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**Committee of Experts on the Transport of Dangerous Goods  
and on the Globally Harmonized System of Classification  
and Labelling of Chemicals****Sub-Committee of Experts on the Transport of Dangerous Goods****Forty-second session**

Geneva, 3 – 11 December 2012

Item 4 of the provisional agenda

**Cooperation with the International****Atomic Energy Agency (IAEA)****Harmonization with the IAEA Regulation for the Safe  
Transport of Radioactive Material****Note by the secretariat<sup>1</sup>**

1. This document contains a draft list of amendments to the seventeenth revised edition of the Recommendations on the Transport of Dangerous Goods, Model Regulations, prepared by the secretariat after consultation of the IAEA secretariat, for alignment with the 2012 Edition of the IAEA Regulations for the Safe Transport of Radioactive Material (SSR-6) (not yet published).
2. The draft amendments take account of the comments made during the forty-first session and those of the IAEA Transport Safety Standards Committee (TRANSSC) at its twenty-fourth (Vienna, 16–20 July 2012). The uranium hexafluoride (UF<sub>6</sub>) issue (excepted packages) is addressed in a separate document (ST/SG/AC.10/C.3/2012/101).
3. Some editorial changes to the IAEA Regulations have not been reflected when they were likely to bring editorial inconsistencies in the Model Regulations. Furthermore, no attempt has been made to modify the current structure of the Model Regulations.
4. Paragraph numbers between square brackets refer to paragraphs in the 2012 Edition of the IAEA Regulations.
5. The draft amendments are also shown in track-changes mode in informal document INF.4.

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<sup>1</sup> In accordance with the programme of work of the Sub-Committee for 2011-2012 approved by the Committee at its fifth session (refer to ST/SG/AC.10/C.3/76, para. 116 and ST/SG/AC.10/38, para. 16).

## Chapter 1.1

- 1.1.1.6 In (b) add “, and that does not meet the definitions and criteria of classes, other than Class 7, or divisions, as defined in Part 2.” after “Table 2.7.2.4.1.2”.

[IAEA: 580 and 581]

## Chapter 1.2

- 1.2.1 Amend the definitions hereafter as follows:

Design: In the first sentence, insert “fissile material excepted under 2.7.2.3.5 (f),” after “the description of”.

[IAEA: 220]

Exclusive use: Replace “and unloading is carried” with “and unloading and shipment are carried” and insert “, where so required by these Regulations;” after “consignee”.

[IAEA: 221]

Freight container: Replace the last paragraph with the following:

“In addition:

*Small freight container* means a freight container that has an internal volume of not more than 3 m<sup>3</sup>.

*Large freight container* means a freight container that has an internal volume of more than 3 m<sup>3</sup>.”

[IAEA: 223]

Radiation level: Amend the end of the definition to read: “millisieverts per hour or microsieverts per hour;”.

[IAEA: 233]

Insert the following new definition, in alphabetical order:

“*Management system* means a set of interrelated or interacting elements (system) for establishing policies and objectives and enabling the objectives to be achieved in an efficient and effective manner.”.

[IAEA: 228]

## Chapter 1.5

- 1.5.1.2 In the second sentence of the last paragraph replace “imposing requirements” with “imposing conditions”.

- 1.5.1.4 Amend the first sentence to read: “These Regulations do not apply to any of the following:”

Insert a new sub-paragraph (d) to read as follows and rename current sub-paragraphs (e) to (f) accordingly:

- “(d) Radioactive material in or on a person who is to be transported for medical treatment because the person has been subject to accidental or deliberate intake of radioactive material or to contamination;”.

Amend sub-paragraph (f) (former (e)) to read as follows:

- “(f) Natural material and ores containing naturally occurring radionuclides which may have been processed, provided the activity concentration of the material does not exceed 10 times the values specified in Table 2.7.2.2.1, or calculated in accordance with 2.7.2.2.2 (a) and 2.7.2.2.3 to 2.7.2.2.6. For natural materials and ores containing naturally occurring radionuclides that are not in secular equilibrium the calculation of the activity concentration shall be performed in accordance with 2.7.2.2.4;”.

