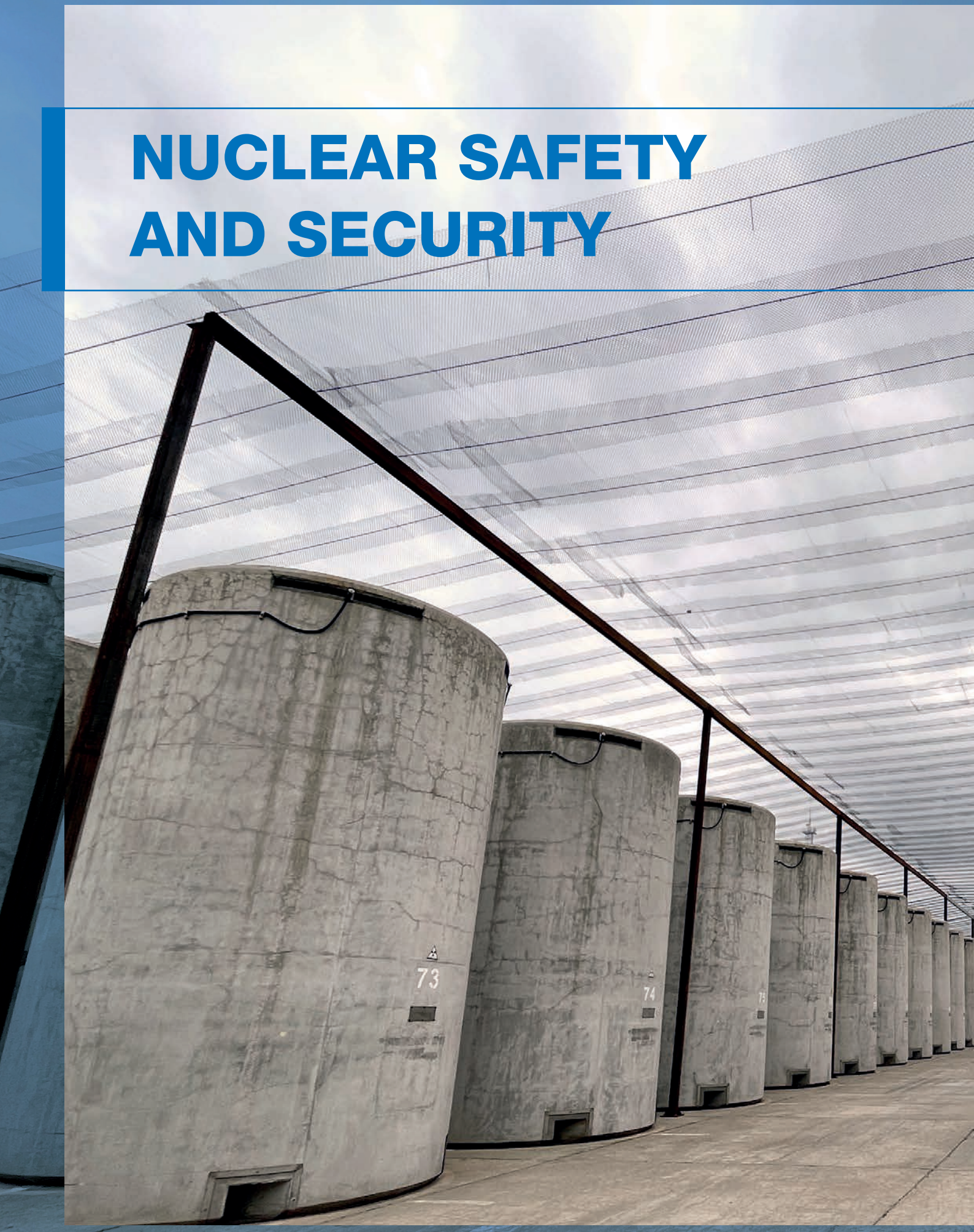
NUCLEAR SAFETY AND SECURITY



Building and maintaining a robust global framework for nuclear safety and security is a long term, demanding imperative, which requires patience and perseverance. Nuclear safety and security are sovereign responsibilities, but nuclear safety and security at the global level can be robust only if national safety and security frameworks are strong and consistently apply international safety standards and nuclear security guidance. There are no borders for nuclear safety and security implications.

