SPESS F
Document Preparation Profile (DPP)
Version 5 dated 3 December 2019

1. IDENTIFICATION

Document Category: **Specific Safety Guide**

Working ID: **DS521**

Proposed Title: **Radiation Protection Programmes for the Transport of Radioactive Material**

Proposed Action: **Revision of Safety Guide No. TS-G-1.3, Radiation Protection Programmes for the Transport of Radioactive Material, which was published in 2007**

Review Committee(s) or Group: **TRANSSC, EPReSC, RASSC**

Technical Officer(s): **Eric H. Reber**

2. BACKGROUND

IAEA Safety Standards Series No. TS-G-1.3, Radiation Protection Programmes for the Transport of Radioactive Material, was published in 2007. The objective of TS-G-1.3 is to provide guidance on meeting the requirements for the establishment of radiation protection programmes for the transport of radioactive material, to optimize radiation protection in order to meet the requirements for radiation protection that underlie the Transport Regulations.

Since the publication of TS-G-1.3, the two publications in the Safety Requirements category that it primarily supports have been revised: once in the case of the BSS/GSR Part 3; and three times in case of TS-R-1/SSR-6. In addition, two Safety Guides (GSG-7 Occupational Radiation Protection and GSG-8 Radiation Protection of the Public and the Environment) have been published to provide recommendations for the implementation of GSR Part 3. The revision of TS-G-1.3 is proposed to:

— Provide recommendations on how to meet the relevant requirements established in GSR Part 3 and SSR-6 (Rev. 1);

— Ensure consistency with other relevant IAEA safety standards that were published recently, e.g. GSR Part 2, GSR Part 7, GSG-7 and GSG-8;

— Incorporate the experience gained from the application of TS-G-1.3 by Member States.

This proposed revision of TS-G-1.3 is part of a plan (approved by TRANSSC) to revise all Safety Guides that support the Regulations for the Safe Transport of Radioactive Material, the most recent revision of which was published in 2018 as SSR-6 (Rev. 1).

3. JUSTIFICATION FOR THE PRODUCTION OF THE DOCUMENT

Revision of TS-G-1.3 is overdue in that since its publication, the two Safety Requirements publications that it primarily supports have been revised a total of four times. Due to a lack of resources and competing priorities, it has not been possible until now to revise this Safety Guide. Although guidance has already been provided by

GSG-7 and GSG-8 with regard to occupational radiation protection and radiation protection of the public and the environment, users of this publication will benefit from an updated version of the Safety Guide that is based on current safety standards and takes account of recent operating experience and current technology. A working group of TRANSSC 33 recommended that TS-G-1.3 should be revised, and identified approximately 25 issues to be addressed as part of the revision process. The report of this working group is provided in Annex 1 of this DPP.

4. OBJECTIVE

The objective of the proposed revision of TS-G-1.3 is to provide recommendations and guidance on meeting the requirements established in para. 302 of SSR-6 (Rev. 1) for a radiation protection programme for the transport of radioactive material, with due consideration of already published IAEA General Safety Guides dealing with radiation protection.

The intended audience of the Safety Guide includes competent authorities, consignors, carriers and consignees, some of whom might not be familiar with the IAEA safety standards that address topics relevant to radiation protection programmes (e.g. occupational radiation protection, radiation protection of the public and protection of the environment, and protection of emergency workers and helpers), others may however already carry out other practices requiring the implementation of radiation protection measures (for example, the operator of nuclear installation, a nuclear medicine department or an industrial radiographer). Details from other Safety Guides will not be included in the proposed Safety Guide unless they are directly applicable to radiation protection programmes for the transport of radioactive material. In this case, to ensure consistency within the IAEA Safety Standards series, either the text from these Safety Guides will be cited between quotation marks or DS521 will refer to the relevant paragraphs of these Safety Guides without any attempt to summarize the recommendations.

5. SCOPE

The Scope of the proposed Safety Guide is the same as in the Transport Regulations (see para. 106 of SSR-6 (Rev 1)).

The Safety Guide will address the requirements for a radiation protection programme established in SSR-6 (Rev. 1) and GSR Part 3; it will provide recommendations on meeting the requirements for criticality safety by making reference to the recommendations provided in SSG-27, Criticality Safety in the Handling of Fissile Material; it will not provide recommendations for any non-radiological hazards associated with the transport of radioactive material.

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

The proposed publication will be a Specific Safety Guide in the group of safety standards on the safe transport of radioactive material. A table that provides an overview of the development of draft safety standards and other documents related to transport safety is provided in Annex 2.

