Revision of the International Guidance on Occupational Radiation Protection

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Radiation Safety and Monitoring Section

Division of Radiation, Transport and Waste Safety

IAEA

International Atomic Energy Agency

Content

- IAEA statute
- IAEA Safety Standards/ The new BSS
- Development of the Safety Guide on occupational radiation protection
- Main changes and updated guidance
- Other relevant information

IAEA Statute (Article III.A.6)

To establish or adopt, in consultation and, where appropriate, in collaboration with the competent organs of the United Nations and with the specialized agencies concerned, standards of safety for protection of health and minimization of danger to life and property (including such standards for labour conditions), and to provide for the application of these standards to its own operation as well as to the operations making use of materials, services, equipment, facilities, and information made available by the Agency or at its request or under its control or supervision; and to provide for the application of these standards, at the request of the parties, to operations under any bilateral or multilateral arrangements, or, at the request of a State, to any of that State's activities in the field of atomic energy.

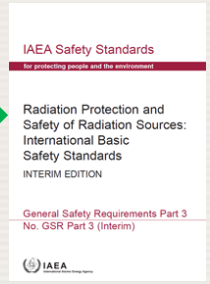
IAEA Safety Standards

THE IAEA SAFETY STANDARDS: A GLOBAL REFERENCE FOR PROTECTING PEOPLE AND THE ENVIRONMENT

- Not binding on Member States but may be adopted by them
- Binding for IAEA's own activities
- Binding on Member States in relation to operations assisted by the IAEA
- Binding on Member States entering into project agreements with IAEA

Hierarchy of IAEA Safety Standards

High level underlying principles



Specify obligations and responsibilities ("shall" statements)

Recommendations to support requirements ("should" statements) based on international best practices

Long Term Structure of Safety Requirements

General Safety Requirements

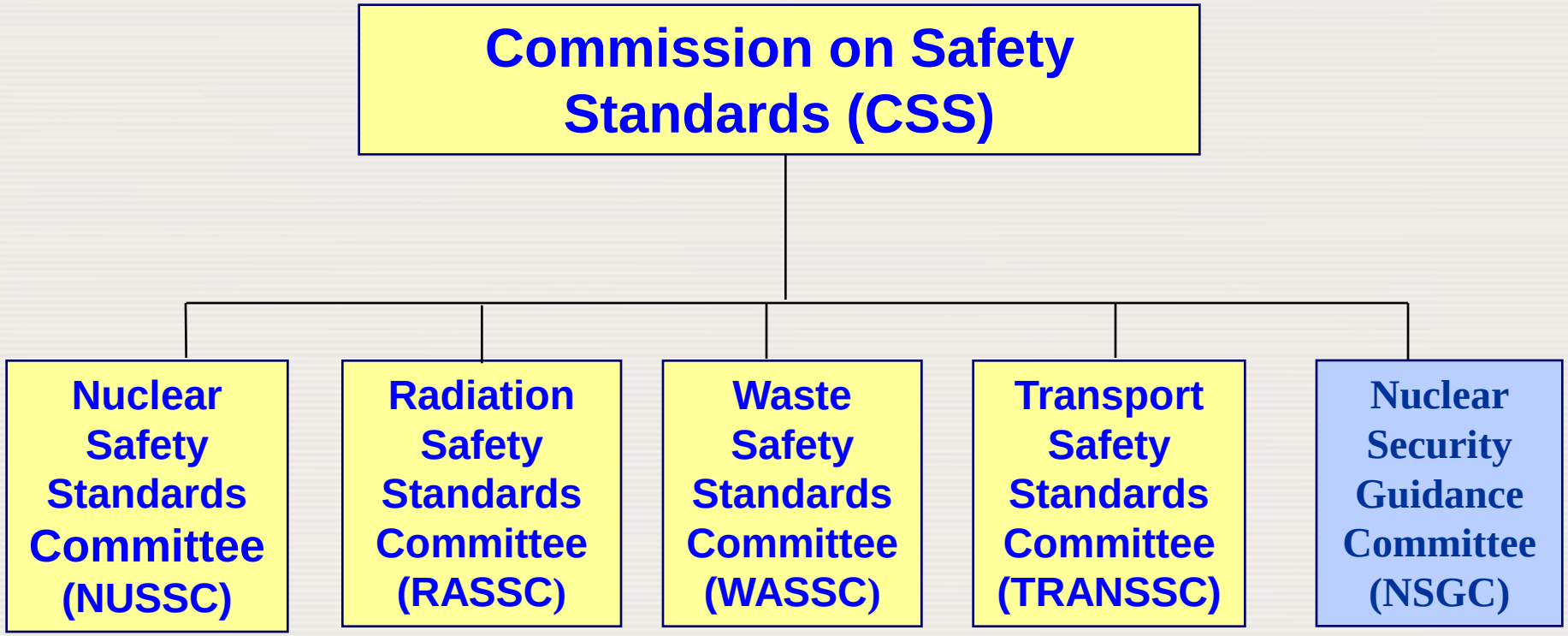
- Part 1 Governmental, Legal and Regulatory Framework
- Part 2 Leadership and Management for Safety
- Part 3 Radiation Protection and Safety of Radiation Sources
- Part 4 Safety Assessment for Facilities and Activities
- Part 5 Predisposal Management of Radioactive Waste
- Part 6 Decommissioning and Termination of Activities
- Part 7 Emergency Preparedness and Response