Lydie Evrard
Deputy Director General
and Head of the Department
of Nuclear Safety and Security

Nuclear Safety and Security

172
safety-related training activities

125
security-related training activities

9
Member States assisted with physical protection upgrades

63
safety- and security-related peer review and advisory services

- **55** safety-related
- **8** security-related

168
incidents reported to the Incident and Trafficking Database

93 Parties to the Convention on Nuclear Safety — **2** new Parties

89 Parties to the Joint Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management — **1** new Party

133 Parties to the Convention on Early Notification of a Nuclear Accident — **1** new Party

128 Parties to the Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency — **1** new Party

164 Parties to the Convention on the Physical Protection of Nuclear Material — No new Parties

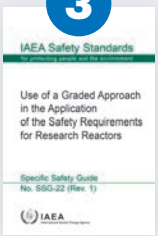
135 Parties to the Amendment to the Convention on the Physical Protection of Nuclear Material — **4** new Parties

Most viewed IAEA Safety Standards published in 2023

1 — **2712** views

2 — **2410** views

3 — **2391** views



In 2023, a total of 17 IAEA Safety Standards were published.

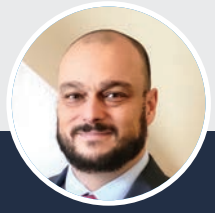
65 years of IAEA Safety Standards

INCIDENT AND EMERGENCY PREPAREDNESS AND RESPONSE

OBJECTIVES

To maintain and further enhance efficient Agency, national and international EPR capabilities and arrangements for effective response to nuclear or radiological incidents and emergencies independent of the triggering event(s).

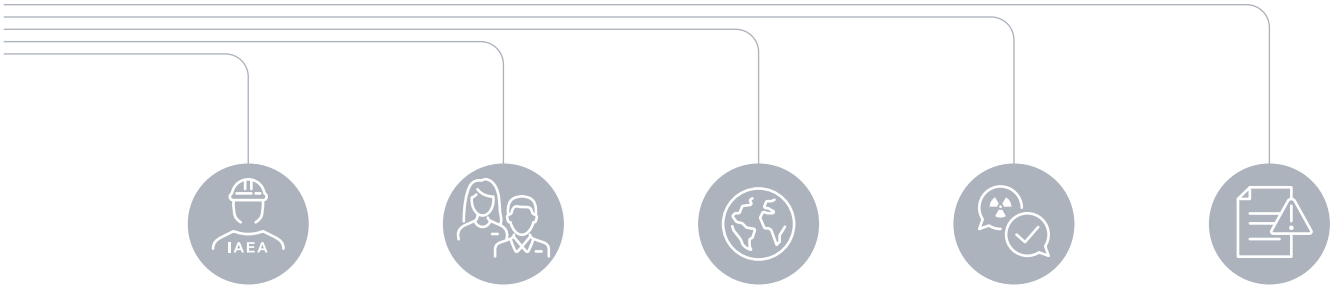
To improve exchange of information on nuclear or radiological incidents and emergencies among Member States, international stakeholders, and the public and media in the preparedness stage of, and during response to, nuclear or radiological incidents and emergencies, independent of the triggering event(s).



"

The IAEA conducted an EPREV mission of the nuclear emergency arrangements in Canada in 2019 and a follow-up mission in 2023. Canada responded to all recommendations from international counterparts, demonstrating Canada's commitment to continuous improvement of our emergency preparedness programme and protecting the health and safety of Canadians.

Keith T. Henderson
Director of the Radiation Protection Bureau, Health Canada



6
Convention Exercises conducted
2 ConvEx-1
4 ConvEx-2
(involving 120 Member States)

30
EPR training events
implemented globally

41
registered RANET countries

50
States providing radiation monitoring data through IRMIS
on a routine basis

107
incidents reported
by Member States

KEY OUTPUTS

Testing Readiness for Emergency Response

Member States continue to seek Agency support in improving the preparation, conduct and evaluation of national emergency exercises. The Agency participated in two regional large-scale exercises in 2023, in Norway and Romania. During these exercises, the Agency's field response team was deployed together with other assistance teams from Member States and integrated in the national response capabilities.

In 2023, the Agency conducted four internal full response mode exercises (FREX) to demonstrate the ability of the Incident and Emergency System (IES) to respond to a simulated nuclear or radiological incident or emergency and to train Secretariat staff within the IES. Each eight-hour FREX was attended by 35–40 staff members. A FREX conducted in October 2023 was done in conjunction with the above-mentioned regional large-scale exercise in Romania and was used to test the operational arrangements for implementing the Agency's response roles.