[IAEA: 107]

- 1.5.1.5.1 Amend (a), (b) and (c) to read as follows:

- “(a) The applicable provisions specified in 5.1.1.2, 5.1.3.2, 5.1.5.2.2, 5.1.5.4, 5.2.1.7, 7.1.8.3.1, 7.1.8.5.1 to 7.1.8.5.4 and 7.1.8.6.1;  
(b) The requirements for excepted packages specified in 6.4.4; and  
(c) The requirements of 1.1.1.6 if transported by post.”.

[IAEA: 515]

- 1.5.1.5.2 Insert the text of former 1.5.1.5.1 (c) as the a new second sentence to read as follows:

“If the excepted package contains fissile material, one of the fissile exceptions provided by 2.7.2.3.5 shall apply and the requirement of 6.4.7.2 shall be met.”.

[IAEA: 515]

- 1.5.2.2 In the second sentence, delete the comma after “persons exposed” and replace “doses to individuals be subject” with “dose to individuals are subject”.

[IAEA: 301]

- 1.5.2.4 Amend the end of the introductory sentence to read “that the effective dose either:” and insert “or” at the end of sub-paragraph (a).

[IAEA: 303]

- 1.5.3 Amend to read as follows:

### **“1.5.3 Management system**

1.5.3.1 A management system based on international, national or other standards acceptable to the competent authority shall be established and implemented for all activities within the scope of the Regulations, as identified in 1.5.1.3, to ensure compliance with the relevant provisions of these Regulations. Certification that the design specification has been fully implemented shall be available to the competent authority. The manufacturer, consignor or user shall be prepared:

- (a) To provide facilities for inspection during manufacture and use; and

- (b) To demonstrate compliance with these Regulations to the competent authority.

Where competent authority approval is required, such approval shall take into account and be contingent upon the adequacy of the management system.”.

[IAEA: 306]

- 1.5.6.1 In the introductory sentence, delete “a” before “non-compliance”.

In (a) amend the introductory sentence to read: “The consignor, consignee, carrier and any organization involved during transport, who may be affected, as appropriate, shall be informed of the non-compliance:”.

In (b) (iv), delete “and” at the end of the sentence.

[IAEA: 309]

## Chapter 2.7

- 2.7.1.3 Amend the definitions hereafter as follows:

Fissile nuclides: Amend the end of the second introductory sentence to read: “of fissile material are the following:”.

In (a), delete “and”.

Insert the following new sub-paragraphs and text:

“(c) material with fissile nuclides less than a total of 0.25 g;

(d) any combination of (a), (b) and/or (c).

These exclusions are only valid if there is no other material with fissile nuclides in the package or in the consignment if shipped unpackaged.”.

[IAEA: 222]

Surface contaminated object At the end, replace “surfaces” with “surface”.

[IAEA: 241]

- 2.7.2.1.1 Amend to read as follows: “Radioactive material shall be assigned to one of the UN numbers specified in Table 2.7.2.1.1, in accordance with 2.7.2.4.2 to 2.7.2.5, taking into account material characteristic determined in 2.7.2.3.”.

[IAEA: 401]

- Table 2.7.2.1.1 Amend the heading of the table to read:

<i>UN Nos. Proper shipping name and description<sup>a</sup></i>	
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Add the following at the end of the list under the heading “Excepted packages”:

[“UN 3507 RADIOACTIVE MATERIAL, EXCEPTED PACKAGE - URANIUM HEXAFLUORIDE, less than 0.1 kg per package, non-fissile or fissile-excepted<sup>b</sup>”]

Insert a reference to a new note “b” after “fissile-excepted” each time this text appears in the description of a UN number in the table (applies to UN Nos. 2912, 3321, 3322, 2913, 2915, 3332, 2916, 2917, 3323, 2919 and 2978).

Add the following at the end of the list under the heading “Excepted packages”:

[“UN 3507 RADIOACTIVE MATERIAL, EXCEPTED PACKAGE - URANIUM HEXAFLUORIDE, less than 0.1 kg per package, non-fissile or fissile-excepted<sup>b</sup>”] or [**NOTE:** *see also under “Excepted packages”*].

Add the following notes “a” and “b” after the table:

<sup>a</sup> The proper shipping name is found on the column “proper shipping name and description” and is restricted to that part shown in capital letters. In the cases of UN Nos. 2909, 2911, 2913 and 3326, where alternative proper shipping names are separated by the word “or” only the relevant proper shipping name shall be used;

<sup>b</sup> The term “fissile-excepted” refers only to material excepted under 2.7.2.3.5 and 6.4.11.2”.

