

From IAEA Standards to Practice: Current Developments in Radiation Safety and Future Activities

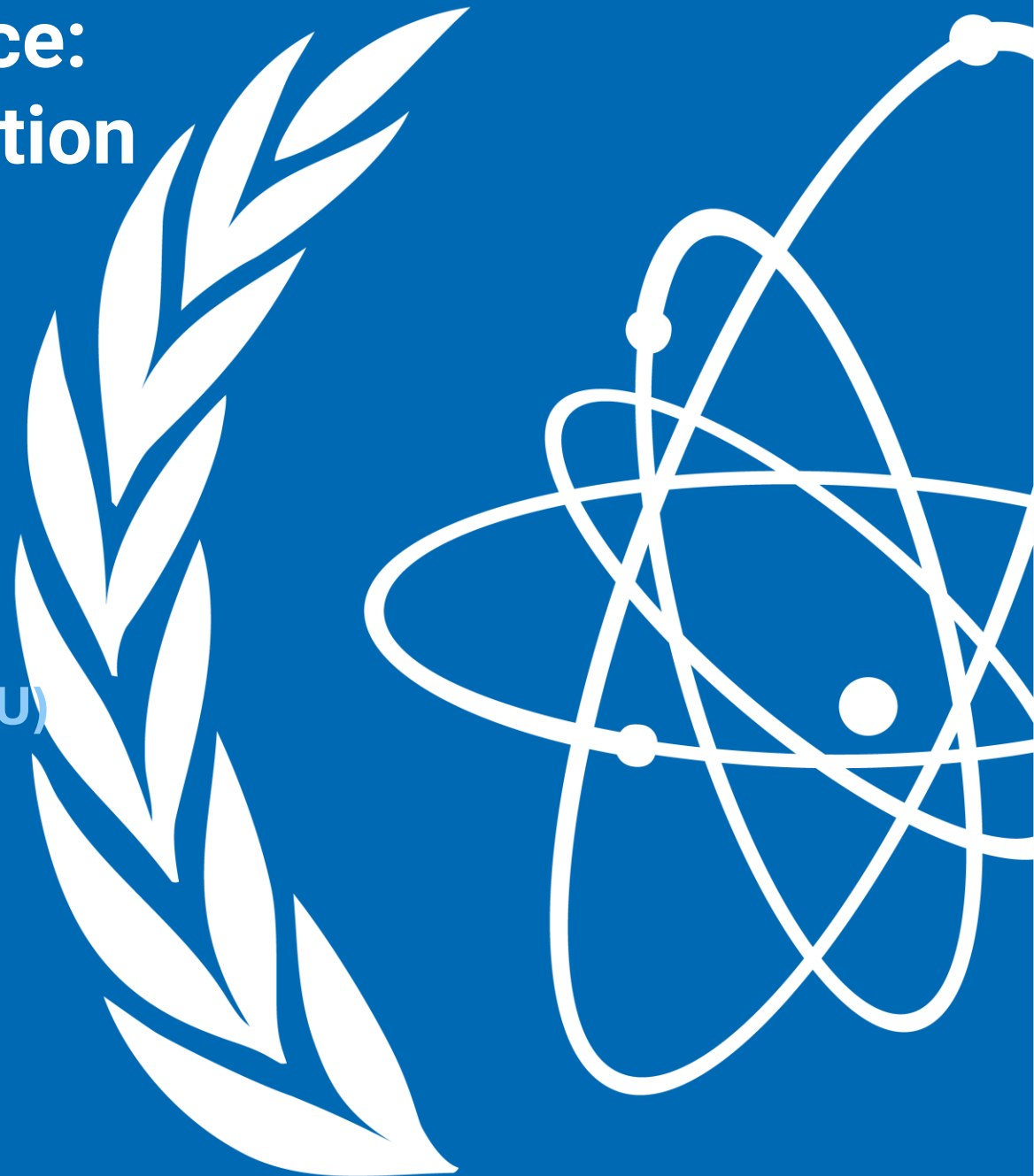
OAS Annual Meeting 2025
Washington D.C.
11 - 14 August 2025

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Radiation Safety and Monitoring Section