National and International Emergency Preparedness

Efficient information exchange and emergency communication are essential to mitigate risks and ensure effective crisis response mechanisms. In the first six months of 2023, the Agency's Incident and Emergency Centre (IEC) was instrumental in maintaining systematic contact with Agency field teams in Ukraine and with the State Nuclear Regulatory Inspectorate of Ukraine. The IEC kept records of the data provided by the field teams and contributed to the assessment of the potential consequences of nuclear safety-related developments at NPPs in Ukraine.

The IEC also conducted 30 emergency preparedness and response (EPR) training activities in 2023, held in all regions and covering topics such as national EPR arrangements, self-assessments, implementation of exercises, protection strategy, first responders, response to events triggered by a security event, and lessons learned.

SAFETY OF NUCLEAR INSTALLATIONS

OBJECTIVES

To support Member States in improving the safety of nuclear installations during site evaluation, design, construction and operation through the availability and application of up-to-date safety standards.

To support Member States in establishing and enhancing their national safety infrastructure through the conduct of safety review services and facilitation of adherence to, and implementation of, the Convention on Nuclear Safety and the Code of Conduct on the Safety of Research Reactors.

To support Member States in capacity building through human resource development, education and training, and knowledge management and knowledge networks by means of international cooperation, including exchange of information and operating experience, and coordination of research and development activities.

"

The OSART mission enabled an in-depth assessment of the site and an enriching sharing of the best global practices thanks to the team's combined expertise. The recommendations and suggestions will help us ensure a continuous improvement of the plant's operational safety.

Peter Farkaš
Director of Bohunice NPP, Slovakia

98.8%

of issues raised during OSART and SALTO missions adressed

1200

beneficiaries from safety-related training events

102

operating experiences shared via
FINAS
IRS
IRSRR

KEY OUTPUTS

Assisting Countries in Developing Further their National Safety Infrastructures and Regulatory Frameworks

In 2023, the Agency continued to promote and support the establishment of comprehensive safety infrastructures and regulatory frameworks to ensure the safety of nuclear installations throughout their lifetimes.

The Joint Eighth and Ninth Review Meeting of the Contracting Parties to the Convention on Nuclear Safety (CNS) was held in March 2023, with 934 participants from 81 Member States — the highest level of participation by Contracting Parties to date, reflecting the sustained international commitment to nuclear safety.

The Agency conducted two advisory missions on periodic safety review of research reactors, in Brazil and Jordan. It also held technical meetings and workshops on topics related to the safety of research reactors, including the Code of Conduct on the Safety of Research Reactors; digital instrumentation and control systems; operating experience feedback; safety performance indicators; ageing management; management systems; and research reactor experiments. Furthermore, there were two training workshops on assessment of national nuclear infrastructure to support new research reactor projects, held in Lusaka and Vienna. These activities contributed to further enhancing the regulatory oversight and operational safety of research reactors.

The Agency also conducted technical meetings on the consideration of human factors and on chemical and fire safety at nuclear fuel cycle facilities, as well as workshops on operating experience feedback and on safety considerations in the use of advanced technologies, including artificial intelligence, at nuclear fuel cycle facilities.

Three training courses were held for reviewers in Integrated Regulatory Review Service (IRRS) missions, in Paris, Vienna and Washington DC. The Agency also held three international workshops to exchange information, experience and lessons learned from IRRS missions and to discuss recent developments and further improvements in the planning and implementation of such missions.

In addition, the Agency continued supporting Member States in ensuring the safe and secure use of advanced nuclear technologies, including small modular reactors (SMRs). In particular, the regulatory track of the Nuclear Harmonization and Standardization Initiative (NHSI) continued its work to develop a series of tools and technical publications aimed at helping regulators work together in the context of regulatory reviews of new reactors.

Promoting Safety Assessment of Nuclear Installations Including Advanced and Innovative Reactors

With the aim of ensuring that safety is adequately considered in all future developments in Member States, the Agency held technical meetings in 2023 addressing safety matters related to existing NPPs and first-of-a-kind technologies. These meetings covered topics such as safety demonstration of innovative technology in power reactor designs; safety approach for liquid metal cooled fast reactors; modernization of instrumentation and control; fusion design safety and regulation; and safety implications of the use of artificial intelligence in NPPs.