Specific Safety Requirements

1. Site Evaluation for Nuclear Installations
2. Safety of Nuclear Power Plants

   2.1 Design and Construction
   2.2 Commissioning and Operation
3. Safety of Research Reactors
4. Safety of Nuclear Fuel Cycle Facilities
5. Safety of Radioactive Waste Disposal Facilities
6. Safe Transport of Radioactive Material

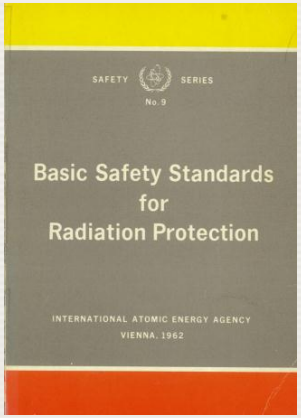
IAEA Safety Standards

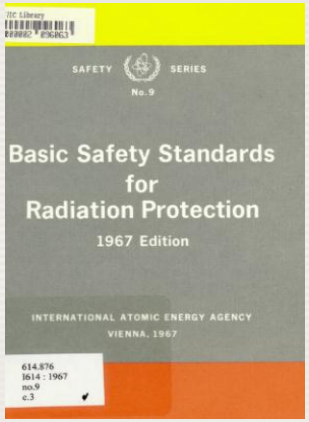


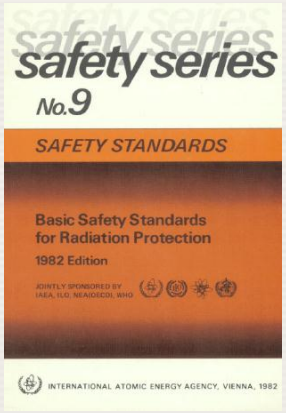
History

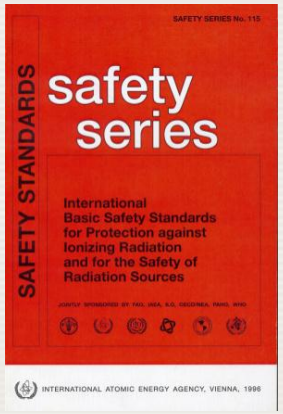
- ICRP recommendations
- 1958 (“Publication 1”)
- 1966 (Publication 9)
- 1977 (Publication 26)
- 1990 (Publication 60)
- 2007 (Publication 103)

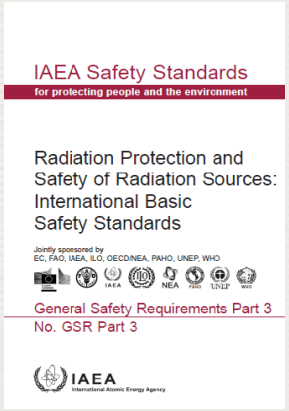
- IAEA Basic Safety Standards
- 1962
- 1967
- 1982
- 1996
- 2014 – The New BSS











Main requirements

- The BSS – GSR Part 3
- GSR Part – 1
- GSR Part – 7

- A number of safety guides/reports

- ILO

Radiation Protection convention 115

A number of occupational safety and health series.