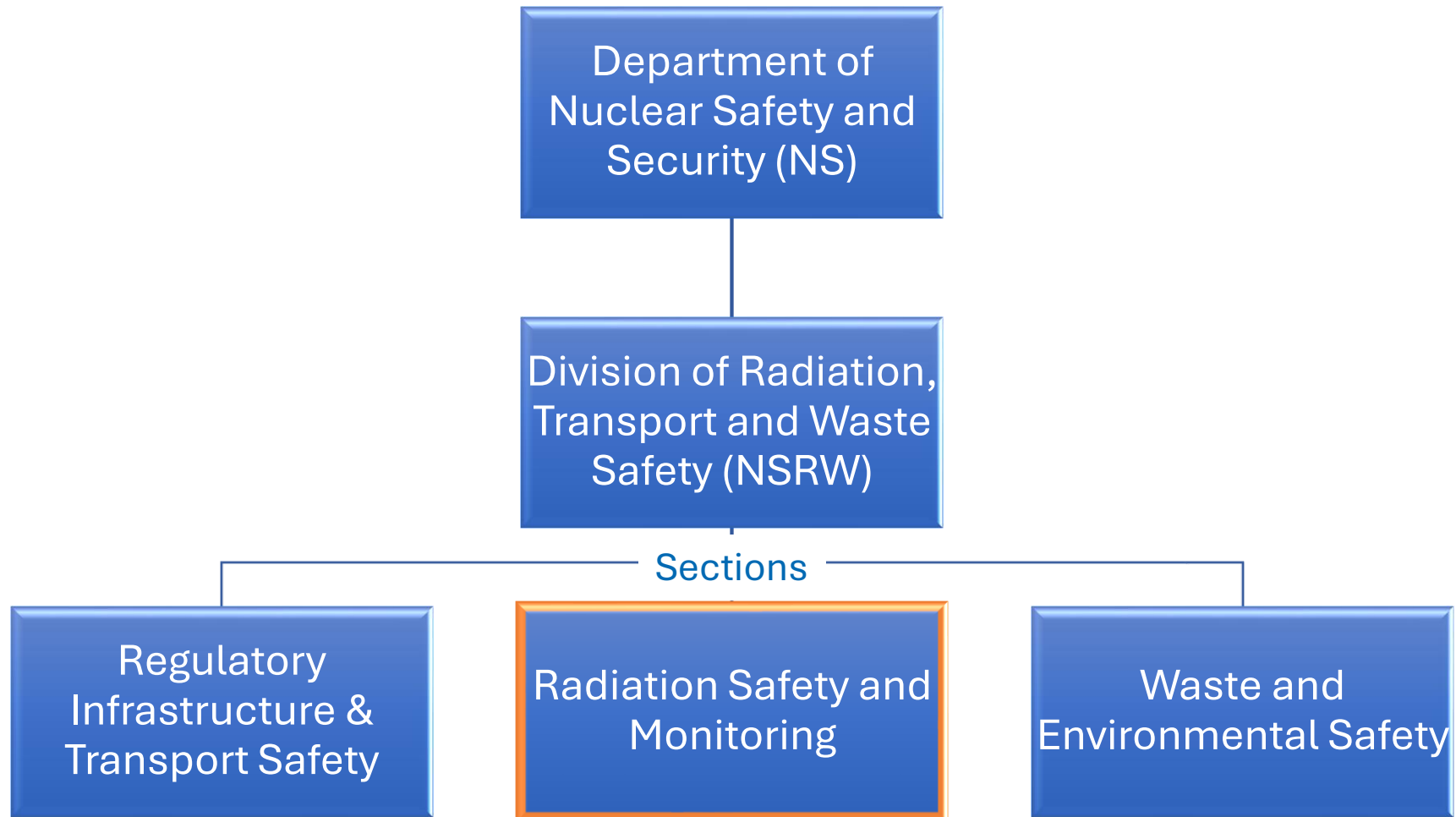
Division of Radiation, Transport and Waste Safety
International Atomic Energy Agency



Outline

1. An introduction to the program of the IAEA Radiation Safety and Monitoring Section
2. An overview of the system of IAEA Safety Standards, with a focus on current guidance under development underpinning GSR Part 3 (e.g., guidance on existing exposure situations and on radiation safety in trade of non-food commodities).
3. Highlights from the RAdiation Safety Standards Committee (RASSC)
4. Information about the upcoming International Conference on Radiation Protection in Medicine: X-Ray Vision, scheduled for December 8–12, 2025, in Vienna, Austria

Radiation Safety and Monitoring Section (1)



Radiation Safety and Monitoring Section (2)

Occupational Radiation Protection

- New and revised safety documents supporting the safety standards on occupational radiation protection;
- Operation of the Information System on Occupational Exposure (ISOE), and promotion and upgrade of the Information System on Occupational Exposure in Medicine, Industry and Research – Industrial Radiography (ISEMIR);
- Newly developed and updated training packages, reports and information management system for the Occupational Radiation Protection Appraisal Service (ORPAS);
- Expansion and use of Occupational Radiation Protection Networks.

Radiation Protection of Patients

- Safety related documents on the radiation protection of patients;
- Reporting systems for radiological procedures and radiotherapy;
- A dedicated website for health professionals and patients containing up-to-date information on dose reduction in radiation exposure in medicine;
- Safety in Radiation Oncology (SAFRON)
- International Conference on Radiation Protection in Medicine: X Ray Vision (8-12 Dec 2025).

Public and Environment Radiation Protection

- Development and update of the International Basic Safety Standards (GSR Part 3)
- General Guidance on Management of Existing Exposure Situations
- Radiation Safety for exposures due to radionuclides in food and non-food commodities, including their trade
- Application of Concept of Exemption
- Radiation Safety of radiation sources for non-medical human imaging
- Oversight on development of international RP system and interaction with International Organizations

IAEA Radiation Safety Technical Services

- Accredited individual dosimetry and workplace monitoring services;
- Instrument calibration services;
- Radiation safety and monitoring assistance in accidents and incidents;
- Novel dosimetry and monitoring methodologies and practices.
- Virtual Tour: [Radiation Safety Technical Services Laboratory | IAEA](#)



