Technical Meeting on Computer Security Regulations in Nuclear Security in Berlin to provide an international forum for information exchange on developing computer security regulations for nuclear security.⁸⁰

80. The Agency signed an agreement with the AIT Austrian Institute of Technology through which the AIT became the first IAEA Collaborating Centre for information and computer security for nuclear security in May 2022. Under the agreement, the AIT will provide support for international and regional training courses and exercises in the area of computer security for nuclear facilities and activities, develop technical demonstration modules for enhancing awareness about cyber threats and contribute to the development of training materials for the NSTDC.⁸¹

81. In January 2022, the Agency held the First Programme Committee Meeting on the 2023 International Conference on Computer Security in the Nuclear World: Security for Safety, planned for June 2023.⁸²

82. The Agency conducted four virtual training courses on information and computer security: one on conducting computer security inspections, two on conducting computer security assessments and one on computer security incident response for nuclear facilities.⁸³

83. In October 2021, the Agency conducted a mission to Brazil for the “Cyber Guardian Exercise 3.0” to support the preparation and execution of the national computer security exercise, to assess the effectiveness of nuclear organizations in responding to computer security threats, and to promote the sharing of national and international information on cyber-threats.⁸⁴

⁸⁰ This relates to operative paragraph 43 of resolution GC(65)/RES/9.

⁸¹ This relates to operative paragraph 43 of resolution GC(65)/RES/9.

⁸² This relates to operative paragraph 43 of resolution GC(65)/RES/9.

⁸³ This relates to operative paragraph 43 of resolution GC(65)/RES/9.

⁸⁴ This relates to operative paragraph 43 of resolution GC(65)/RES/9.

84. The Agency conducted five webinars on the application of the Agency's information and computer security guidance from July to December 2021.⁸⁵

L. Assisting in building capacity in nuclear forensics

85. The Agency launched a nuclear forensics e-learning module, which provides participants with an overview and basic introduction to nuclear forensics, on the Agency's learning management system in September 2021.⁸⁶



Fig. 9. Participants at a meeting on nuclear forensics attended a radiological crime scene management demonstration. (Photo: D. Calma/IAEA)

86. The Agency facilitated a technical visit for scientific specialists in nuclear forensics from Hungary, the Republic of Moldova and Serbia to observe the operations of the Laboratory for Microparticle Analysis in Moscow in October 2021.⁸⁷

87. In November and December 2021, the Agency held three introductory webinars on *Nuclear Forensics in Support of Investigations* (IAEA Nuclear Security Series No. 2-G (Rev. 1)), in Arabic, French, and Spanish.⁸⁸

88. The hybrid Technical Meeting on Nuclear Forensics: From National Foundations to Global Impact was held in Vienna in April 2022 to discuss the application of nuclear forensics in the prevention and response to events involving nuclear and other radioactive materials out of regulatory control, as well

⁸⁵ This relates to operative paragraph 43 of resolution GC(65)/RES/9.

⁸⁶ This relates to operative paragraph 44 of resolution GC(65)/RES/9.

⁸⁷ This relates to operative paragraph 44 of resolution GC(65)/RES/9.

⁸⁸ This relates to operative paragraph 44 of resolution GC(65)/RES/9.

as the application of nuclear forensics in radiological crime scene management and judicial proceedings.⁸⁹

M. Providing technical assistance for major public events

89. The Agency supported the implementation of nuclear security measures for eight MPEs in eight Member States: the 2020 UEFA European Football Championship in Romania (held in 2021), the 2021 Africa Cup of Nations in Cameroon, the 18th Francophone Summit in Tunisia, the 2021 African Union Summit on Industrialization and Economic Diversification in the Niger, the 2021 Commonwealth Heads of Government Meeting in Rwanda (held in June 2022), the 2022 FIFA U-20 Women's World Cup in Costa Rica, the 2022 FIFA World Cup in Qatar, and several MPEs conducted or planned in China, including the 2022 Olympic Winter Games.⁹⁰



Fig. 10. Regional Workshop on Developing a National Framework for Managing the Response to Criminal or Intentional Unauthorized Acts involving Material Out of Regulatory Control, Rabat, Morocco, 28 March - 1 April 2022 (Photo: Agence Marocaine de Sûreté et de Sécurité Nucléaires et Radiologiques- AMSSNuR).

90. The Agency held the International Workshop to Raise Awareness of Nuclear Security Measures for Major Public Events among Senior Officials in Madrid in June 2022 raise awareness of the nuclear security systems and measures described in the Implementing Guide *Nuclear Security Systems and*

⁸⁹ This relates to operative paragraph 44 of resolution GC(65)/RES/9.

⁹⁰ This relates to operative paragraph 45 of resolution GC(65)/RES/9.

Measures for Major Public Events (IAEA Nuclear Security Series No. 18), and to present the benefits of implementing these measures as part of a State's overall security at MPEs.⁹¹

91. The Agency held several webinars, in English and Spanish, covering various topics related to the implementation of nuclear security systems and measures for MPEs, in July and September 2021.⁹²

N. Strengthening Agency internal planning and improving workforce diversity

92. During the period December 2021–May 2022, the Agency conducted an evaluation of its management of the nuclear security programme to assess results-based management in the planning, implementation, monitoring and assessment of the programme and the Nuclear Security Plan for the past two cycles (2018–2019 and 2020–2021).⁹³

93. The Agency held three Women in Nuclear Security Initiative webinars, on “Women in Information and Computer Security in the Nuclear World” in July 2021, on “Women in Nuclear Security Inspections” in November 2021 and on “Women in Nuclear Security Law Enforcement” in February 2022.⁹⁴

94. The Agency held the first of the series of webinars, entitled “Education as a Key to Addressing the Gender Equality Gap in Global Nuclear Security”, in March 2022 in cooperation with Amity University, India.⁹⁵

O. Conclusion

95. 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.

⁹¹ This relates to operative paragraph 45 of resolution GC(65)/RES/9.

⁹² This relates to operative paragraph 45 of resolution GC(65)/RES/9.

⁹³ This relates to operative paragraph 49 of resolution GC(65)/RES/9.

⁹⁴ This relates to operative paragraph 50 of resolution GC(65)/RES/9.

⁹⁵ This relates to operative paragraph 50 of resolution GC(65)/RES/9.

Annex

Table of Concordance

Table of Concordance Between Resolution GC(65)/RES/9 Operative Paragraphs (OPs) Associated with Agency Action and Paragraphs of this Report

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