

**SPESS F**  
**Document Preparation Profile (DPP)**  
**Version 2.0 dated 31-05-2017**

**1. IDENTIFICATION**

**Working ID:** DS499

**Proposed Title:** Specific Safety Guide: Application of the Concept of Exemption

**Proposed Action:** Revision of RS-G-1.7 Application of the Concepts of Exclusion, Exemption and Clearance, 2004

**Review Committee(s)  
or Group:** RASSC (leading committee), WASSC, TRANSSC

**Technical Officer(s):** Haridasan Pappinisseri Puthanveedu, NSRW

**2. BACKGROUND**

Exclusion, exemption and clearance define the scope of regulatory control as it applies to planned exposure situations. Exclusion applies to those planned exposures that are not deemed amenable to control, regardless of the magnitude of the exposures in question. Exemption refers to the determination by a regulatory body that a source or practice need not be subject to some or all aspects of regulatory control. Clearance is the removal of regulatory control by the regulatory body from radioactive material or radioactive objects within notified or authorized practices.

Requirement 8 of *Radiation Protection and Safety of Radiation Sources: International Basic Safety Standards* (GSR Part 3) makes provision for the exemption of practices and sources within practices and for the clearance of sources within notified or authorized practices, consistent with the use of a graded approach. Similar provisions for exemption were given in SS-115, the previous edition of GSR Part 3 that was published in 1996. SS-115 also provided values (in terms of both activity concentration and total activity) for exemption of moderate amounts of material from regulatory control.

The Safety Guide RS-G-1.7 explained the links between exclusion, exemption and clearance and also provide values that can be used for exemption or clearance, as appropriate, of bulk quantities of material. Values are provided for both natural and artificial radionuclides. The models used in the calculations of individual dose are described in SRS-44 — these scenarios are primarily relevant for clearance, since these were found to be the most restrictive. These values for exemption and clearance of bulk amounts of material now appear in GSR Part 3, together with the values for exemption of moderate amounts of material from SS-115. Regarding for natural radionuclides, the values set out in RS-G-1.7 were selected on the basis of consideration of the upper end of the worldwide distribution of activity concentrations in soil provided by UNSCEAR.

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

It is proposed, to separate the guidance currently provided in RS-G-1.7 into two separate safety guides: one dealing with clearance and the other dealing with exemption. Both documents will be developed in coordinated manner to ensure consistency of approach and application. Guidance related to the application of radiological criteria for international trade of non-food commodities containing radionuclides will be dealt with in a separate safety report or a TECDOC.

It is recognized that the values for exemption and clearance currently defined for artificial radionuclides are unnecessarily restrictive in that the exposure scenarios used in their derivation are highly conservative. It is not intended that the revision of RS-G-1.7 will include the derivation of new values for exemption, but rather provide guidance on how to avoid additional layers of conservatism in other steps of the process.

The safety guide RS-G-1.7 was published in 2004, prior to the publication of the Safety Fundamentals SF-1 and the Basic Safety Standards (GSR Part 3). Other key related safety requirements are *Predisposal Management of Radioactive Waste (GSR Part 5)* and *Decommissioning of Facilities (GSR Part 6)*. There are some differences in terminology and approach between SS-115 and GSR Part 3 that necessitate revision of RS-G-1.7. Specifically, the requirements in SS-115 apply to practices and interventions while GSR Part 3 is structured around three different types of exposure situations (planned, emergency, and existing). The concept of exemption in planned exposure situations and application of reference levels for existing exposure situations are both included in GSR Part 3, but supporting guidance has not yet been developed. RS-G-1.7 needs to be updated to take account of these changes.

Section 5 of RS-G-1.7 on the application of the values for exemption needs to be updated to reflect use of the graded approach, in particular in the light of the conservative nature of the values. There is also a need to provide guidance on the exemption process itself, ensuring consistency with what is contained in SSG-36 that addresses exemption specifically as it applies to consumer products. There is also a need to develop surface specific criteria for exemption and provide guidance on the application of such criteria.

#### **4. OBJECTIVE**

The objective of the Safety Guide is to provide guidance on exemption issues in the framework of planned exposure situations. The safety guide will cover similar subject matter to that in RS-G-1.7, but use the newer concepts and definitions, such as exposure situations given in GSR Part 3. The document will be of particular value for regulatory bodies in Member States to assist them the applying the GSR Part 3 requirements on the exemption of a source or practice from regulatory control.