IAEA Safety Standards

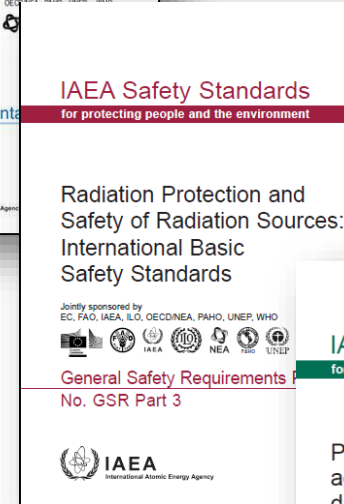
Strategic basis for all the other IAEA Safety Requirements (“**must**” statements)

Fundamentals



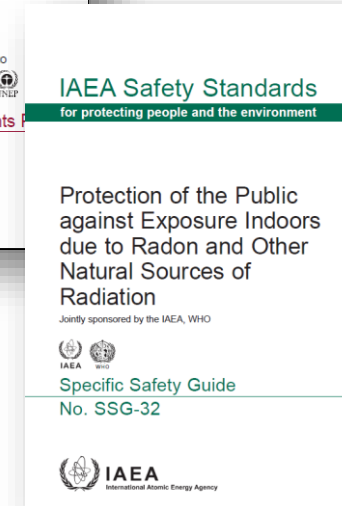
Governed by the objective and principles of SF, they are requirements that need to be met (“**shall**” statements)

Requirements



Recommendations on how to comply with the safety requirement; good practices (“**should**” statements)

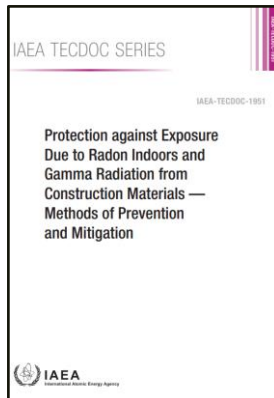
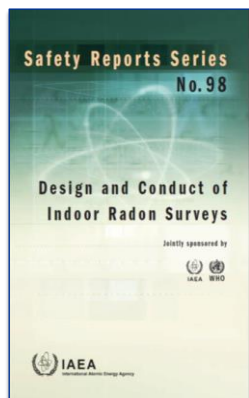
Guides



Safety Reports, TECDOC: Informational documents: provide further technical support (practical examples, detailed methods, ...)

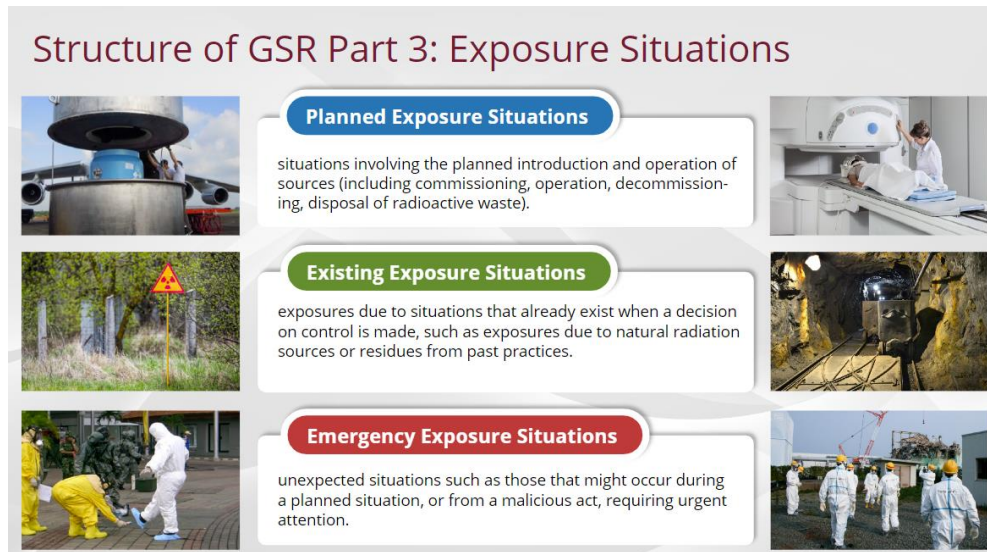
.....provide the requirements for the protection of people and the environment from harmful effects of ionizing radiation and for the safety of radiation sources.

SPSS B: 12 steps publications process with involvement of Member States and review Committees



GSR Part 3 | Context

- Radiation Protection and Safety of Radiation Sources: International Basic Safety Standards (2014); Jointly sponsored by IAEA, ILO, FAO, UNEP, NEA/OECD, PAHO, WHO, EC.
- An integrated and consistent set of Safety Requirements establishes the requirements that need to be met to ensure the protection of people and the environment, both now and in the future. The requirements are governed by the objective and principles of the Safety Fundamentals.