[IAEA: Table 1]

2.7.2.2.1 In (b), insert “limits” after “concentration”.

[IAEA: 402]

Table 2.7.2.2.1 In the heading of column 4 insert “limit” after “concentration”.

In (a) after the table, in the introductory sentence, replace “from daughter radionuclides” with “from their progeny”.

2.7.2.2.2 Amend to read as follows:

“2.7.2.2.2 For individual radionuclides:

- (a) which are not listed in Table 2.7.2.2.1 the determination of the basic radionuclide values referred to in 2.7.2.2.1 shall require multilateral approval. For these radionuclides, activity concentration limits for exempt material and activity limits for exempt consignments shall be calculated in accordance with the principles established in the International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources, Safety Series No.115, IAEA, Vienna (1996)<sup>2</sup>. It is permissible to use an A<sub>2</sub> value calculated using a dose coefficient for the appropriate lung absorption type as recommended by the International Commission on Radiological Protection, if the chemical forms of each radionuclide under both normal and accident conditions of transport are taken into consideration. Alternatively, the radionuclide values in Table 2.7.2.2.2 may be used without obtaining competent authority approval;
- (b) In instruments or articles in which the radioactive material is enclosed or is included as a component part of the instrument or other manufactured article and which meet 2.7.2.4.1.3 (c), alternative basic radionuclide values to those in Table 2.7.2.2.1 for the activity limit for

<sup>2</sup> *Note by the secretariat: Reference to be checked.*

an exempt consignment are permitted and shall require multilateral approval. Such alternative activity limits for an exempt consignment shall be calculated in accordance with the principles set out in the International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources, Safety Series No.115, IAEA, Vienna (1996).

[IAEA: 403]

Table 2.7.2.2.2 In the heading of the fourth column, insert “limit” after “concentration”.

[IAEA: Table 3]

2.7.2.2.4 In the introductory sentence delete “the determination of” and in the legend for X(i) and X<sub>m</sub> replace “concentration” with “concentration limit”.

[IAEA: 405]

2.7.2.3.1.2 In (a) (i), delete “which are intended to be processed for the use of these radionuclides”.

Amend (a) (iii) to read: “Radioactive material for which the A<sub>2</sub> value is unlimited. Fissile material may be included only if excepted under 2.7.2.3.5.”.

In (a) (iv), replace “, excluding fissile material not excepted under 2.7.2.3.5” with “. Fissile material may be included only if excepted under 2.7.2.3.5.”.

In (b) (i), delete “or”.

In (c), introductory sentence, replace “meeting the requirements” with “that meet the requirements”.

In (c) (i) replace “bitumen, ceramic, etc” with “bitumen and ceramic”.

[IAEA: 409]

2.7.2.3.2 Delete “and” at the end of sub-paragraphs (a) (i) and (ii), and (b) (i) and (ii).

[IAEA: 413]

2.7.2.3.3.6 Amend (a) to read as follows:

“(a) The tests prescribed in 2.7.2.3.3.5 (a) and (b) provided that the specimens are alternatively subjected to the impact test prescribed in ISO 2919: 1999: “Radiation Protection - Sealed Radioactive Sources- General requirements and classification”:

(i) The Class 4 impact test if the mass of the special form radioactive material is less than 200 g;

(ii) The Class 5 impact test if the mass of the special form radioactive material is more than 200 g but less than 500 g”.

[IAEA: 709]

2.7.2.3.3.8 In (b), replace “which are acceptable” with “provided that they are acceptable”.

[IAEA: 711]

## 2.7.2.3.5 Amend the first paragraph to read as follows:

“Fissile material and packages containing fissile material shall be classified under the relevant entry as “FISSILE” in accordance with Table 2.7.2.1.1 unless excepted by one of the provisions of sub-paragraphs (a) to (f) below and transported subject to the requirements of 7.1.8.4.3. All provisions apply only to material in packages that meets the requirements of 6.4.7.2 unless unpackaged material is specifically allowed in the provision.”.

Delete current sub-paragraphs (a) and (d).

Current (b) and (c) become new (a) and (b) respectively.