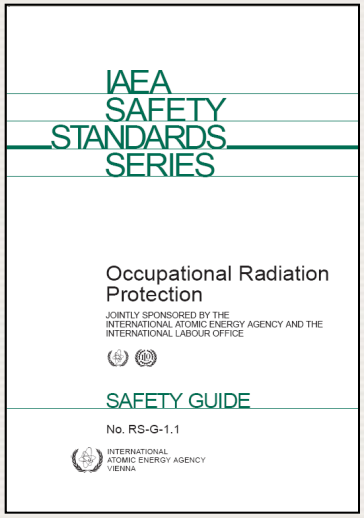
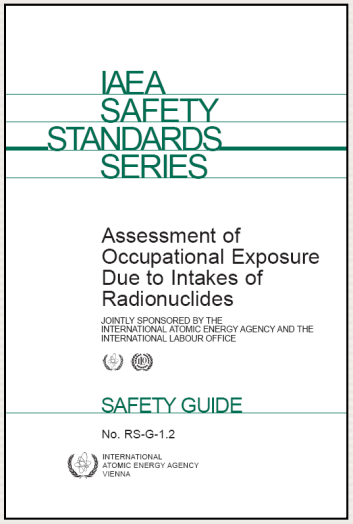
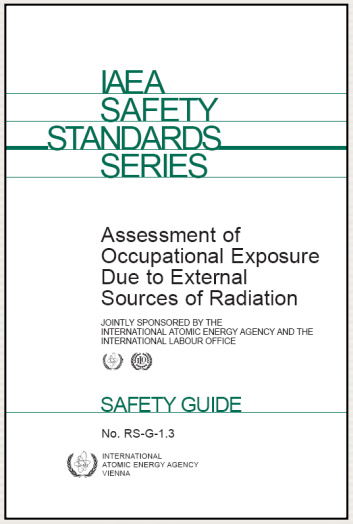
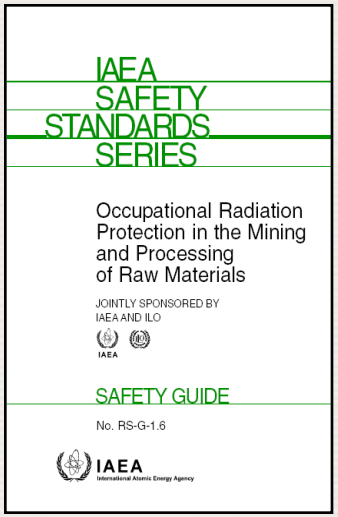
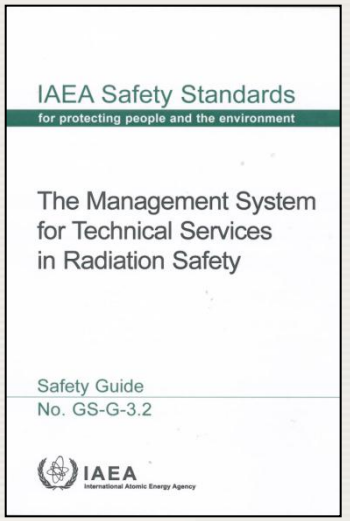
Occupational  DS453