IAEA Safety Standards

for protecting people and the environment

Radiation Protection and Safety of Radiation Sources: International Basic Safety Standards

Jointly sponsored by
EC, FAO, IAEA, ILO, OECD/NEA, PAHO, UNEP, WHO



General Safety Requirements Part 3 No. GSR Part 3



Set of standards and informational publications supporting implementation of GSR Part 3 for existing exposure situations

Exposures due to natural sources:



Radon and its progeny



Natural radionuclides in commodities



Materials with less than 1 Bq/g U and Th decay chain



Exposure of aircrew and space crew

Exposures due to residual radioactive materials:

Contamination or areas by residual radioactive material arising from:



Past activities that were never subject to regulatory control

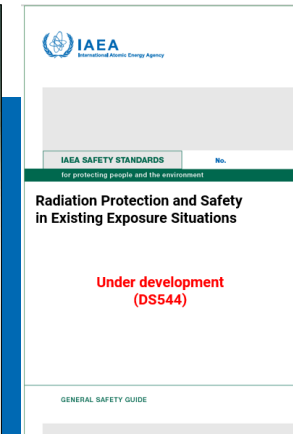
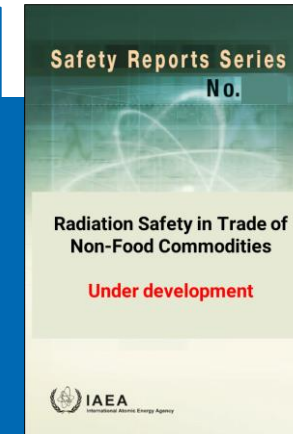
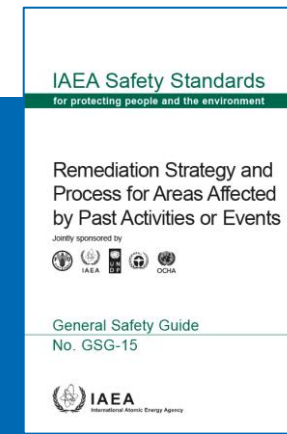
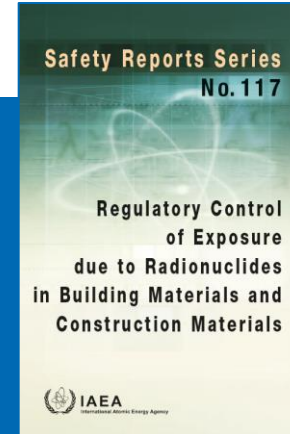
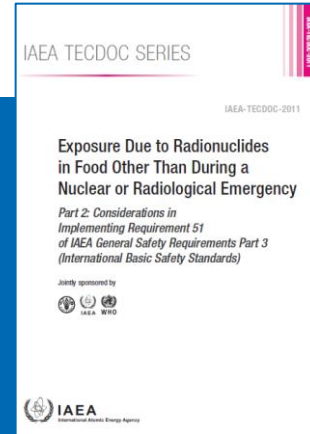
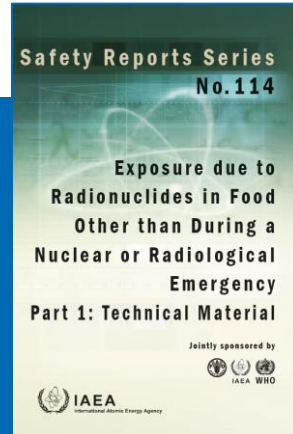
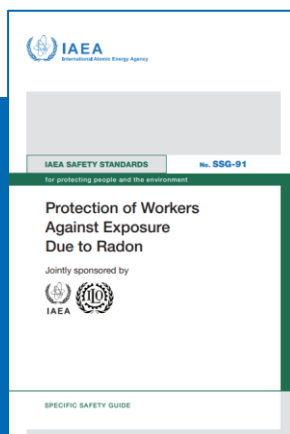
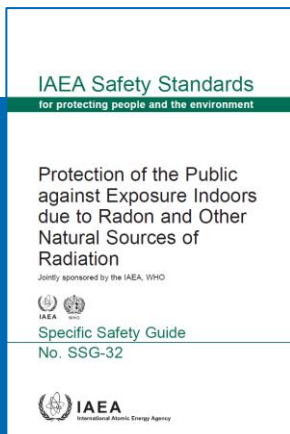


A nuclear or radiological emergency, after emergency has been terminated

Exposure due to radionuclides in:



Food, drinking water, animal feed, construction materials and other commodities



DS544 General Safety Guide on Radiation Protection and Safety in Existing Exposure Situations

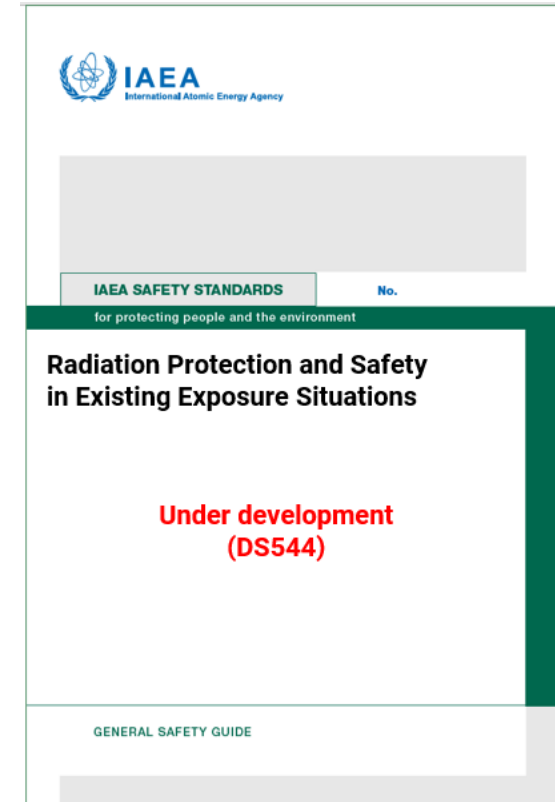
It has been recognised by Member States that while there are several guidance documents on existing exposure situations either already available or in the publication pipeline, MSs have clearly identified the need for an **overarching guidance** on how to manage **consistently different types of** existing exposure situations