Insert the following new sub-paragraphs (c) to (f):

- (c) Uranium with a maximum uranium enrichment of 5% by mass uranium-235 provided:
  - (i) There is no more than 3.5 g of uranium-235 per package;
  - (ii) The total plutonium and uranium-233 content does not exceed 1% of the mass of uranium-235 per package;
  - (iii) Transport of the package is subject to the consignment limit provided in 7.1.8.4.3 (c).
- (d) Fissile nuclides with a total mass not greater than 2.0 g per package provided the package is transported subject to the consignment limit provided in 7.1.8.4.3 (d);
- (e) Fissile nuclides with a total mass not greater than 45 g either packaged or unpackaged subject to limits provided in 7.1.8.4.3 (e);
- (f) A fissile material that meets the requirements of 7.1.8.4.3 (b), 2.7.2.3.6 and 5.1.5.2.1.

[IAEA: 417]

## Table 2.7.2.3.5 Delete.

## 2.7.2.3.6 Insert a new paragraph to read as follows:

“2.7.2.3.6 A fissile material excepted from classification as FISSILE under 2.7.2.3.5 (f) shall be subcritical without the need for accumulation control under the following conditions:

- (a) The conditions of 6.4.11.1 (a);
- (b) The conditions consistent with the assessment provisions stated in 6.4.11.12 (b) and 6.4.11.13 (b) for packages;
- (c) The conditions specified in 6.4.11.11 (a), if transported by air.”

[IAEA: 606]

## 2.7.2.4.1.1 Amend to read as follows:

“2.7.2.4.1.1 A package may be classified as an excepted package if it meets one of the following conditions:

- (a) It is an empty package having contained radioactive material;
- (b) It contains instruments or articles not exceeding the activity limits specified in Table 2.7.2.4.1.2;

- (c) It contains articles manufactured of natural uranium, depleted uranium or natural thorium;
- (d) It contains radioactive material not exceeding the activity limits specified in Table 2.7.2.4.1.2; or
- (e) It contains less than 0.1 kg of uranium hexafluoride not exceeding the activity limits specified in column 4 of Table 2.7.2.4.1.2.”.

[IAEA: 422]

2.7.2.4.1.3 In the introductory sentence replace “only if” with “provided that”.

In (b), replace “except” with “on its external surface except for the following:”

In (b) (ii):

- Replace “according to 1.5.1.4 (d)” with “in accordance with 1.5.1.4 (e)”;
- Replace “an internal surface” with “its internal surface”; and;
- Insert “a” before “warning”.

Insert a new sub-paragraph (iii) under (b) to read as follows:

“(iii) Other instruments or articles too small to bear the marking “RADIOACTIVE”, provided that they are transported in a package that bears the marking “RADIOACTIVE” on its internal surface in such a manner that a warning of the presence of radioactive material is visible on opening the package.”.

[IAEA: 423]

2.7.2.4.1.4 Amend (b) to read as follows:

“(b) The package bears the marking “RADIOACTIVE” on either:

- (i) An internal surface in such a manner that a warning of the presence of radioactive material is visible on opening the package; or
- (ii) The outside of the package, where it is impractical to mark an internal surface.”.

[IAEA: 424]

2.7.2.4.1.5 Insert a new paragraph to read as follows:

[“2.7.2.4.1.5 Uranium hexafluoride not exceeding the limits specified in column 4 of Table 2.7.2.4.1.2 may be classified under UN 3507 RADIOACTIVE MATERIAL, EXCEPTED PACKAGE - URANIUM HEXAFLUORIDE, less than 0.1 kg per package, non-fissile or fissile-excepted provided that:

- (a) The mass of uranium hexafluoride in the package is less than 0.1 kg.
- (b) The conditions of 2.7.2.4.5.1 and 2.7.2.4.1.4 (a) and (b) are met.”].

Current 2.7.2.4.1.5 becomes new 2.7.2.4.1.7.