Historically, the IAEA Transport Regulations and the supporting Safety Guides have not been co-sponsored by other international organizations. Regarding interaction with international organizations, ICAO, IMO and the UNECE are observers to TRANSSC and as such are invited to participate in discussions and provide input on draft standards.

The revised Safety Guide will interface with the following IAEA Safety Standards and other publications (this is not, and cannot be, regarded as an exclusive or exhaustive list):

- INTERNATIONAL ATOMIC ENERGY AGENCY, Regulations for the Safe Transport of Radioactive Material, 2018 Edition, IAEA Safety Standards Series No. SSR-6 (Rev. 1), IAEA, Vienna (2018).
- INTERNATIONAL ATOMIC ENERGY AGENCY, Leadership and Management for Safety, IAEA Safety Standards Series No. GSR Part 2, IAEA, Vienna (2016).

— EUROPEAN COMMISSION, FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS, INTERNATIONAL ATOMIC ENERGY AGENCY, INTERNATIONAL LABOUR ORGANIZATION, OECD NUCLEAR ENERGY AGENCY, PAN AMERICAN HEALTH ORGANIZATION, UNITED NATIONS ENVIRONMENT PROGRAMME, WORLD HEALTH ORGANIZATION, Radiation Protection and Safety of Radiation Sources: International Basic Safety Standards, IAEA Safety Standards Series No. GSR Part 3, IAEA, Vienna (2014).
— INTERNATIONAL ATOMIC ENERGY AGENCY, INTERNATIONAL LABOUR OFFICE, Occupational Radiation Protection, IAEA Safety Standards Series No. GSG-7, IAEA, Vienna (2018).
— INTERNATIONAL ATOMIC ENERGY AGENCY, UNITED NATIONS ENVIRONMENT PROGRAMME, Radiation Protection of the Public and the Environment, IAEA Safety Standards Series No. GSG-8, IAEA, Vienna (2018).
— FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS, INTERNATIONAL ATOMIC ENERGY AGENCY, INTERNATIONAL CIVIL AVIATION ORGANIZATION, INTERNATIONAL LABOUR ORGANIZATION, INTERNATIONAL MARITIME ORGANIZATION, INTERPOL, OECD NUCLEAR ENERGY AGENCY, PAN AMERICAN HEALTH ORGANIZATION, PREPARATORY COMMISSION FOR THE COMPREHENSIVE NUCLEAR-TEST-BAN TREATY ORGANIZATION, UNITED NATIONS ENVIRONMENT PROGRAMME, UNITED NATIONS OFFICE FOR THE COORDINATION OF HUMANITARIAN AFFAIRS, WORLD HEALTH ORGANIZATION, WORLD METEOROLOGICAL ORGANIZATION, Preparedness and Response for a Nuclear or Radiological Emergency, IAEA Safety Standards Series No. GSR Part 7, IAEA, Vienna (2015).
— INTERNATIONAL ATOMIC ENERGY AGENCY, Planning and Preparing for Emergency Response to Transport Accidents Involving Radioactive Material, IAEA Safety Standards Series No. TS-G-1.2 (ST-3), IAEA, Vienna (2002) (under revision as DS469).
— INTERNATIONAL CIVIL AVIATION ORGANIZATION, Technical Instructions for the Safe Transport of Dangerous Goods by Air, ICAO, Montreal (2016).
— INTERNATIONAL MARITIME ORGANIZATION, International Maritime Dangerous Goods Code (IMDG Code), IMO, London (2016).
— INTERNATIONAL ATOMIC ENERGY AGENCY, Advisory Material for the IAEA Regulations for the Safe Transport of Radioactive Material (2012 Edition), IAEA Safety Standards Series No. SSG-26, IAEA, Vienna (2014) (under revision as DS496).
— INTERNATIONAL ATOMIC ENERGY AGENCY, The Management System for the Safe Transport of Radioactive Material, IAEA Safety Standards Series No. TS-G-1.4, IAEA, Vienna (2008).
— INTERNATIONAL ATOMIC ENERGY AGENCY, Leadership, Management and Culture for Safety, IAEA Safety Standards Series No. GSG-XX (DS513), IAEA, Vienna (20XX).
— INTERNATIONAL ATOMIC ENERGY AGENCY, Compliance Assurance for the Safe Transport of Radioactive Material, IAEA Safety Standards Series No. TS-G-1.5, IAEA, Vienna (2009) (under revision as DS515).
— INTERNATIONAL ATOMIC ENERGY AGENCY, Safe Transport of Radioactive Material, Fourth Edition, IAEA Training Course Series No. 1, IAEA, Vienna (2006).
— INTERNATIONAL ATOMIC ENERGY AGENCY, Regulatory Control for the Safe Transport of Naturally Occurring Radioactive Material (NORM)—Report of a Coordinated Research Project 2007 – 2010, IAEA-TECDOC-1728, IAEA, Vienna (2013).