Analysing Climate Change Challenges to the Safety of Nuclear Installations

In 2023, the Agency approved a new three-year coordinated research project entitled 'Climate Change Challenges to the Safety of Nuclear Installations', focusing on hazard calculation and operational provisions and investigating the resilience of new and existing nuclear infrastructures to climate-related extreme scenarios. The study will analyse the impact of climate change on weather-related hazards by comparing national practices and evaluating available simulation tools.

The Agency also held a technical meeting on probabilistic safety assessment (PSA) of nuclear installations in relation to external events and their combinations, in order to present recent work on PSA safety standards and technical documents, with an emphasis on the modelling of scenarios for severe external events other than seismic.

Improving Nuclear Power Plant Safety Worldwide

In 2023, the Agency completed 40 years of Operational Safety Review Team (OSART) missions, having delivered 222 missions and 162 follow-up missions. OSART mission reports continue to identify recommendations and suggestions regarding setting, communicating and meeting NPP management expectations, strengthening the conduct of safe operations, optimizing maintenance activities, and strengthening accident management and on-site emergency preparedness and response.

The Agency also held international workshops on hazards in deterministic safety analysis and common cause failures in instrumentation and control systems, and interregional workshops on SMR safety.

The Director General at the opening of the Joint Eighth and Ninth Review Meeting of the Contracting Parties to the CNS, Vienna, March 2023.

Supporting International Exchange of Operating Experience for Nuclear Installations

Learning from operational experience in nuclear installations is key for advancing safety, and benefits the entire nuclear safety community. In 2023, the Agency upgraded the IT platform supporting its operating experience reporting systems — including the International Reporting System for Operating Experience (IRS) for NPPs, the Incident Reporting System for Research Reactors (IRSRR) and the Fuel Incident Notification and Analysis System (FINAS) for nuclear fuel cycle facilities — to enhance the effectiveness of these systems through an improved user interface and to provide for better information analysis.

Civil Liability for Nuclear Damage

Establishing coherent nuclear liability mechanisms, at the national and global levels, is crucial for ensuring prompt, adequate, equitable and non-discriminatory compensation for nuclear incidents. In June 2023, the Agency acted as the Secretariat of the Third Meeting of the Contracting Parties and Signatories to the Convention on Supplementary Compensation for Nuclear Damage, held in Tokyo. The International Expert Group on Nuclear Liability (INLEX) held its 23rd regular meeting in July 2023, followed by a workshop for diplomats on civil liability for nuclear damage. A regional IAEA–INLEX workshop for Latin America was organized in October 2023, in Rio de Janeiro, Brazil. During the 67th regular session of the General Conference, a side event was held to celebrate the 20th anniversary of the establishment of INLEX. In addition to providing legislative assistance to Member States on nuclear liability, the Secretariat also conducted outreach missions jointly with INLEX.

INSARR mission to the LVR-15 research reactor, Czech Republic, February 2023. (Photograph courtesy of the LVR-15 research reactor)

Technical Safety Review mission to Kozloduy NPP, Bulgaria, March 2023. (Photograph courtesy of Kozloduy NPP)

RADIATION AND TRANSPORT SAFETY

OBJECTIVES

To support Member States in improving radiation safety of people and the environment through the development of safety standards and by providing for their application.

To support Member States in establishing the appropriate safety infrastructure through support and implementation of the Code of Conduct on the Safety and Security of Radioactive Sources and its supplementary guidance, as well as through safety reviews and advisory services.

To support Member States in capacity building through education and training, and in encouraging the exchange of information and experience.

"

The ORPAS mission will accelerate our national efforts to develop a strong and sustainable occupational radiation protection system for a healthy workforce.

Pontsho Pusoetsile
Permanent Secretary of the Botswana Ministry of Communications, Knowledge and Technology

4

additional countries expressed commitment to the Code of Conduct on the Safety and Security of Radioactive Sources

5

additional countries expressed commitment to the Guidance on the Import and Export of Radioactive Sources

12

additional countries expressed commitment to the Guidance on the Management of Disused Radioactive Sources

KEY OUTPUTS

Concept of Exemption, International Trade and Cooperation with International Organizations and Other Specialized Agencies

In 2023, the Agency published a new General Safety Guide providing revised recommendations on applying the concept of exemption for practices or sources within practices from regulatory control, and continued developing a Safety Report on radiation safety in the trade of non-food commodities.