[IAEA: 425]



- 2.7.2.4.1.6 Replace “only if” with “provided that”.  
[IAEA: 426]
- 2.7.2.4.1.7 (former 2.7.2.4.1.5) In the introductory sentence replace “only if” with “provided that”.  
[IAEA: 427]
- 2.7.2.4.4 In the sentence preceding sub-paragraph (a), replace “activities greater than the following:” with “activities greater than either of the following:”.  
In (a), delete “or”.  
In the legend for C(j), delete “and”.  
[IAEA: 428, 429, 430]
- 2.7.2.4.5 Amend to read as follows:  
“Uranium hexafluoride shall be assigned to one of the following UN Nos. only:  
(a) UN 2977, RADIOACTIVE MATERIAL, URANIUM HEXAFLUORIDE, FISSIONABLE;  
(b) UN 2978, RADIOACTIVE MATERIAL, URANIUM HEXAFLUORIDE, non-fissionable or fissionable-excepted;  
[(c) UN 3507, RADIOACTIVE MATERIAL, EXCEPTED PACKAGE – URANIUM HEXAFLUORIDE, less than 0.1 kg per package, non-fissionable or fissionable-excepted.].  
[IAEA: 419]
- 2.7.2.4.5.1 Amend to read as follows:  
“2.7.2.4.5.1 The contents of a package containing uranium hexafluoride shall comply with the following requirements:  
(a) The mass of uranium hexafluoride shall not be different from that allowed for the package design;  
(b) The mass of uranium hexafluoride shall not be greater than a value that would lead to an ullage of less than 5% at the maximum temperature of the package as specified for the plant systems where the package might be used;  
(c) The uranium hexafluoride shall be in solid form and the internal pressure shall not be above atmospheric pressure when presented for transport.”.  
[IAEA: 420]
- 2.7.2.4.6.1 Replace “competent authority approval certificate” with “competent authority certificate of approval”.  
[IAEA: 431]
- 2.7.2.4.6.2 Amend to read: “The contents of a Type B(U), Type B(M) or Type C package shall be as specified in the certificate of approval”.  
[IAEA: 432]

2.7.2.4.6.3 and 2.7.2.4.6.4 Delete.

[IAEA: 432, 434]

## Chapter 4.1

4.1.9.1.3 Delete “, other than an excepted package,”.

[IAEA: 504]

4.1.9.1.6 Amend the introductory sentence to read as follows:

“Before a packaging is first used to transport radioactive material, it shall be confirmed that it has been manufactured in conformity with the design specifications to ensure compliance with the relevant provisions of these Regulations and any applicable certificate of approval. The following requirements shall also be fulfilled, if applicable:”.

In (a), replace “package” with “packaging”.

In (b) amend the beginning of the sentence to read as follows: “For each packaging intended for use as a Type B(U), Type B(M) or Type C package and for each packaging intended to contain fissile material...”.

Amend (c) to read as follows:

“(c) For each packaging intended to contain fissile material, it shall be ensured that the effectiveness of the criticality safety features is within the limits applicable to or specified for the design and in particular where, in order to comply with the requirements of 6.4.11.1 neutron poisons are specifically included, checks shall be performed to confirm the presence and distribution of those neutron poisons.”.

[IAEA: 501]

4.1.9.1.7 Insert a new paragraph to read as follows:

“4.1.9.1.7 Before each shipment of any package, it shall be ensured that the package contains neither:

- (a) Radionuclides different from those specified for the package design; nor
- (b) Contents in a form, or physical or chemical state different from those specified for the package design.”

Current paragraphs 4.1.9.1.7 to 4.1.9.1.11 become new paragraphs 4.1.9.1.8 to 4.1.9.1.12.

[IAEA: 502]

4.1.9.1.8 (former 4.1.9.1.7) Amend to read as follows:

“4.1.9.1.8 Before each shipment of any package, it shall be ensured that all the requirements specified in the relevant provisions of these Regulations and in the applicable certificates of approval have been fulfilled. The following requirements shall also be fulfilled, if applicable:

- (a) It shall be ensured that lifting attachments which do not meet the requirements of 6.4.2.2 have been removed or otherwise rendered

incapable of being used for lifting the package, in accordance with 6.4.2.3;

- (b) Each Type B(U), Type B(M) and Type C package shall be held until equilibrium conditions have been approached closely enough to demonstrate compliance with the requirements for temperature and pressure unless an exemption from these requirements has received unilateral approval;
- (c) For each Type B(U), Type B(M) and Type C package, it shall be ensured by inspection and/or appropriate tests that all closures, valves and other openings of the containment system through which the radioactive contents might escape are properly closed and, where appropriate, sealed in the manner for which the demonstrations of compliance with the requirements of 6.4.8.8 and 6.4.10.3 were made.
- (d) For packages containing fissile material the measurement specified in 6.4.11.5 (b) and the tests to demonstrate closure of each package as specified in 6.4.11.8 shall be performed.”.