Medical  DS399

Public  DS432

DS453 Occupational Radiation Protection

Combine, revise and supersede five existing safety guides

RS-G-1.1	RS-G-1.2	RS-G-1.3	RS-G-1.6	GS-G-3.2
				
1999	1999	1999	2004	2008

DS453 – new draft standard

DS453
10February 2014

IAEA SAFETY STANDARDS

For protecting people and environment

Draft Version 3.3

Step : 8 Solicit Member States Comments

Review Committees: RASSC (lead), WASSC, NUSSC and TRANSSC

Deadline for comments: **20 June 2014**

Occupational Radiation Protection

Proposed Joint Sponsors - IAEA AND ILO

DRAFT SAFETY GUIDE
DS453

IAEA
International Atomic Energy Agency

IAEA

Guidance on occupational radiation protection

JOINT SPONSOR

International Atomic Energy Agency - IAEA

International Labour Office - ILO

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APPENDICES

1. Exposure of workers to NORM
2. Methods and Systems for Individual Monitoring for Assessment of External Exposure
3. Workplace Monitoring Instruments for Assessment of External Exposure
4. Biokinetic Models for Internal Exposure Assessment
5. Methods for Individual Monitoring of Internal Contamination

REFERENCES

245 references

ANNEXE

1. Techniques for Retrospective Dosimetry.

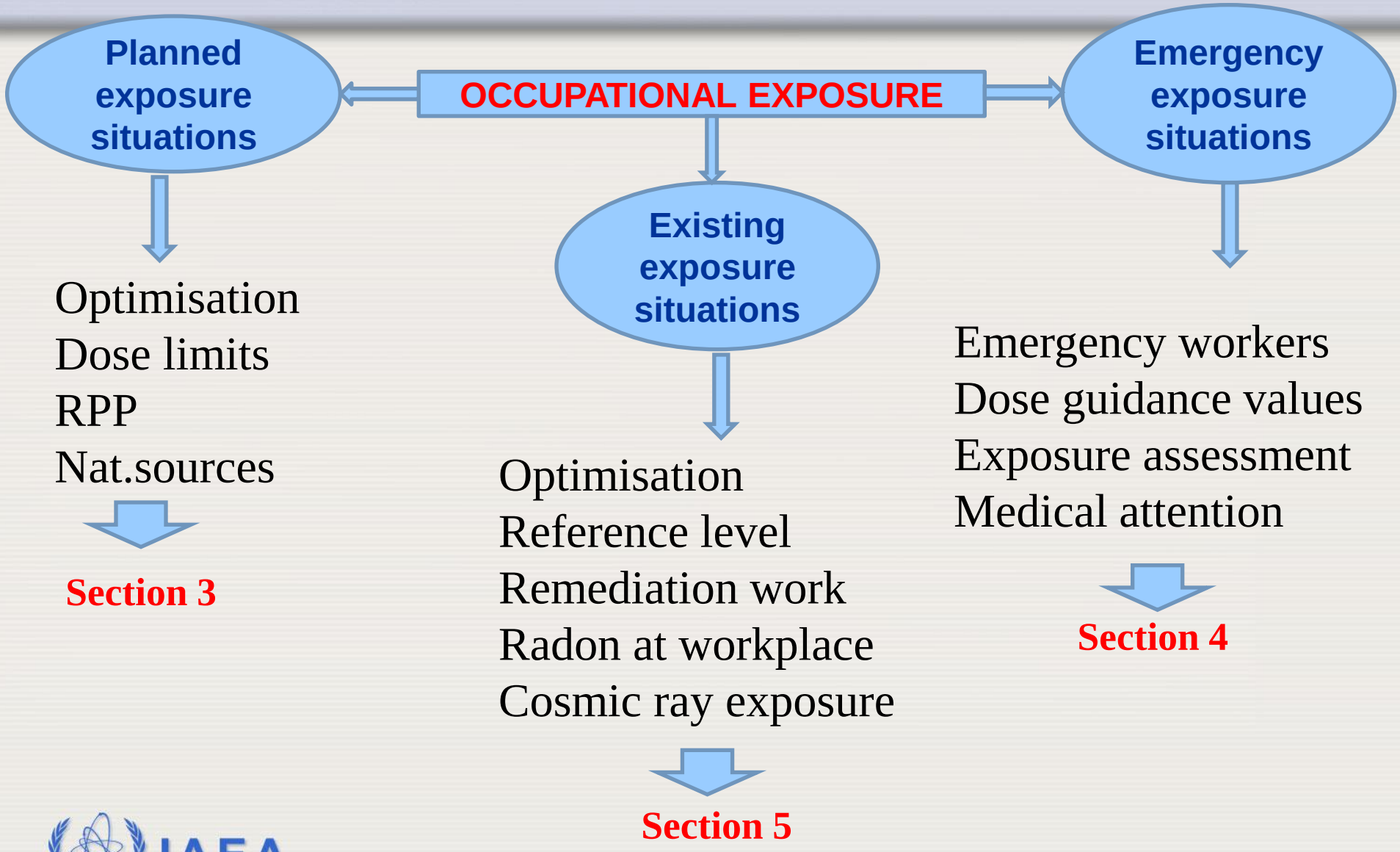
Main Changes

- Terminologies and concepts
- Planned exposure situations – practice
- Dose limits – lens of the eye
- Existing exposure situations – Reference Level
- Itinerant workers
- Female workers during and after pregnancy
- Emergency exposure situations
- Exposure of workers to natural sources
- Remediation of contaminated areas
- Occupational exposure to cosmic rays
- Assessment of occupational exposure