In addition, the Agency hosted a technical meeting to share and discuss national experience in managing radiation safety in the international and national trade of non-food commodities, in order to provide more detailed technical information related to the preparation of a related draft Safety Report.

The Agency also continued working with the International Commission on Radiological Protection and other international organizations and specialized agencies to review the fitness for purpose of the current system of radiological protection.

Radiation Safety Technical Services Laboratory

In 2023, the Agency's Radiation Safety Technical Services (RSTS) Laboratory, which operates both at the Vienna International Centre and at the IAEA Seibersdorf laboratories, continued to provide radiation monitoring services to individuals, including Agency workers, experts, trainees and visitors who could be exposed to radiation during Agency activities. For the 17th year in a row, the Laboratory also undertook an internal audit within the ISO quality management system, and continued working on refurbishment and acquiring additional laboratory space in Seibersdorf.

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2600
individuals monitored through the RSTS Laboratory

50 100
measurements for individual monitoring

28 600
measurements for workplace monitoring

Supporting the Application of Agency Safety Standards

In parallel with the implementation of a number of peer reviews and advisory services, the Agency developed e-learning courses and organized in-person workshops to further strengthen its Occupational Radiation Protection Appraisal Service (ORPAS) and its Integrated Regulatory Review Service (IRRS). Workshops on lessons learned, gathering team leaders, reviewers and host counterparts, were organized in 2023 both for ORPAS reviewers and for IRRS reviewers. In addition, the ORPAS Database was developed and made available.

The Agency's work in the area of occupational radiation protection focused mainly on the exchange of operational experience between Member States in the control, monitoring and recording of occupational exposure, providing valuable and actionable lessons about radiation safety at work. In 2023, the Agency published a *Safety Report entitled Neutron Monitoring for Radiation Protection*.

Meanwhile, the Information Exchange on Occupational Exposure in Medicine, Industry and Research added a new module to cover industrial operations involving naturally occurring radioactive material (NORM) and the first ever intercomparison exercise for NORM analysis — which is essential for prior radiological characterization of workplaces involving NORM — was performed in the European region, to be implemented in all regions in the future. Furthermore, the Agency organized an African regional intercomparison exercise on individual monitoring for external exposure.

In addition, the Agency held Postgraduate Educational Courses (PGEC) in Radiation Protection and the Safety of Radiation Sources for young professionals in Argentina, Ghana, Greece, Indonesia, Jordan, Kenya and Morocco in a number of languages.

To support Member States in further building their national competence, the Agency trained trainers of radiation protection officers (RPOs) from medical and industrial facilities in more than 50 countries. Medical radiographers from the Caribbean region were trained in the role of RPO at diagnostic and interventional radiology facilities. Furthermore, regulators and training providers from Latin America drafted or updated their national strategies for education and training in radiation, transport and waste safety according to the Agency's methodology after participating in a related regional workshop.

The transport safety e-learning platform that is available to all Member States was enhanced through the inclusion of new modules that ensure alignment with the latest edition of the *Regulations for the Safe Transport of Radioactive Material*, and new multilingual modules.

PGEC participants in Jordan investigate the properties of alpha, beta and gamma radiation. (Photograph courtesy of the Jordan Atomic Energy Commission)

Denials and Delays of Shipment of Radioactive Material

In 2023, the Agency held two meetings of the Denial of Shipment Working Group, where participants discussed and analysed cases of denial of and delays in the shipment of radioactive material, identified possible solutions based on root cause analysis and developed a strategy for promoting public awareness and communication with the transport industry. The Working Group recommended that Member States should be called on to facilitate the safe and secure transport of radioactive material and to identify, if they had not already done so, a national focal point on denials of shipment of radioactive material. It was also recommended that the Secretariat hold an open-ended meeting of legal and technical experts on a non-binding instrument on the facilitation of safe and secure transport of radioactive material.

In addition, the Agency enhanced its cooperation with the International Civil Aviation Organization (ICAO) to facilitate the safe transport of medical radioisotopes in accordance with the Agency's safety standards and ICAO standards for global civil aviation safety and security. A joint statement was signed by the IAEA Director General and the ICAO Secretary General in November 2023.