[IAEA: 503]

4.1.9.2.2 Amend to read as follows:

“For LSA material and SCO which are or contain fissile material, which is not excepted under 2.7.2.3.5, the applicable requirements of 7.1.8.4.1 and 7.1.8.4.2 shall be met.”.

[IAEA: 518]

4.1.9.2.3 Insert a new paragraph 4.1.9.2.3 to read as follows:

“4.1.9.2.3 For LSA material and SCO which are or contain fissile material, the applicable requirements of 6.4.11.1 shall be met.”.

Current paragraphs 4.1.9.2.3 and 4.1.9.2.4 become new paragraphs 4.1.9.2.4 and 4.1.9.2.5 respectively.

[IAEA: 519]

4.1.9.2.4 (former 4.1.9.2.3) In (b), delete “and” at the end.

Add a new sub-paragraph (d) to read as follows:

“(d) Unpackaged fissile material shall meet the requirements of 2.7.2.3.5 (e)”.

[IAEA: 520]

4.1.9.2.5 (former 4.1.9.2.4) Replace “4.1.9.2.3” with “4.1.9.2.4” and “Table 4.1.9.2.4” with “Table 4.1.9.2.5” (twice).

[IAEA: 521]

Table 4.1.9.2.5 In note “a” under the table replace “4.1.9.2.3” with “4.1.9.2.4”.

4.1.9.3 Amend to read as follows: “The contents of packages containing fissile material shall be as specified for the package design either directly in these Regulations or in the certificate of approval.”.

[IAEA: 418]

## Chapter 5.1

- 5.1.3.2 Replace “Packagings, including IBCs, and tanks” with “Freight containers, tanks, IBCs, as well as other packagings and overpacks.”.  
[IAEA: 505]
- 5.1.5.1.2 In sub-paragraph (d) replace “according to” with “in accordance with”.  
Add the following note at the end of the paragraph:  
*“NOTE: Multilateral approval may also be required prior to shipment for the determination of the basic radionuclide values or alternative activity limits for an exempt consignment of instruments or articles (see 2.7.2.2.2 (a) and (b)).”.*
- 5.1.5.1.4 (c) Replace “for shipment approval” with “for approval of shipment (see 6.4.23.2)”.  
[IAEA: 560]
- 5.1.5.2.1 In (a), insert a new sub-paragraph (iii) to read as follows:  
“(iii) Fissile material excepted under 2.7.2.3.5 (f)”.  
Consequently, current sub-paragraphs (iii) to (vi) become new (iv) to (vii).  
In (v) (former (iv)) delete “all” and “replace “6.4.11.2” with “2.7.2.3.5, 6.4.11.2 or 6.4.11.3”.”.  
Insert a new (d) to read as follows:  
“(d) Alternative activity limits for an exempt consignment of instruments or articles (see 2.7.2.2.2 (b));”.  
Add the following text at the end of the existing first sentence following sub-paragraphs (a) to (d): “For certificates of approval of alternative activity limits for an exempt consignment of instruments or articles, the competent authority shall attribute to those certificates an identification mark.”.  
Amend the second paragraph under sub-paragraphs (a) to (d) to read as follows:  
“The certificates of approval for the package design and the shipment may be combined into a single certificate.”.  
[IAEA 802, 818]
- 5.1.5.2.3 In the first sentence, amend the beginning of the sentence to read: “For package designs where it is not required that a competent authority issue a certificate of approval, the consignor...”.  
[IAEA: 801]
- 5.1.5.3.4 In the first sentence, replace “and overpacks” with “, overpacks and freight containers”.  
In (a), replace (twice) “or overpack” with “, overpack or freight container”.  
In (e), insert “or freight container” after “overpack”.  
[IAEA: 529]