Scope

- ✓ DS544 will provide recommendations that apply to **all existing exposure situations** that could occur in Member States within the context of Section 5 of GSR Part 3
- ✓ DS544 will focus on the protection of the **public** and **workers**

The focus will be on clarifying and outlining to the interested parties the procedural steps required to manage these types of exposure

This Safety Guide will **not** duplicate those recommendations provided in detail on specific topics under the existing exposure situations



DS544 | 2. General Features of Existing Exposure Situations

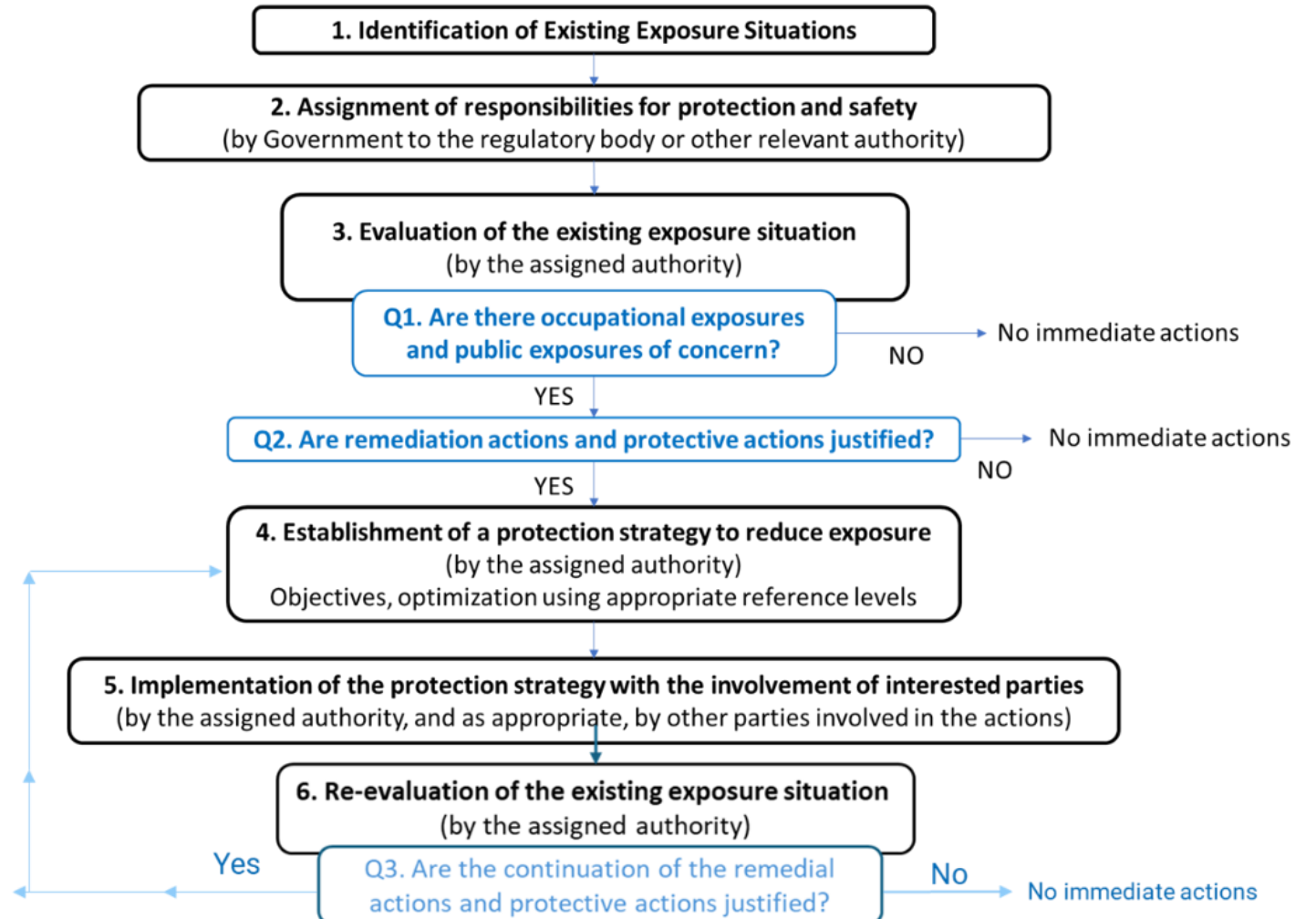
— 2.1 Existing exposure situations within the scope of GSR Part 3

— **2.2 Overarching strategy for the management of existing exposure situations**

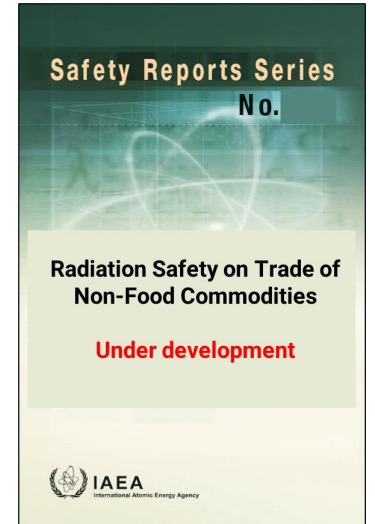
— 2.3 Communicating and raising awareness among interested parties

— 2.4 Involvement of interested parties in the management of existing exposure situations

5 key steps in the management of Existing Exposure Situations



Safety Report Series on Radiation Safety in Trade of Non-Food Commodities



Scope

Non-food commodities in this document refer to goods used by the society, to which natural or artificial radionuclides are not deliberately added.