20th Anniversary of the Code of Conduct on the Safety and Security of Radioactive Sources

In 2023, the Agency held the 6th 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, providing an opportunity to celebrate the 20th anniversary of the approval of the Code of Conduct by the Board of Governors. The Code is a legally non-binding instrument to assist States in establishing and maintaining a high level of safety and security of radioactive sources throughout their life cycle. The meeting recommended that the Agency continue to encourage political support to the Code and its supplementary Guidance and assist States in their implementation. By the end of 2023, 149 States had expressed political commitment to the Code, 134 to the Guidance on the Import and Export of Radioactive Sources and 64 to the Guidance on the Management of Disused Radioactive Sources. The meeting further recommended that the Agency continue to implement the recommendations from the International Meeting of the Points of Contact for the Purpose of Facilitating the Export and Import of Radioactive Sources in Accordance with the Guidance on the Import and Export of Radioactive Sources, which took place for the first time in January 2023. Based on these recommendations, the Agency is working to enhance tools and assistance related to the effective and sustainable implementation of the Code and Guidance.

The Director General at the opening of the 6th 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, Vienna, May–June 2023.

RADIOACTIVE WASTE MANAGEMENT AND ENVIRONMENTAL SAFETY

OBJECTIVES

To support Member States in improving the safety of radioactive waste and spent fuel management, including geological repositories for high level waste, decommissioning, remediation and environmental releases, through the development of safety standards and providing for their application.

To support Member States in improving the safety of radioactive waste and spent fuel management, including geological repositories for high level waste, decommissioning, remediation and environmental releases through peer reviews and advisory services; and to assist in their adherence to, and facilitate the implementation of, the Joint Convention.

To support Member States in capacity building through education and training and by encouraging the exchange of information and experience.

"

It is timely to carefully consider the implications of Agenda 2030 and the Sustainable Development Goals for the international framework for safety. By learning from decommissioning, waste management, remediation and environmental protection, we may position ourselves better in carrying out future activities in a way that is safe and sustainable.

Carl-Magnus Larsson

Chair of the International Conference on the Safety of Radioactive Waste Management, Decommissioning, Environmental Protection and Remediation: Ensuring Safety and Enabling Sustainability

100

early career professionals signed up to learn more about radiological environmental impact assessments

25

Member States actively participated in the International Project on Decommissioning of Small Facilities

23

countries contributed to the DIRATA database

50

experts from Central Asia participated in events hosted by the Coordination Group for Uranium Legacy Sites

KEY OUTPUTS

Methods for Radiological and Environmental Impact Assessment

The Methods for Radiological and Environmental Impact Assessment (MEREIA) programme provides a forum for professionals to jointly develop a more harmonized framework for assessing the impact of radionuclides in, or released to, the environment. The programme has six working groups, each addressing one of the following situations identified by Member States for the purpose of radiological and environmental impact assessments: discharges to a fjord; historical marine dumping; former uranium mining and milling; discharges from an operational surface waste disposal facility; behaviour of radionuclides in forest and freshwater catchments after an accident; and a breached caesium source in an urban area. This enables the discussion of challenges faced by Member States.

In 2023, MEREIA facilitated knowledge transfer and capacity building with a focus on the development of young professionals, including through a programme of webinars covering basic concepts and specialized topics; educational sessions on cross-cutting technical topics; and hands-on activities on the use of models and assessment tools.

Application of the Concept of Clearance

In 2023, the Agency published a new General Safety Guide providing recommendations on applying the concept of clearance for materials, objects and buildings to be released from regulatory control. Clearance aligns well with the 2030 Agenda for Sustainable Development in that it enables the recycling and reuse of materials and minimizes the volume of waste requiring disposal. It is considered a valuable option by an increasing number of States, especially given the large quantities of materials expected from future decommissioning projects.

The Agency provides guidance to Member States on generic clearance, whereby cleared material can be used for any purpose, and specific clearance, whereby material can be used only for pre-specified purposes. Both of these featured in capacity building events in 2023. Work in 2023 also focused on methods and models for deriving specific clearance levels to support decisions on whether material containing levels of radioactivity slightly above the general clearance levels can be safely recycled or disposed of in conventional landfill.

NUCLEAR SECURITY

OBJECTIVES

To promote adherence to relevant legally and non-legally binding international instruments to enhance nuclear security globally.

To assist States in establishing, maintaining and sustaining national nuclear security regimes for nuclear and other radioactive materials, including during transport, and associated facilities used for peaceful purposes.