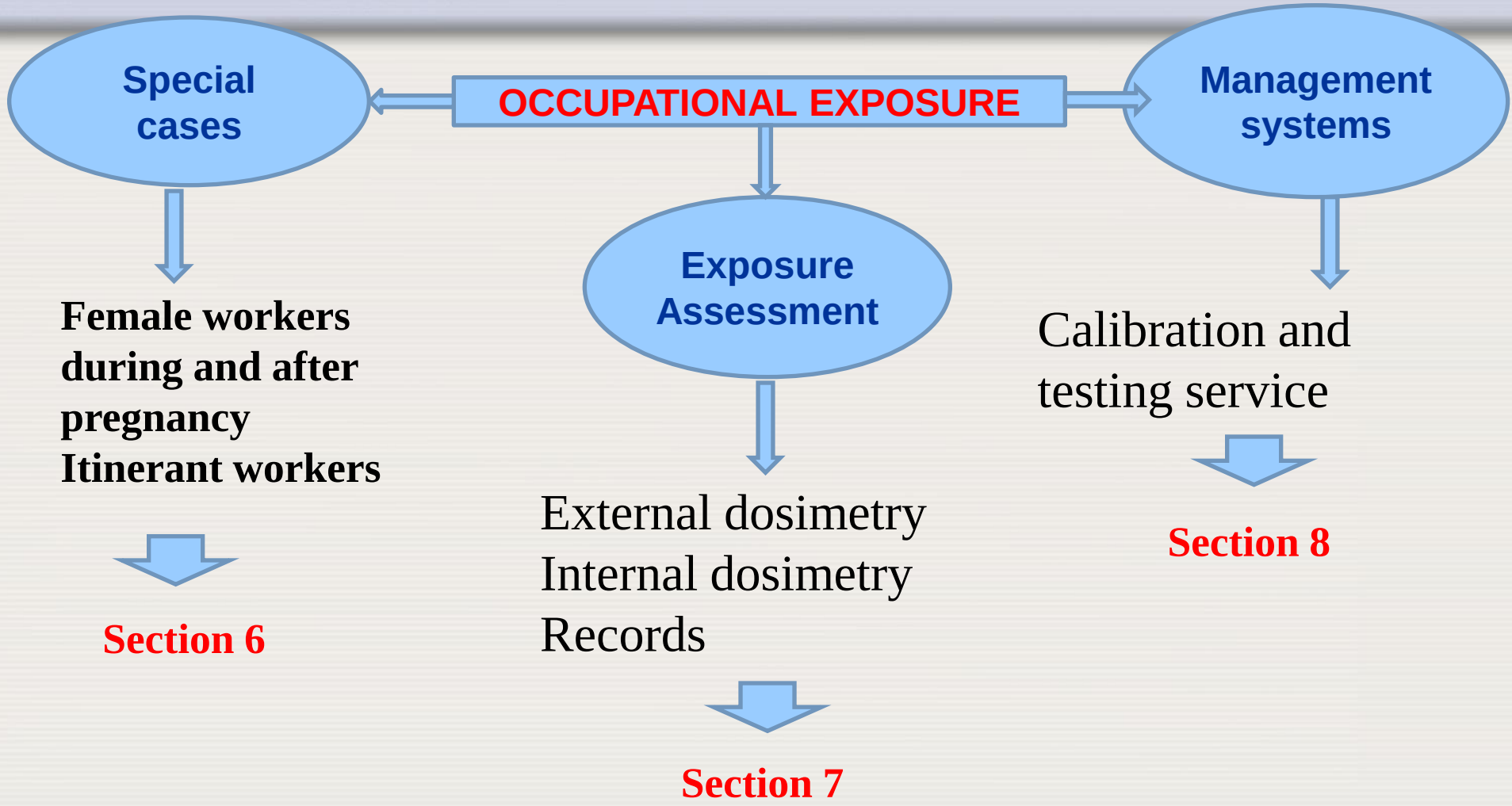
Section 2

- Frame work
  - Types of exposure situations
  - RP principles
  - Responsibilities
  - Graded approach
  - Management system
  - Dosimetric quantities
    - Operational quantities for individual (external and internal) and workplace monitoring
    - Quantities for monitoring radon and thoron progeny