Outside the scope

- ✗ Food and feed
- ✗ Drinking water
- ✗ Consumer products
- ✗ Manufacturing processes of commodities (including further modification of commodities)
- ✗ Radiation sources and generators
- ✗ Nuclear and radioactive material
- ✗ Radioactive waste and conventional waste
- ✗ Live animals
- ✗ Commodities during emergency exposure situations

In this Safety Report

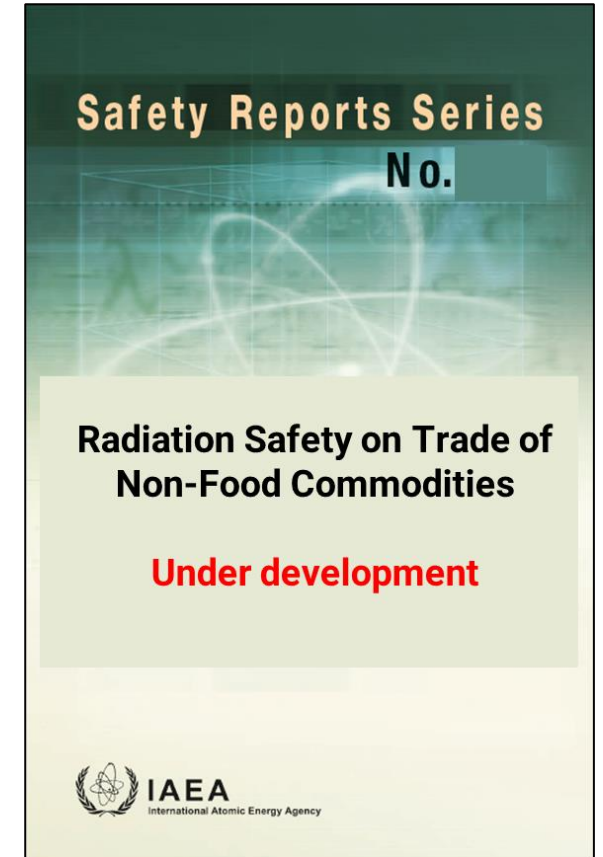
- Trade means the action of buying and selling or of the exchanging “commodities” between people or countries.

