41st Meeting of the Radiation Safety Standards Committee
21 – 23 November 2016

Agenda Item: R4.2
DS499 “Application of the Concept of Exemption Including Criteria for Trade in Contaminated Commodities” (revision of RS-G-1.7)
- DPP for clearance for submission to the CSS

Igor Gusev / RSM / NSRW
New Safety Guide on Application of the Concept of Exemption and Criteria for International Trade

• Lead committee: RASSC
• Other committees: WASSC, TRANSSC
• Scientific secretary: I. Gusev, RSM
Justification

• RS-G-1.7 was published in 2004, prior to the publication of the Safety Fundamentals SF-1 and GSR Part 3.

• The concept of exemption in planned exposure situations and application of reference levels for existing exposure situations are explained in the GSR Part 3. This document also gives derived values for practical application.

• The applicability of the values of activity concentrations for radionuclides of natural origin in bulk for defining the scope of regulatory control should be reconfirmed.

• More generally, the main remaining part is Section 5 of RS-G-1.7 on the application of the values would need to be retained and further developed.

• 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.
Justification

• General Conference: “to further develop a technical document on a harmonized framework for the current international standards relating to radioactivity in commodities.”

• It would appear that the generic values for the exemption and clearance of bulk material given in the BSS would be appropriate for this purpose and this should be clarified in the proposed Safety Guide.

• Requirement 51 of GSR Part 3 (para. 5.22.) requires that “the regulatory body or other relevant authority shall establish specific reference levels for exposure due to radionuclides in commodities such as construction materials, food and feed, and in drinking water, each of which shall typically be expressed as, or be based on, an annual effective dose to the representative person that generally does not exceed a value of about 1 mSv.”

• It is noted that the values in Table 2 of RS-G-1.7 were established on the basis of an annual effective dose of 10 μSv for realistic cases and 1 mSv for low probability cases. This would mean that the 1 mSv criterion for existing exposure situations in BSS Requirement 51 would be met. It will also avoid the calculation of a new set of values.
Justification

There is also a need to provide guidance on the application of exemption to surface contaminated non-food commodities. It is noted that values for surface contamination of packages are provided in the IAEA Transport Regulations and this Safety Guide will need to consider their applicability to surface contaminated non-food commodities.

An objective would be to resist the development of an additional set of values for non-food commodity trade.
Objective

• The objective of the Safety Guide is to provide guidance on exemption issues in the framework of planned exposure situations and application of reference levels in existing exposure situations of international trade.

• The Safety Guide will cover similar ground to that in RS-G-1.7, but use the newer terminology given in GSR Part 3.

• More guidance will however be given on the development of a harmonized approach to the application of the concepts and values given in GSR Part 3 to long-lived radionuclides that may be present in non-food commodities, including those that may have been contaminated as a consequence of an accident, in order to facilitate international trade in such commodities.

• The document will be of particular value for regulatory bodies in Member States to assist them the applying the BSS requirements on the exemption of a source or practice from regulatory control. The application of this Safety Guide will promote the harmonization of trade in contaminated non-food commodities.
Scope

• The Safety Guide will provide guidance on the application of the concept of exemption in a regulatory framework. It will also develop guidance on the application of the requirements in the BSS relating to commodities in existing exposure situations, those that may have been contaminated as a consequence of a nuclear or radiological accident.

• The emergency exposure situations will not be addressed.

• The actual criteria for exemption will not be reviewed or revised — the BSS criteria and derived radionuclide concentrations and total activities of radionuclides will be used without any change, but further consideration will be given to surface contamination of commodities.

• The issue of exclusion will be addressed in the introductory sections using text that is duplicated in the proposed new safety guide on clearance. This will explain the principle and its relationship to exemption and clearance, but no specific guidance is considered necessary.
Related publications and RASSC EWG

- Safety Guide RS-G-1.7;
- GSR Part 3;
- The new Safety Guide planned to be developed in parallel that will address clearance for planned exposure situations;
- Regulations for the Safe Transport of Radioactive Material, (SSR-6);
- Predisposal Management of Radioactive Waste (GSR Part 5)
- Decommissioning of Facilities (GSR Part 6)
- IAEA-TECDOC-1449, Radiological Aspects of Non-fixed Contamination of Packages and Conveyances
- RASSC Electronic Working Group advise
Overview

I. INTRODUCTION
II. THE CONCEPTS
III. ROLES AND RESPONSIBILITIES
IV GENERIC EXEMPTION
V SPECIFIC EXEMPTION
VI DEVELOPMENT OF LEVELS FOR SURFACE CONTAMINATION
VII IMPLICATIONS FOR INTERNATIONAL TRADE
VIII MEASUREMENT APPROACHES

ANNEX Dosimetric Modelling of Surface Contamination of non-food commodities
ANNEX NATIONAL EXPERIENCE – Routine practice (including known and unknown origin of radioactive material)
ANNEX NATIONAL EXPERIENCE – Chernobyl accident (decades after accident)
ANNEX NATIONAL EXPERIENCE – Fukushima accident (years after accident)
## Production schedule

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<td>July 2016</td>
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<td>STEP 14:</td>
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<td>August 2022</td>
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Comments by the SSCs

• Japan – 2 comments (RASSC) and 14 (WASSC) all accepted
• IRPA – 1 comment: not relevant to DS499 (DS500 instead)
• WNA – 4 comments: 4 accepted

Total – 21 comments: 20 accepted, 1 rejected
Comments by the SSCs (cont’d)

Important accepted comments:

• “Commodity” term should be clarified.

• How will the document be implemented in a ‘harmonized’ way? Does this mean that it will be very prescriptive or with additional detailed guidance provided on its use?

• More realistic number of TM meetings should be considered.

• Small clarifications, editorial corrections
Issues raised by the CSS

• The concept of exclusion is important and needs to be addressed.

• Absolute consistency in numbers is essential, including with those in the Transport Regulations; It is demonstrated by preliminary modelling for surface radionuclide concentrations adopted in TR.

• While the documents may be developed independently, they should be merged at a later date;

• The exemption value of 1 Bq/g for uranium and thorium appears in many IAEA standards – there are major implications if it is changed; NO change of numbers will be done according to RASSC meeting (June, 2016)
Action

- Clearance for submission of the DPP to the CSS
Thank you