



**WORKING PAPER**

**DANGEROUS GOODS PANEL (DGP)  
MEETING OF THE WORKING GROUP OF THE WHOLE**

**Montréal, 15 to 19 April 2013**

**Agenda Item 2 : Development of recommendations for amendments to the *Technical Instructions for the Safe Transport of Dangerous Goods by Air* (Doc 9284) for incorporation in the 2015-2016 Edition**

**TRANSPORT OF EMPTY TYPE B (U) OR TYPE B(M) PACKAGES**

(Presented by Teun Muller)

**SUMMARY**

To ensure that the transport of empty type B(U) or Type B(M) packages of radioactive materials can be guaranteed without delay, it is proposed to add some amendments and clarifications to the Technical Instructions in order to help shippers and acceptance staff.

Action by the DGP-WG is in paragraph 2.

**1. INTRODUCTION**

1.1 Empty Type B(U) or Type B(M) containers must very often be returned by air. Regularly shipments of these containers are refused by airlines, integrators and/or by their handling agent, as these containers can be shipped under different conditions which lead to confusion.

1.2 Although the regulations for the transport of radioactive materials foresee that empty packages which have contained radioactive material may be classified as “excepted packages” as per Part 2;7.2.4.1.1, unfortunately these containers can very rarely be transported as UN 2908 — **Radioactive material, excepted package — empty packaging** because the radiation level at the external surface regularly exceeds 5  $\mu\text{Sv/h}$  due to the presence of depleted uranium in the shielding material. This means that the conditions of Part 2;7.2.4.1.1.2 are not complied with (radiation level must not exceed 5  $\mu\text{Sv/h}$  at any point on its external surface) and the empty containers cannot be transported as UN 2908.

1.3 As a consequence, these packages must be transported fully regulated and may be classified either as low specific material (LSA-I) due to the presence of depleted uranium as specified in Part 2;7.2.3.1.2 a) ii) or still as Type B(U) or Type B(M) package as specified in Part 2;7.4.6.2. Both solutions result regularly in a refusal of shipment. In cases where the shipment is declared as LSA-I, the

type B(U) container may be declared as an Industrial package Type IP-1 in which case the shipment no longer requires a “Type B package design approval certificate”, but the package must bear the appropriate markings for industrial packages and the Type B(U) or Type B(M) specification markings as applicable should be obliterated.

1.4 In cases where the shipper declares the packages as a Type B (U) or Type B(M), the radionuclide of the radionuclide contained in the shielding material and its chemical and physical form will be declared on the dangerous goods transport document e.g. “U-dep, solid, metal oxide” . This may lead to confusion as the Type B package design certificate indicates the radionuclides authorized for the package design.

1.5 Although it is recognized that the transport of these empty Type B(U) or Type B(M) packages does not pose any safety issue and that they should be allowed to be transported as excepted packages, we realize that this problem needs to be discussed and solved at the IAEA. Realizing that this may require a long period, this working paper is also proposing to add some clarifications and amendments to the Technical Instructions which may solve the problems in the interim period.

## 2. ACTION BY THE DGP-WG

2.1 The DGP-WG is invited to consider the clarifications and amendments to the provisions for radioactive materials shown in the appendix to this working paper.

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## APPENDIX

### PROPOSED AMENDMENT TO THE TECHNICAL INSTRUCTIONS

#### Proposal 1

Add the following note to Part 2;7.2.4.1.1.5:

#### Part 2

### CLASSIFICATION OF DANGEROUS GOODS

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#### Chapter 7

### CLASS 7 — RADIOACTIVE MATERIAL

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#### 7.2 CLASSIFICATION

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#### 7.2.4 Classification of packages

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7.2.4.1.1.5 An empty packaging which had previously contained radioactive material may be classified under UN 2908 — **Radioactive material, excepted package — empty packaging** only if:

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- d) any labels which may have been displayed on it in conformity with 5;3.2.6 are no longer visible.

Note.— The external radiation level at the surface of empty Type B(U) or Type B(M) packages may exceed 5  $\mu$ Sv/h due to the presence of depleted uranium in the shielding material. Such empty packages cannot be transported as UN 2908 — **Radioactive material, excepted package — empty packaging** as they do not meet the conditions specified in 7.2.4.1.1.2. These packages remain subject to all applicable parts of these Instructions and may be classified either as low specific material (LSA-I) due to the presence of depleted uranium as specified in 7.2.3.1.2 a) ii) or as Type B(U) or Type B(M) package as specified in 7.4.6.2.

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Add the following note to Part 5;2.4.5.1 c):

## Part 5

### SHIPPER'S RESPONSIBILITIES

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#### 2.4.5 Special marking requirements for radioactive material

##### 2.4.5.1

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- c) each package which conforms to a design approved by the competent authority must be legibly and durably marked on the outside of the packaging with:

Note.— Empty Type B(U) or Type B(M) packages as specified in the note to 2;7.2.4.1.1.5 shipped as industrial packages Type IP-1 must bear the appropriate specification marking for a Type IP-1 in which case the appropriate specification markings specified in 2.4.5.1 c) must be obliterated.

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Add the following note to Part 5;4.1.5.7.1 b):

## Chapter 4

### DOCUMENTATION

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#### 4.1 DANGEROUS GOODS TRANSPORT INFORMATION

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##### 4.1.5 Information required in addition to the dangerous goods description

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##### 4.1.5.7 Radioactive material

4.1.5.7.1 The following information must be included for each consignment of Class 7 material, as applicable, in the order given:

- a) The name or symbol of each radionuclide or, for mixtures of radionuclides, an appropriate general description or a list of the most restrictive nuclides;
- b) A description of the physical and chemical form of the material, or a notation that the material is special form radioactive material or low dispersible radioactive material. A generic chemical description is acceptable for chemical form;

Note.— For empty Type B(U) or Type B(M) packages as specified in the note to 2;7.2.4.1.1.5, the name or symbol of the radionuclide of the shielding material followed by the physical and chemical form must be included (e.g. U-dep., solid, metal oxide) in which case the indicated radionuclide may differ from the radionuclide(s) authorized in the package design certificate.

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**Proposal 2**

1. Submit a working paper for the IAEA explaining the problem and proposing an amendment to the Safety Standards Series TS-R-1 in order to authorize empty Type B(U) or Type B(M) packages, for which the radiation level at the external surface exceeds  $5 \mu\text{Sv/h}$  due to the presence of depleted uranium in the shielding material, to be shipped as UN 2908 — **Radioactive material, excepted package — empty packaging.**

2. It is understood that certain criteria will need to be discussed and accepted in order to ensure that only packages which do not pose a safety risk can be shipped as UN 2908, e.g. empty packages for which the radiation level at the external surface exceeds  $5 \mu\text{Sv/h}$  but for which the transport index is “0”

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