Safety Report Series on Radiation Safety in Trade of Non-Food Commodities

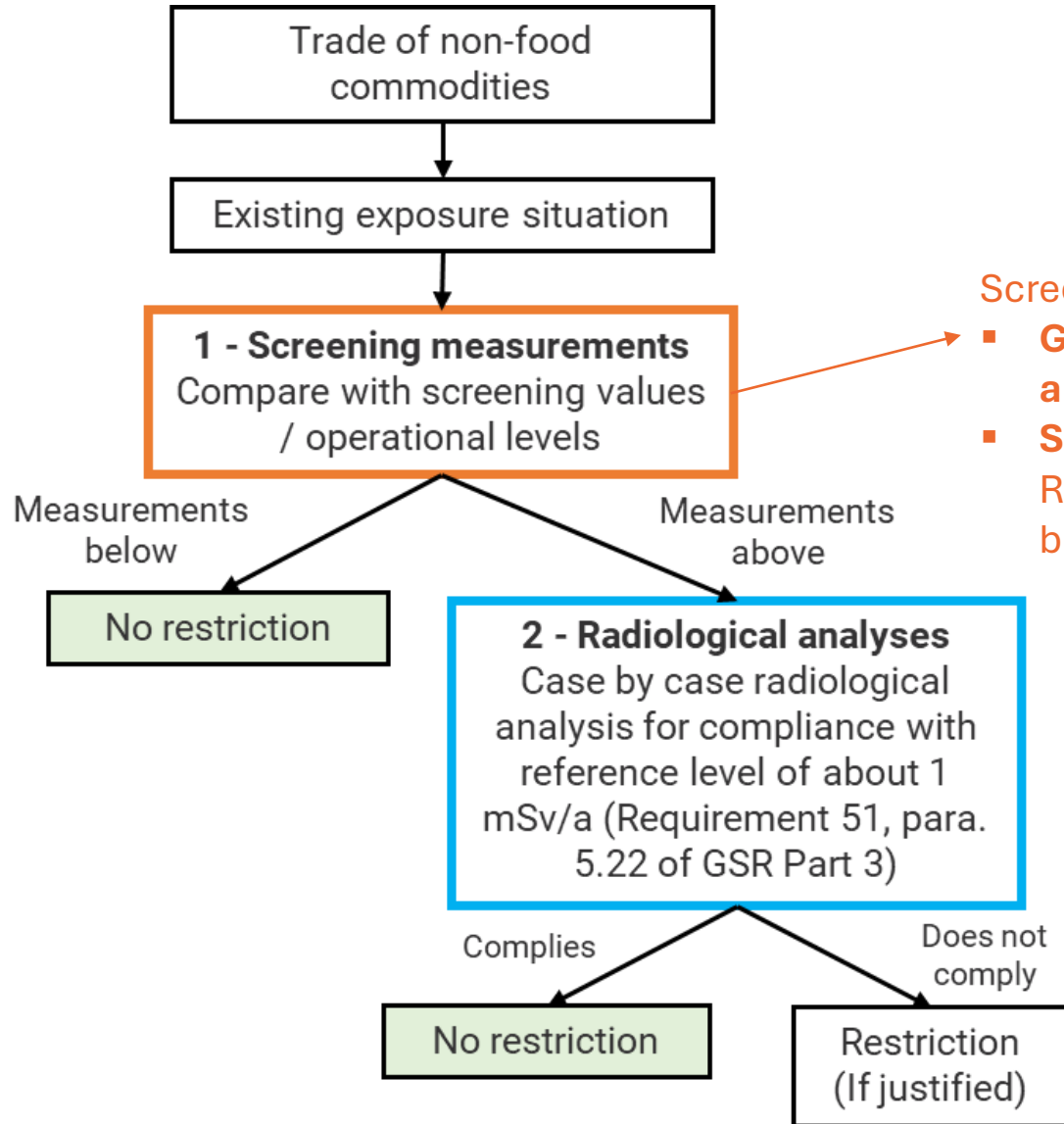
Chapters

1. Introduction
2. Overview of non-food commodities in trade
3. Radiation protection framework for trade of non-food commodities
4. Decision in trade of non-food commodities based on screening values
5. Decision making based on case-by-case radiological analysis
6. Measurement and monitoring programs
7. Considerations to facilitate trade of non-food commodities

Instrumental US contribution to the collection of information and data on examples of non-food commodities containing radionuclides, via active involvement in Technical Meeting on Radiation Safety in Trade of Commodities in 2023 (Kevin Williams, Kathy Modes, Lisa Bruedigan) and sharing of examples of non-food commodities (Lisa Bruedigan & University of Austin, Texas)



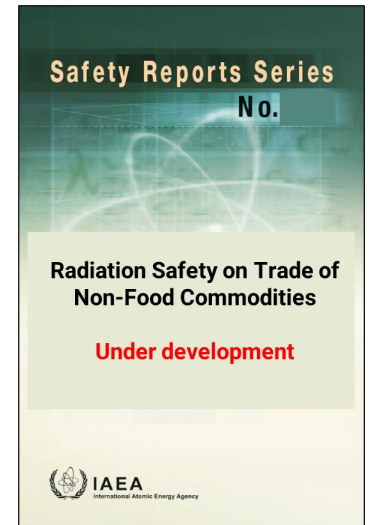
Two main steps involved in the decision making in the trade of non-food commodities



Screening values proposed to be used, e.g.,

- **GSG-17** 'Application of concept of exemption' → 'exemption-like approach' for existing exposure situations
- **SSG-32** 'Protection of the public against Exposure Indoors due to Radon and Other Natural Radiation Sources' → **Activity Index** for building materials

It is important to highlight that in **most of the cases the commodities will comply with the operational values for screening purposes** and only in few cases a radiological analyses would be necessary.



RAdiation Safety Standards Committee (RASSC)



RASSC-58 (24-27 June 2025)

- RASSC ensures a high quality of safety standards through a rigorous review and approval process and provides advice to IAEA on issues related to radiation protection and safety
- RASSC is one of five IAEA Safety Standards Committees
- Meets twice a year at the IAEA Headquarters (June and November)
- RPU provides the Scientific Secretary
- New three-year term started in 2024
- Chairs of Safety Standards Committees meet 2-3 times per year
- Designated Member States representatives from regulatory authorities and observers from International Organizations
- Current RASSC Chair: Mr Haruyuki Ogino (RASSC Japan)

Highlights from RASSC-58 (24-27 June 2025)

- **Review and approval** of 9 drafts of safety standards currently in various steps of publication process SPESS B in which review committees are involved
- Information about the **progress** on TECDOC Implications of ICRU report 95 Operational Quantities for External Radiation Exposure
- Information about the **progress** on Safety Guide on RP and Safety in Existing Exposure Situations
- **Topical session** for discussion around **UNSCEAR report on second primary cancer after radiotherapy**
- Presentations of IAEA informational publications under development on **fusion facilities**
- Country reports (e.g., Japan), reports from International Organizations (ILO, WHO, NEA)
- Update of **RASSC Roadmap 2024-2026** based on RASSC members' feedback
- Progress of **RASSC Working Group** on ad-hoc in-depth analysis on the implementation of IAEA safety standards from IAEA missions with a focus on occupational exposure
- **Joint session** with TRANSSC on 'Transport Regulations and NORM'