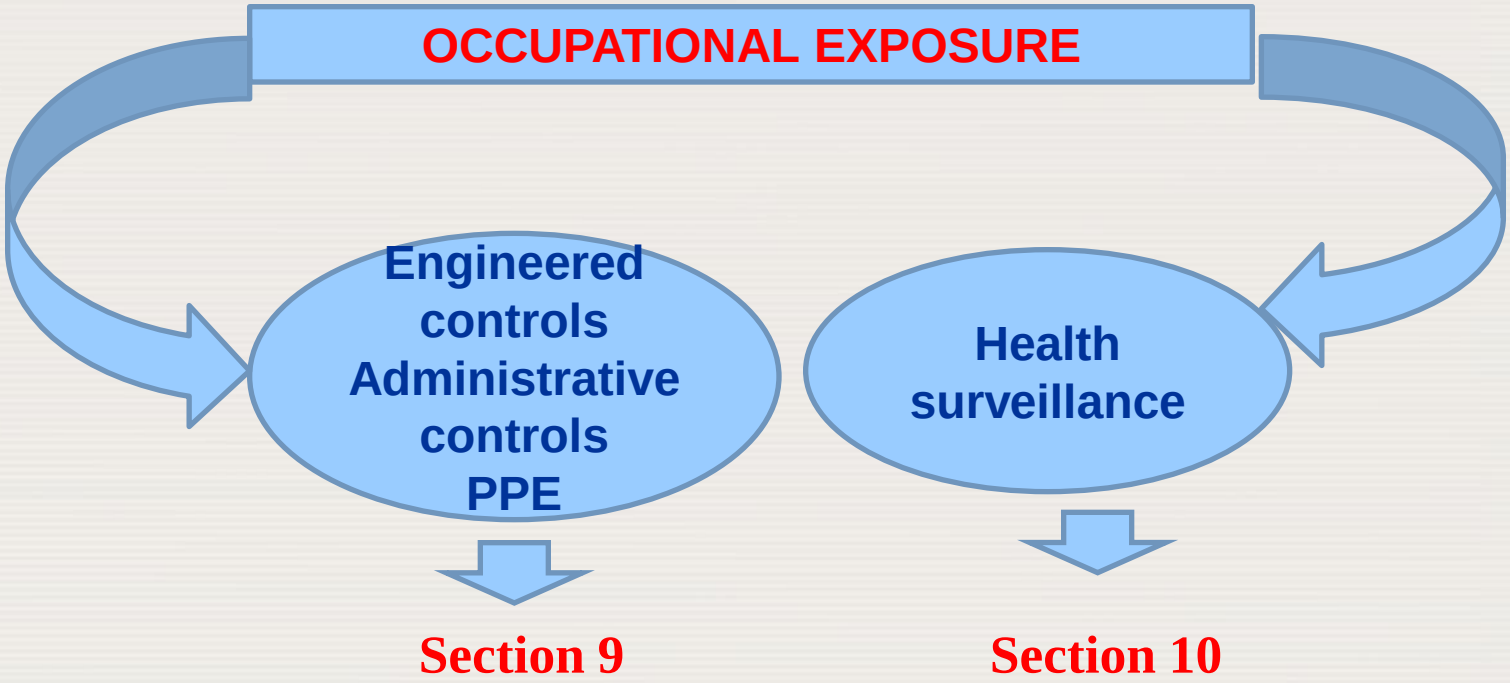
Guidance


OCCUPATIONAL EXPOSURE
Planned exposure situations
Existing exposure situations
Emergency exposure situations
Optimisation
Dose limits
RPP
Nat.sources
Section 3
Optimisation
Reference level
Remediation work
Radon at workplace
Cosmic ray exposure
Section 5
Emergency workers
Dose guidance values
Exposure assessment
Medical attention
Section 4

Guidance


Special cases
OCCUPATIONAL EXPOSURE
Management systems
Exposure Assessment
Female workers during and after pregnancy
Itinerant workers
Section 6
External dosimetry
Internal dosimetry
Records
Section 7
Calibration and testing service
Section 8

Guidance


OCCUPATIONAL EXPOSURE
Engineered controls Administrative controls PPE
Health surveillance
Section 9
Section 10

Req. 6: Graded approach

The application of the requirements of these Standards in planned exposure situations shall be commensurate with the characteristics of the practice or source within a practice and with the magnitude and likelihood of the exposures.

The types of dose restrictions