To play the central role of facilitating and enhancing international cooperation and increasing visibility and awareness through communication on nuclear security.

"

The IPPAS team advice will facilitate Zambia's efforts towards enhancing the safe and secure applications of nuclear science and technology in the country. In addition, it will help strengthen Zambia's nuclear security regime, which is key for building confidence among the regulatory body, the operators, the public and other national stakeholders.

Dr Boster D. Siwila
Executive Director of Zambia's Radiation Protection Authority

12 Jul 2021

groundbreaking ceremony for the Nuclear Security Training and Demonstration Centre (NSTDC)

3 Oct 2023

opening of the NSTDC

2100

square metres of specialized technical infrastructure and equipment

23

training courses available

1000

trainees expected per year

KEY OUTPUTS

Promoting Universalization of the Convention on the Physical Protection of Nuclear Material and its Amendment

In 2023, the Agency continued encouraging universal adherence to and effective implementation of the Convention on the Physical Protection of Nuclear Material (CPPNM) and its Amendment (A/CPPNM) and provided technical and legislative assistance upon request to this end. During the year, an additional four States became Parties to the A/CPPNM, and the Agency further increased the number of national and regional workshops promoting its universalization, with a particular focus — at the request of Member States — on engaging decision makers as well as technical experts.

Regional workshop to promote the universalization of the A/CPPNM, Zimbabwe, March 2023.

Establishing a Unique International Nuclear Security Training Centre to Tackle Global Nuclear Terrorism

In October 2023, the Agency opened its Nuclear Security Training and Demonstration Centre (NSTDC) in Seibersdorf, Austria, to help strengthen countries' abilities to tackle nuclear terrorism (see photo on page 96). The Centre is equipped with specialized technical infrastructure and equipment and offers training courses and workshops in the areas of physical protection of nuclear and other radioactive material and associated facilities, and of detection and response to criminal or intentional unauthorized acts. The Centre is housed in a Multipurpose Building and bolsters the Agency's ability to respond to countries' nuclear security capacity-building needs. More than €18 million in extrabudgetary funding from 15 donors, as well as in-kind contributions, were received to build and operate the Multipurpose Building.

Addressing Computer Security Threats to Ensure Nuclear Security and Safety

Mitigating risks posed by threats to computer security continues to be an important area of work in order to ensure nuclear security. During 2023, the Agency conducted 43 computer security-related events including, among other things, the development of new initiatives related to computer security regulations; scenario-based exercises; virtual training environments; and the integration of computer security training modules across courses at the NSTDC to support Member State capacity building.

In June 2023, the Agency held the International Conference on Computer Security in the Nuclear World: Security for Safety (CyberCon23). CyberCon23 affirmed the Agency's unique and continuing role in fostering cooperation between countries and enabling the sharing of technical information and best practices in the adoption of rapidly developing technologies. Attendance from a diverse participant group reflected the high priority that the international nuclear security community places on computer security.

Members of the IPPAS team visit the Cancer Diseases Hospital in Lusaka, September 2023. (Photograph courtesy of the Zambian Radiation Protection Authority)

Identifying Nuclear Security Needs

Agency missions, including the International Physical Protection Advisory Service (IPPAS), the International Nuclear Security Advisory Service (INSServ) and the Advisory Mission on Regulatory Infrastructure for Radiation Safety and Nuclear Security (RISS), provide States with invaluable information that is used to develop action plans within the Integrated Nuclear Security Sustainability Plan (INSSP) framework. INSSPs assist States, upon request, in applying a systematic and comprehensive approach to enhancing their nuclear security regimes. Ninety-two States currently have approved INSSPs.

In 2023, the Agency conducted five IPPAS, three INSServ and five RISS missions. Since 1996, a total of 102 IPPAS missions have been conducted, upon request, in 60 Member States. In September 2023, the milestone of 100 IPPAS missions was achieved through the completion of an IPPAS mission to Zambia. With coordination from designated points of contact, Member States continued using the IPPAS Good Practices Database as a tool for information sharing, collective learning, benchmarking and continuous improvement.

Enhancing Member State Capabilities to Implement Nuclear Security Measures During Major Public Events

In 2023, the Agency supported the planning or implementation of six major public events (MPEs) including large sporting events, a religious event and a major international conference. It also provided training for 168 personnel from a range of national nuclear security agencies and loaned 409 items of radiation detection equipment for efforts related to MPEs. Launched in 2004, the Agency's MPE programme has supported a total of 73 MPEs in 45 Member States to date.