#### **5. SCOPE**

The scope of this new Safety Guide is to describe the process of exemption from regulatory control. The issue of exclusion and references to SSG-36 on consumer products will be addressed in the introductory sections of the proposed new safety guide using text that will be duplicated in the new safety guide on clearance. The text will explain the principle of exclusion as well as its relationship to exemption and clearance, but no specific guidance will be provided.

The issues of clearance and international trade are out of the scope of this Safety Guide.

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

The proposed safety guide will be one of a set of documents supporting GSR Part 3 *Radiation Protection and Safety of Radiation Sources: International Basic Safety Standards*. Being part of the revision of RS-G-1.7, the present Safety Guide development should be closely coordinated with the proposed new Safety Guide on the Application of the Concept of Clearance.

The safety guide will also take account of SSG-36, *Radiation Safety for Consumer Products* and IAEA-TECDOC-1679, *Exemption from Regulatory Control of Goods Containing Small Amounts of Radioactive Material*, as well the discussion of RASSC and WASSC during their November 2015 and June 2016 meetings and material coordinated through the RASSC Electronic Working Group.

The following documents are relevant to the issues to be covered by the new Safety Guide:

1. IAEA, Application of the Concepts of Exclusion, Exemption and Clearance (RS-G-1.7);
2. IAEA, Radiation Protection and Safety of Radiation Sources: International Basic Safety Standards (GSR Part 3);
3. IAEA, Exemption from Regulatory Control of Goods Containing Small Amounts of Radioactive Material (TECDOC-1679);
4. IAEA, Radiation Safety for Consumer Products (SSG-36);
5. IAEA, Derivation of Activity Concentration Values for Exclusion, Exemption and Clearance (SRS-44);
6. ICRP, 2007. Scope of Radiological Protection Control Measures. ICRP Publication 104;
7. ICRP, 2007. The 2007 Recommendations of the International Commission on Radiological Protection. Publication 103;
8. Application of the Concept of Clearance (DS500, proposed safety guide)

## **OVERVIEW**

The provisional Table of Content is provided below in this Section.

### **I. INTRODUCTION**

Background

Objective

Scope

Structure

### **II. THE CONCEPTS**

Planned Exposure Situations and Existing Exposure Situations

Concepts of Exemption, Exclusion and Clearance

Role of Exemption from Regulatory Control in Planned Exposure Situations

Justification of practice

Authorization of practice

Graded Approach

Generic and Specific Exemption

### **III. ROLES AND RESPONSIBILITIES**

Government

Regulatory body

Applicant

Organizational and administrative arrangements

IV GENERIC EXEMPTION

Application of GSR Part 3 values of activity concentrations for bulk quantities

Application of GSR Part 3 values of activity concentrations and total activities for moderate quantities

V OTHER EXEMPTION ISSUES

Safety Assessment

“Type approval” exemption

Revoking or revision of the exemption

Exemption on the basis of surface contamination

ANNEX I Dosimetric Modelling of Surface Contamination

Annex II Examples of radionuclide specific values for exemption based on surface contamination

## 8. PRODUCTION SCHEDULE

Provisional schedule for preparation of the document, outlining realistic expected dates:

STEP 1: Preparing a DPP	July 2016
STEP 2: Approval of DPP by the Coordination Committee	September 2016
STEP 3: Approval of DPP by the relevant review Committees	November 2016
STEP 4: Approval of DPP by the CSS	November 2017
STEP 5: Preparing the draft	December 2017 - June 2019
STEP 6: Approval of draft by the Coordination Committee	August 2019
STEP 7: Approval by the relevant review Committees for submission to Member States for comments	November 2019
STEP 8: Soliciting comments by Member States	December 2019 – March 2020
STEP 9: Addressing comments by Member States	April 2020
STEP 10: Approval of the revised draft by the Coordination Committee Review in NS-SSCS	October 2020
STEP 11: Approval by the relevant review Committees	June 2021
STEP 12: Endorsement by the CSS	November 2021
STEP 13: Establishment by the Publications Committee and/or Board of Governors (for SF and SR only))	March 2022
STEP 14: Target publication date	August 2022

## 9. RESOURCES

Estimated resources involved by the Secretariat (person-weeks) and the Member States (number and type of meetings)

- 6 CS meetings (3 consultants x 5 days for each CS meeting)
- 1 TM meeting (20 participants x 5 days)
- IAEA staff:
  - 1 Technical Officer – 30 weeks
  - 1 administrative assistant – 8 weeks