Type of situation	Occupational	Public	Medical
Planned exposure	Dose limit Dose constraint	Dose limit Dose constraint	Diagnostic reference level
Emergency exposure	Reference level[a]	Reference level	N.A.
Existing exposure	Reference level	Reference level	N.A.

[a] Long-term recovery operations should be treated as part of planned occupational exposure

Schedule III:
Dose Limits for Planned Exposure Situations

	Occupational Exposure	Public	Apprentices
Effective dose	20 mSv/yr (5yrs avg) *100 mSv/5yrs 50 mSv:single yr	1 mSv/yr (at least 5 yrs avg)	6 mSv/yr
Eq. dose to lens of the eye	20 mSv/yr (5yrs avg) *100 mSv/5yrs 50 mSv:single yr	15 mSv/yr	20 mSv/yr
Eq. dose to hands, feet & skin	500 mSv/yr	50 mSv/yr	150 mSv/yr

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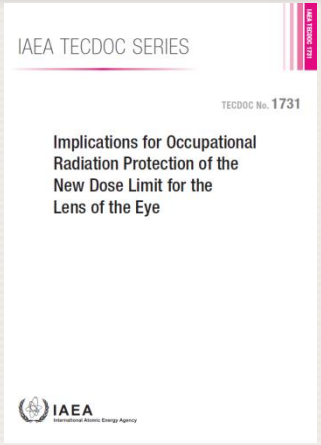
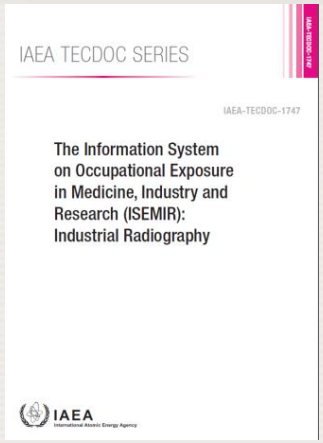
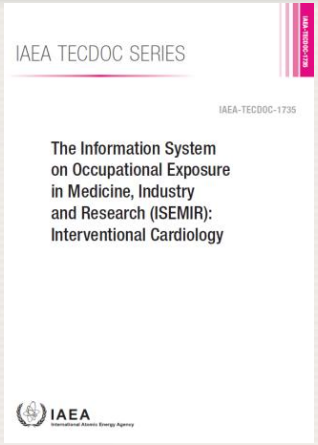
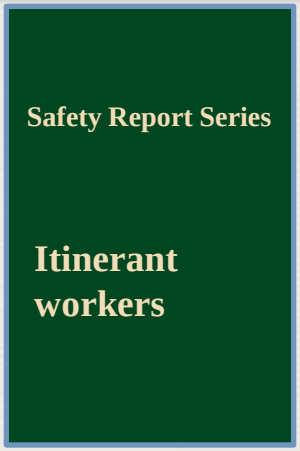
- Radon at workplace – Maximum Reference Level 1000 Bq/m3
- Cosmic exposure – 5 mSv/y
- NORM