- Table 5.1.5.3.4      Replace “and overpacks” with “, overpacks and freight containers”.
- In note “b” to the table insert at end: “except for freight containers (see Table 7.1.8.3.3)”.
- 5.1.5.3.5      Replace “design or shipment approval” with “approval of design or shipment”.
- [IAEA: 530]*
- 5.1.5.4.2      Amend to read as follows:
- “5.1.5.4.2      The documentation requirements of Chapter 5.4 do not apply to excepted packages of radioactive material, except that:
- (a)      The UN number preceded by the letters “UN” and the name and address of the consignor and the consignee and, if relevant, the identification mark for each competent authority certificate of approval (see 5.4.1.5.7.1 (g)) shall be shown on a transport document such as a bill of lading, air waybill or other similar document complying with the requirements of 5.4.1.2.1 to 5.4.1.2.3 [5.4.1.2.4];
- (b)      The requirements of 5.4.1.6.2 and, if relevant, those of 5.4.1.5.7.1 (g), 5.4.1.5.7.3 and 5.4.1.5.7.4 shall apply;
- (c)      The requirements of 5.4.2 and 5.4.4 shall apply.”.
- 5.1.5.4.3      Insert a new paragraph to read as follows:
- “5.1.5.4.3      The requirements of 5.2.1.5.8 and 5.2.2.1.12.5 shall apply if relevant.”.

## Chapter 5.2

- 5.2.1.5.1      Insert the following sentence at the end: “Each overpack shall be legibly and durably marked on the outside of the overpack with an identification of either the consignor or consignee, or both unless these markings of all packages within the overpack are clearly visible.”.
- [IAEA: 531]*
- 5.2.1.5.5      Amend the introductory sentence to read as follows:
- “Each package which conforms to a design approved under one or more of paragraphs 5.1.5.2.1, 6.4.22.1 to 6.4.22.4, 6.4.23.4 to 6.4.23.7 and 6.4.24.2 shall be legibly and durably marked on the outside of the packaging with the following information:”.
- Amend (c) to read as follows:
- “(c)      “TYPE B(U)”, “TYPE B(M)” or “TYPE C”, in the case of a Type B(U), Type B(M) or Type C package design”.
- Delete (d).
- [IAEA: 535]*
- 5.2.1.5.7      Replace “4.1.9.2.3” with “4.1.9.2.4”.
- [IAEA: 537]*

- 5.2.1.5.8 Replace “competent authority design or shipment approval” with “competent authority approval of design or shipment”.

*[IAEA: 530]*

- 5.2.2.1.12.1 Amend the first and second sentences to read as follows:

“Except when enlarged labels are used in accordance with 5.3.1.1.5.1, each package, overpack and freight container containing radioactive material shall bear the labels conforming to the applicable models Nos. 7A, 7B or 7C, according to the appropriate category. Labels shall be affixed to two opposite sides on the outside of the package or overpack or on the outside of all four sides of a freight container or tank.”.

In the fourth sentence:

- Insert “the provisions of” before “6.4.11.2”;
- Replace “which conform to model” with “conforming to model”;
- Replace the last phrase of the fourth sentence with the following: “such labels, where applicable shall be affixed adjacent to the labels conforming to the applicable model Nos. 7A, 7B or 7C.”.

*[IAEA: 538, 539]*

- 5.2.2.1.12.2 In the introductory sentence, replace “models numbers 7A, 7B and 7C” with “the applicable model No. 7A, 7B or 7C”.

In (b), amend the last sentence to read as follows:

“For fissile material, the total mass of fissile nuclides in units of grams (g), or multiples thereof, may be used in place of activity”.

*[IAEA: 540]*

- 5.2.2.1.12.3 Amend to read as follows:

“Each label conforming to the model No. 7E shall be completed with the criticality safety index (CSI) as stated in the certificate of approval applicable in the countries through or into which the consignment is transported and issued by the competent authority or as specified in 6.4.11.2 or 6.4.11.3.”.

*[IAEA: 541]*

- 5.2.2.1.12.4 Amend to read as follows:

“For overpacks and freight containers, the label conforming to model No. 7E shall bear the sum of the criticality safety indexes of all the packages contained therein”.

*[IAEA: 542]*

- 5.2.2.1.12.5 Replace “competent authority design or shipment approval” with “competent authority approval of design or shipment”.

*[IAEA: 530]*

## Chapter 5.3

- 5.3.1.1.5.1 Amend the last sentence to read as follows:

“Instead of using both labels and placards, it is permitted as an alternative to use enlarged labels only, as shown in label models Nos. 7A, 7B and 7C, except having the minimum size shown in Figure 5.3.1.”.

[IAEA: 543]

- 5.3.1.1.5.2 In the introductory sentence replace “No.” with “Nos.”, “or 7E” with “and 7E” and “(Model 7D)” with “(model No.7D)”.