Managing the Safety–Security Interface

Where possible, the Agency seeks to address areas where safety and security considerations overlap or are related to one another. Under the Regulatory Infrastructure Development Project, the Agency conducted two Schools on Nuclear and Radiological Leadership for Safety and Nuclear Security, in English and in French, for Member States from the African region in May and August 2023. The purpose of these events was to train early- to mid-career professionals so as to promote strong leadership and culture in the areas of radiation safety and nuclear security in organizations exercising regulatory control over facilities and activities that use radiation sources and other radioactive material.

The Agency also held two regional training courses on the authorization and inspection of radiation safety and nuclear security: one in Lusaka for medical practices, and one in Rabat for industrial practices. These courses trained regulatory staff of the respective regions to perform core regulatory functions of authorization, including review, assessment, inspection and enforcement, considering both radiation safety and nuclear security aspects.

Agency mission and technical visit to Benin, September 2023, as part of nuclear security-related assistance for the Pétanque World Championships.

IAEA | Internal Radiation Safety and Nuclear Security Regulator

Ensuring safety and security of the Agency's facilities and activities

Internal regulatory oversight for radiation safety and nuclear security

15 authorizations

2 regulatory inspections

37 approvals

18 investigations of events

47 review and assessment reports

Nuclear Safety and Security

CONFERENCES 2023

International Conference on Effective Nuclear and Radiation Regulatory Systems: Preparing for the Future in a Rapidly Changing Environment

February 2023, Abu Dhabi

Participants: **434** in person and **196** online, from **95** Member States

This event focused on the safety and security of advanced reactors and new technologies, challenges related to the application of nuclear and non-nuclear technologies throughout their life cycle, regulatory agility and resilience, and being prepared for the unexpected. A 'call for action' document was issued.

International Conference on the Safety of Radioactive Waste Management, Decommissioning, Environmental Protection and Remediation: Ensuring Safety and Enabling Sustainability

November 2023, Vienna

Participants: **447** in person and **490** online, from **105** Member States

This event explored the relationship between safety and sustainability in the context of managing radioactive waste and environmental releases, decommissioning and remediation. It concluded with the strong consensus that lifetime safety is a key component of sustainability and that sustainability informs our approach to safety.

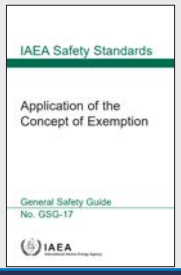
International Conference on Computer Security in the Nuclear World: Security for Safety

June 2023, Vienna

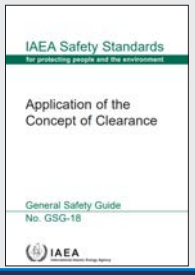
Participants: **339** in person and **268** online, from **62** Member States

This event focused on the evolving nature of computer security in the nuclear field and featured a main computer security demonstration and seven State-level demonstrations highlighting various aspects of the mitigation and risk management of cyber-attacks.

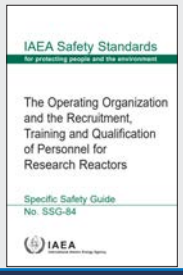
Provides recommendations on the application of the concept of exemption in planned exposure situations.



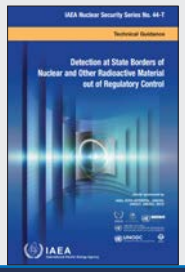
Provides recommendations on the application of the concept of clearance for materials, objects and buildings that are to be released from regulatory control.



Provides recommendations on the operating organization of a research reactor, and on the recruitment, training and qualification of personnel.



Provides guidance to States on planning, implementing and evaluating systems and measures to detect at State borders nuclear and other radioactive material out of regulatory control.



IAEA PUBLICATIONS 2023

Peer Review and Advisory Services

	number of missions
IRRS	9
SEED	6
OSART	11
SALTO	3
TSR	1
INSARR	5
EPREV	1
ARTEMIS	10
INIR	2
ISCA	1
ORPAS	1
RISS	5
INSServ	3
IPPAS	5

Leadership School

7 International Schools on Nuclear and Radiological Leadership for Safety

3 leadership schools at the national level

More than **180** participants from **51** Member States

Schools delivered in **3** languages

Launch of the NS X account in December 2023