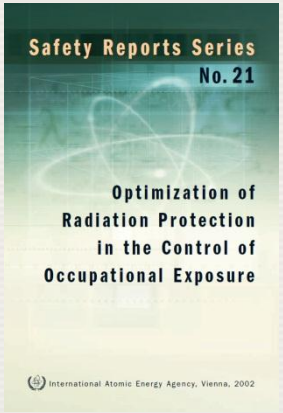
Other relevant guidance material (1)

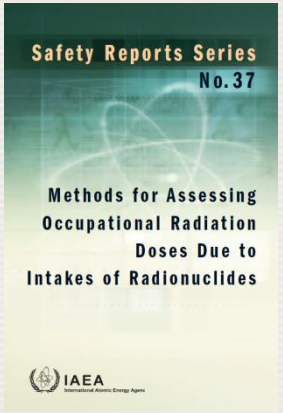


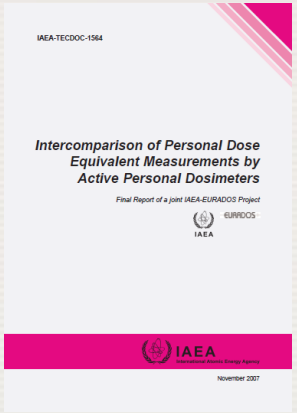


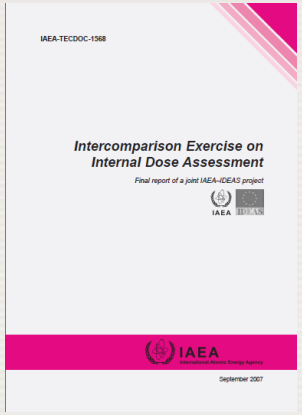












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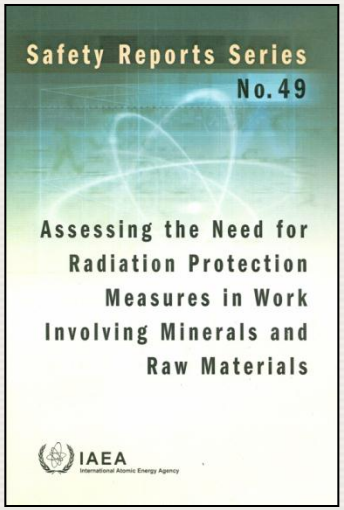
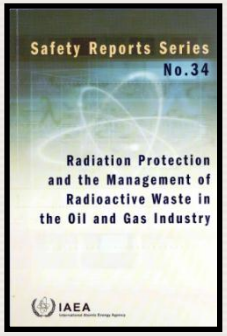
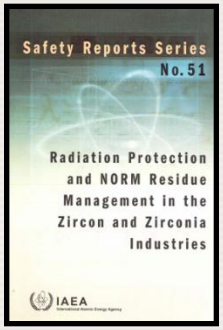
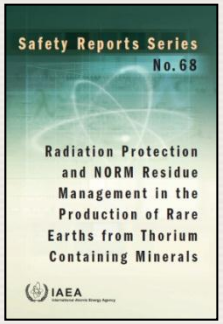
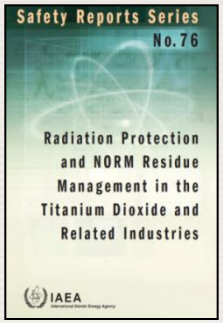
Other relevant guidance material (2) - NORM

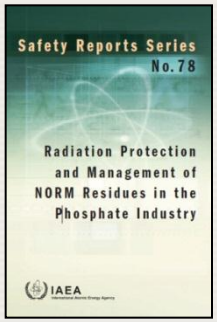












Many thanks for your attention...

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