

**SPESS F**  
**Document Preparation Profile (DPP)**  
**Version 1.0 approved by CSS**

## **1. IDENTIFICATION**

**Document Category or set of publications to be revised in a concomitant manner**

**Safety Guides**

**Working ID: DS519**

**Proposed Title: Protection of Workers against Exposure due to Radon**

**Proposed Action: new document**

**Review Committee(s): RASSC**

**Technical Officer(s): Olga German and Jizeng Ma**

## **2. BACKGROUND**

IAEA Safety Standards Series No, GSR Part 3 establishes requirements for a systematic approach for the protection of occupationally exposed workers. The requirements cover responsibilities of all parties responsible for protection and safety: governments, regulatory bodies and/or other competent authorities, employers and workers.

Workplaces, in which exposure to radon might occur cover all types of facilities from conventional offices to NORM industries, and nuclear fuel cycle facilities. Specific recommendations on building a strategy and addressing the protection of workers against exposure to radon is needed for different involved parties, taking into account in particular that many of which often do not have a background in radiological protection.

## **3. JUSTIFICATION FOR THE PRODUCTION OF THE DOCUMENT**

Technical experts from Member States have reviewed existing safety requirements publications, Safety Guides and other IAEA publications and found that: SSG-32 addresses public exposure to indoor radon, while GSG-7 covers general approaches to Occupational Radiation Protection in planned, emergency and existing exposure situations, but does not systematically address protection against exposures to radon in workplaces. This new proposed Safety Guide on the topic of radon exposure in workplaces will specifically address this gap. Other issues relevant to the justification are:

- GSG-7 is aimed at persons with a good understanding of radiation protection, whereas the target audience for this Safety Guide on radon in workplaces is intended to include persons that might not have a background in radiological protection.
- Safety Report Series No. 33 on Radiation Protection against Radon in Workplaces other than Mines is out of date, having been published in 2003. It pre-dates the publication of ICRP Publication 103 and GSR Part 3.
- There is potential co-sponsorship by ILO.

#### 4. OBJECTIVE

The objective of the proposed Safety Guide is to provide recommendations to governments, regulatory bodies and other relevant competent authorities, employers, licensees, registrants, workers and service providers on how to provide protection against exposure due to radon in workplaces, in planned and existing exposure situations, including the situation of combined exposure to radon and other sources.

Specific guidance on use of the graded approach in the protection of workers against exposure to radon will be included.

#### 5. SCOPE

The proposed Safety Guide will cover responsibilities of the government, regulatory body and/or other competent authorities, employers, licensees and/or registrants, service providers and workers exposed to radon in existing and planned exposure situations.

The Safety Guide will cover protection of workers against exposure due to radon in all different types of workplaces including workplaces in above ground buildings (e.g. offices, shops, industrial facilities), underground workplaces (e.g. mines, excavations works, tunnels, storages), as well as, within industries involving NORM that results in occupational exposure to radon. Protection of the public entering workplaces with radon exposure will be addressed.

The scope of the proposed SSG would be limited to the exposure due to radon, because the other exposure pathways are covered in GSG-7 occupational exposure due to natural sources of radiation, and due to the specific nature of radon regarding its occurrence in various types of workplaces, as well as, its characteristics as a particular exposure pathway affecting the arrangements needed for appropriate worker protection. These are addressed through the specific safety reports for different industrial activities involving NORM. Details on specific methods of radon prevention and remediation are outside the scope of this Safety Guide. Exposure to thoron in workplaces will be addressed, but limited.

#### 6. PLACE IN THE OVERALL STRUCTURE OF THE RELEVANT SERIES AND INTERFACES WITH EXISTING AND/OR PLANNED PUBLICATIONS

The proposed Safety Guide will support the following Safety Standards:

- GSR Part 3, Radiation Protection and Safety of Radiation Sources: International Basic Safety Standards
- GSG-7, Occupational Radiation Protection.

Placement of the proposed Safety Guide within the IAEA safety standards is shown below.