7. OVERVIEW

The outline of the publication will be similar to that of the publication that is being revised.

ANNEX X: EXAMPLE OF RADIATION PROTECTION AND EMERGENCY RESPONSE INSTRUCTIONS FOR A VEHICLE OPERATOR

CONTRIBUTORS TO DRAFTING AND REVIEW

8. PRODUCTION SCHEDULE: Provisional schedule for preparation of the document, outlining realistic expected dates for each step *(fill the column corresponding to your proposed document and delete the other columns)*:

	A*	B*	C*
STEP 1: Preparing a DPP	DONE	DONE	DONE
STEP 2: Approval of DPP by the Coordination Committee	Q3, 2019		
STEP 3: Approval of DPP by the relevant review Committees	Q4, 2019		
STEP 4: Approval of DPP by the CSS	Q2, 2020		
STEP 5: Preparing the draft Indicate as to whether a TM is expected to be organized for the preparation of the draft	Q4, 2019 – Q3, 2020		
STEP 6: Approval of draft by the Coordination Committee	Q4, 2020		
STEP 7: Approval by the relevant review Committees for submission to Member States for comments	Q2, 2021		
STEP 8: Soliciting comments by Member States	Q3, 2021		
STEP 9: Addressing comments by Member States	Q4, 2021		
STEP 10: Approval of the revised draft by the Coordination Committee Review in NSOC-SGDS (Technical Editorial review)	Q1, 2022		
STEP 11: Approval by the relevant review Committees	Q2, 2022		
STEP 12: - Submission to the CSS - Submission in parallel and approval by the Publications Committee - MTCD Editing - Endorsement of the edited version by the CSS	Q4, 2022		
STEP 13: Establishment by the Publications Committee and/or Board of Governors (for SF and SR only))	N/A		
STEP 14: Target publication date	Q2, 2023		

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- *Column A for Safety Fundamentals, Safety Requirements and Safety Guides.*
- *Column B for Nuclear Security Series publications*
- *Column C for TECDOCs, safety reports and other publications*

9. RESOURCES

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

Four one-week consultancy meetings

Two six-week home based assignments

Secretariat: 12 person-weeks

Annex 1

Report of Working Group 1 of TRANSSC33: TS-G.1.3 Radiation Protection Programmes for the Transport of Radioactive Material

Introduction

WG 1 was assigned to undertake a brief review of TS-G 1.3 to identify whether this document needs a revision using the following TOR.

TOR TS-G-1.3

Whilst operators adopt procedures that control the preparation, loading, transport and unloading of packages there can be a misunderstanding of the purpose of a radiation protection programme (RPP) how one is developed and how it is implemented. It is therefore considered that this document provides important guidance for operators and a review of its scope, content and presentation is needed to ensure it provides a comprehensive and understandable source of guidance information. It will also be useful to consider changes that may address findings relating to RPPs from compliance inspection programmes carried out in your country over the 10 years since TS-G-1.3 was published.

Discussion

The scope, structure and the content was discussed.

Key findings

- Add clarification why criticality safety is not included in the scope of TS-G-1.3.
- Update references to standards, facts and figures through the whole document (e.g. BSS)
- Add the use of ALARA in the objective
- Consider the exposure to the members of the public in demonstrating safety in transport of radioactive material (e.g. para 3.7)
- Use of terminologies and paragraph numbers in line with SSR-6
- Revise the dose rate of 20 μSv/h in the driver's section (Para 8.10)
- Revise Chapter 9 to avoid repetition from TS-G-1.2 and provide concise provisions referring to TS-G 1.2
- Avoid duplication of text with SSR-6, TS-G-1.2, TS-G-1.4 and TS-G-1.5
- Complete revision of all annexes with updated information and examples (the examples are considered an essential part of TS-G-1.3, providing practical guidance and graded approach with illustration)
- Remove annex VII (already in SSR-6)
- Revise annex IX with help of IMO representative
- Annex X: Use of more relevant industry example; consider whether this checklist is necessary
- Annex XI: Move to TS-G 1.2

The discussion notes are presented in Attachment 1.