RASSC Roadmap (2024-2026) – Progress

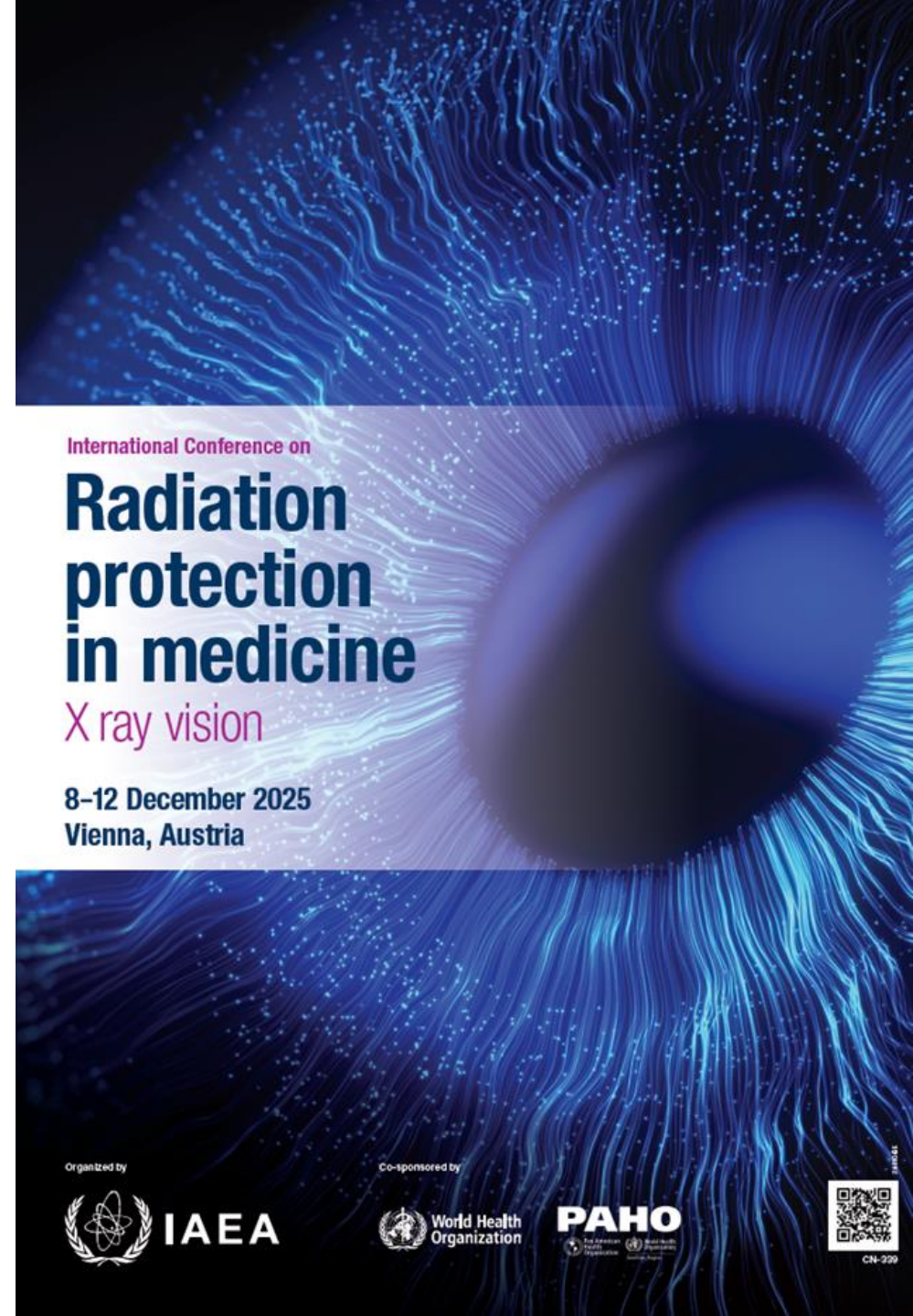
MEETING	DATE	ACTIVITIES
RASSC-59 th	11-14 Nov 2025	<ul style="list-style-type: none">• Review of draft Safety Standards• RASSC road map review 2024-26 update• Presentation on long-term plan for Standards from CSS• Report(s) on issues of interest to RASSC<ul style="list-style-type: none">◦ Outcomes from WG on ad-hoc in-depth analysis of ORPAS/IRRS mission◦ Collecting information, from a radiation safety perspective, on the future development and regulation of fusion facilities in Member States◦ Feedback from national discussions with interested parties in Member States on the impact of potential adoption of new operational quantities for external exposure• Presentations from MS on experience with implementation of standards• Joint RASSC-ICRP Topical session• Reports by International organizations (FAO, IEC, IRPA, ISSPA)

Protection of Patients - Radiation Protection in Medicine – 2025

International conference on radiation protection in medicine – **X ray vision**

- The purpose of the event is to review significant global developments in the radiation protection and safety of patients and health professionals, taking into account current trends and advances in medical radiation technology and procedures, and to identify future challenges and opportunities. The impact of the decade-long Bonn Call for Action on strengthening radiation protection in medicine will also be assessed, with a **vision to formulate a robust strategy for the next decade**.
- 8-12 December 2025, Vienna, Austria
- **Announcement on-line:**

[International Conference on Radiation Protection in Medicine: X Ray
Vision | IAEA](#)



International Conference on

Radiation protection in medicine X ray vision

8-12 December 2025
Vienna, Austria

Organized by



Co-sponsored by



CN-229



Thank you!

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