Category of IAEA standards		Occupational exposure	Public exposure
Safety Fundamentals		SF 1 Fundamental Safety Principles	
Safety Requirements		GSR Part 3 Basic Safety Standards	
Safety Guides	General	GSG 7 Occupational Radiation Protection	GSG 8 Radiation Protection of the Public and the Environment

	Radon specific	<b>SSG-XX</b> <b>Protection of Workers against Exposure due to Radon</b>	SSG-32 Protection of the Public against Exposure Indoors due to Radon and Other Natural Sources of Radiation
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## 7. OVERVIEW

### 1. INTRODUCTION

- 1.1. Background
- 1.2. Objective
- 1.3. Scope
- 1.4. Structure

### 2. OVERVIEW OF APPROACHES FOR PROTECTION OF WORKERS AGAINST EXPOSURE TO RADON

### 3. FRAMEWORK FOR PROTECTION OF WORKERS AGAINST EXPOSURE TO RADON IN EXISTING EXPOSURE SITUATIONS

#### 3.1. Government

- 3.1.1. Identification of workplaces subject to radon exposure
- 3.1.2. Information collection and provision
- 3.1.3. Assignment of responsibilities and resources

#### 3.2. Regulatory body or other competent authority

- 3.2.1. Regulatory framework on radon in workplaces in existing exposure situation
- 3.2.2. Prevention of radon in new workplaces
- 3.2.3. Measurement service provider
- 3.2.4. Measurement methodology

#### 3.3. Employer

- 3.3.1. Assessing radon exposures against the reference level;
- 3.3.2. Justification of remediation
- 3.3.3. Remediation and optimization
- 3.3.4. Notification

### 4. FRAMEWORK FOR PROTECTION OF WORKERS AGAINST EXPOSURE TO RADON IN PLANNED EXPOSURE SITUATIONS

#### 4.1. Government

- 4.1.1. Assignment of responsibilities and resources
- 4.1.2. Legal and regulatory framework for safety
- 4.1.3. Justification of introduction of new practices involving exposure to radon

#### 4.2. Regulatory body or other competent authority

- 4.2.1. Establishing regulatory control in cases where the reference level continues to be exceeded despite remedial measures

- 4.2.2. Establishing requirements on the control of occupational exposures from radon
- 4.2.3. Addressing radon exposure in situations of multiple sources of exposure
- 4.2.4. Measurement methodology
- 4.2.5. Requirements on measurement service providers and record keeping
- 4.2.6. Requirements for the control of public exposure in the case of workplaces with public access
- 4.3. Employers
  - 4.3.1. Optimization and safety assessment
  - 4.3.2. Radiation protection programme
  - 4.3.3. Protection of outside workers, protection of pregnant or breast-feeding workers
  - 4.3.4. Application of requirements for the control of public exposure in the case of workplaces with public access
- 4.4. Workers
- 4.5. Service providers
- 5. OCCUPATIONAL EXPOSURE TO THORON
  - 5.1. General description of the exposure to thoron and its contribution to the total effective dose.

## REFERENCES

ANNEX I MEASUREMENT TECHNIQUES AND MEASUREMENT PROTOCOLS

ANNEX II GENERAL METHODOLOGY FOR RADON DOSE ASSESSMNET

**8. PRODUCTION SCHEDULE:** Provisional schedule for preparation of the document, outlining realistic expected dates for each step

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STEP 1: Preparing a DPP	2018
STEP 2: Approval of DPP by the Coordination Committee	2018 December
STEP 3: Approval of DPP by the relevant review Committees	June 2019
STEP 4: Approval of DPP by the CSS	December 2019
STEP 5: Preparing the draft Indicate as to whether a TM is expected to be organized for the preparation of the draft	January - July 2020
STEP 6: Approval of draft by the Coordination Committee	August 2020
STEP 7: Approval by the relevant review Committees for submission to Member States for comments	November 2020
STEP 8: Soliciting comments by Member States	
STEP 9: Addressing comments by Member States	February 2021
STEP 10: Approval of the revised draft by the Coordination Committee Review in NSOC-SGDS (Technical Editorial review)	
STEP 11: Approval by the relevant review Committees	November 2021
STEP 12: - Submission to the CSS - Submission in parallel and approval by the Publications Committee - MTCDD Editing - Endorsement of the edited version by the CSS	April 2022
STEP 13: Establishment by the Publications Committee and/or Board of Governors (for SF and SR only))	End 2022
STEP 14: Target publication date	

**9. RESOURCES**

Estimated resources involved by the Secretariat 20 person-weeks and the Member States 50 person-weeks through 3 consultancy meetings.