Recommendation

WG 1 recommends revision of TS-G1.3

Attachment 1

Discussion notes

- 3.6: split up into two parts: 1. transport within an establishment and 2. Dedicated carrier / shipper
- 3.7 and Ch. 4: add guidance for members of the public
- 3.9 (a): expand with examples, e.g. checks of package integrity and radiation levels
- 5.5: add guidance on the interrelation between RPP's of consignors, carriers and consignees
- 5.13: clarify what is meant by 'authority'
- Ch. 6: revise reference to 20 µSv/hr for drivers (new BSS)
- 6.1: clarify ' routine and normal conditions' (ref. SSR-6)
- 6.1.a(ii): align 'reasonable accurate estimates' to new BSS 'conservative estimates' (see also 6.12 and 6.16)
- 6.16 and annex VIII: be careful presenting figures without proper context
- 6.20: update with current (versions of) computer codes
- 6.21: consider adding examples (e.g. loading and unloading of NORM)
- 8.2: align definition of 'critical group' with new BSS
- 8.9: add example of ' some protective measures'
- 8.10: Revise dose rate of 20 µSv/h in driver's section
- Chapter 9: Revise Chapter 9 to avoid duplication of TS-G-1.2. Provide a concise summary with reference to TS-G-1.2
- Annex IX: take into account modal emergency response provisions (e.g. IMDG Code)
- Ch. 11: revise taking into account TS-G-1.4
- Annex I: take into account size of package considering the decrease of radiation levels with distance
- Annex I-V: add example for nuclear fuel cycle and different transport modes
- Annex II-10: add check of packages for contamination
- Annex III-13: add alerting first responders
- Annex VII: Remove annex VII
- Annex-IX revise with input from IMO representative
- Annex X : Use of more relevant industry example
- Annex XI: Move to TS-G 1.2

Attachment 2

List of Participants:

1. S Sarkar, Australia (Chair)
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Annex 2: Programme of Transport Safety Standards Preparation 2017 – 2023: Issue 15 July 2019

	DS 493 PDSR	DS 495 SSR-6	DS 496 SSG26	DS 506 SSG33	DS 469 TS-G-1.2	DS515 TS-G-1.5	TS-G-1.4	DS521 TS-G-1.3	TRANSSC Technical Expert Groups				TRANSSC	CSS	SSR-6 Review Cycle	UN Model Regs.	IMDG Code	ICAO Technical Instructions	SPESS F
									Criticality	Package Performance	Radiation Protection	Transport Operations							
2017																			
Q2			5	1 2	5									April		20th Ed			STEP 1: Preparing a DPP
Q3	9	11	7	3	5								34 / July						
Q4	9	12	8	4 5	5								35 / Dec	Nov					STEP 2: Approval of DPP by the Coordination Committee
	2018																		
Q1		13	9 10	5 6	6				ToR / Programme								2016 Ed		STEP 3: Approval of DPP by the relevant review Committees
Q2		14		7	7	1 2 3							36 / June	April	2018 Ed				
Q3				8	8	5													STEP 4: Approval of DPP by the CSS
Q4				8 9	9	4 5							37 / Nov	Nov					
	2019																		STEP 5: Preparing the draft. Indicate as to whether a TM is expected to be organized for the preparation of the draft
Q1				9 10	9 10	5		1	Annual Report / Programme									2019-20 Ed	
Q2				11	11	5							38 / June	April		21st Ed			STEP 6: Approval of draft by the Coordination Committee
Q3						6		2											
Q4	10 11		11	12	12	7		3 5					39 / Nov	Dec					STEP 7: Approval by the relevant review Committees for submission to Member States for comments
	2020																		
Q1			12			8 9		5	Annual Report / Programme								2018 Ed		STEP 8: Soliciting comments by Member States
Q2	12			14	12	10		4 5					40 / June	April					
Q3	14		14				1 2	5											STEP 9: Addressing comments by Member States
Q4					14	11	3	6					41 / Nov	Nov					
	2021																		STEP 10: Approval of the revised draft by the Coordination
Q1							5		Annual Report / Programme									2021-22 Ed	Committee. Review in NS-SSCS
Q2						12	4 5	7					42 / June	April		22nd Ed			STEP 11: Approval by the relevant review Committees
Q3							5	8											
Q4						14	5	9					43 / Nov	Nov					STEP 12: Endorsement by the CSS
	2022																		
Q1							5 6	10	Annual Report / Programme								2020 Ed		STEP 13: Establishment by the Publications Committee and/or Board of Governors (for SF and SR only))
Q2							7	11					44 / June	April					
Q3							8												STEP 14: Target publication date
Q4							9	12					45 / Nov	Nov					
	2023																		**PRODUCTION SCHEDULE:** Provisional schedule for preparation of safety documents, outlining realistic expected dates for each step
Q1							9 10		Annual Report / Programme									2023-24 Ed	
Q2							11	14					46 / June	April		23rd Ed			
Q3																			
Q4							12						47 / Nov	Nov					