## Chapter 5.4

- 5.4.1.5.7.1 Amend (f) to read as follows:

“(f) For fissile material:

- (i) Shipped under one exception of 2.7.2.3.5 (a) to (f), reference to that paragraph;
- (ii) Shipped under 2.7.2.3.5 (c) to (e), the total mass of fissile nuclides;
- (iii) Contained in a package for which one of 6.4.11.2 (a) to (c) or 6.4.11.3 is applied, reference to that paragraph;
- (iv) The criticality safety index, where applicable.”.

In (g), replace “competent authority approval certificate” with “competent authority certificate of approval” and insert “fissile material excepted under 2.7.2.3.5 (f),” before “special arrangement”.

[IAEA: 546 (e) to (n)]

- 5.4.1.5.7.3 Replace “competent authorities design or shipment approval” with “competent authority approval of design or shipment”.

[IAEA: 530]

## Chapter 6.4

- 6.4.2.11 Insert a new paragraph 6.4.2.11 to read as follows:

“6.4.2.11 A package shall be so designed that it provides sufficient shielding to ensure that, under routine conditions of transport and with the maximum radioactive contents that the package is designed to contain, the radiation level at any point on the external surface of the package would not exceed the values specified in 2.7.2.4.1.2, 4.1.9.1.10 and 4.1.9.1.11, as applicable, with account taken of 7.1.8.3.3 (b) and 7.2.3.1.2.”.

Current paragraphs 6.4.2.11 and 6.4.2.12 become 6.4.2.12 and 6.4.2.13 respectively.

[IAEA: 617]

- 6.4.3.3 Replace “leakage” with “loss or dispersal of radioactive contents from the containment system,”.  
[IAEA: 621]
- 6.4.6.1 Amend the first sentence to read as follows:  
“Packages designed to contain uranium hexafluoride shall meet the requirements which pertain to the radioactive and fissile properties of the material prescribed elsewhere in these Regulations.”.  
[IAEA: 631]
- 6.4.6.2 In (a) and (c), insert at the end: “except as allowed in 6.4.6.4”.  
[IAEA: 632]
- 6.4.6.4 In the introductory sentence replace “the approval of the competent authority” with “multilateral approval” and insert “the packages are designed:” at the end, after “if”.  
In (a) and (b) delete “The packages are designed” and replace “and” with “and/or” at the end.  
In (c), delete “For packaged designed” and replace “hexafluoride, the packages” with “hexafluoride and the packages”.  
[IAEA: 634]
- 6.4.8.1 Replace “requirements of” with “requirements specified in”.
- 6.4.8.2 Amend the end of the introductory paragraph to read: “...which may cause one or more of the following:”.  
In (a) and (b), delete “or” at the end.  
[IAEA: 653]
- 6.4.8.8 In (b), replace “and the tests in” with “and either the test in.”.  
[IAEA: 659]
- 6.4.9.1 In the first sentence, replace “6.4.8.5, 6.4.8.6,” with “6.4.8.4 to 6.4.8.6”.  
In the second sentence, insert “6.4.8.4 and” after “packages specified in”.  
[IAEA: 667]
- 6.4.10.3 Place the sentence “, it would meet the following requirements”, currently in (b), before sub-paragraphs (i) and (ii), as follows:  
“ (b) The test sequences in 6.4.20.1,  
it would meet the following requirements:  
- retain sufficient shielding...[remaining of the text unchanged]  
- restrict the accumulated....[remaining of the text unchanged]  
Where mixtures.....”[remaining of the paragraph unchanged].  
[IAEA: 671]
- 6.4.11.1 In (a), insert “routine,” before “normal”.  
Amend (b)(i) to read as follows: “of 6.4.7.2 except for unpackaged material when specifically allowed by 2.7.2.3.5 (e);”.



In (b)(ii) delete “and” at the end.

Amend (b)(iii) to read as follows: “of 6.4.7.3 unless the material is excepted by 2.7.2.3.5;”.

Insert a new (iv) to read as follows:

“(iv) of 6.4.11.4 to 6.4.11.14, unless the material is excepted by 2.7.2.3.5, 6.4.11.2 or 6.4.11.3.”.

[IAEA: 673]

6.4.11.2 Amend to read as follows:

“6.4.11.2 Packages containing fissile material that meet the provisions of subparagraph (d) and one of the provisions of (a) to (c) below are excepted from the requirements of 6.4.11.4 to 6.4.11.14.

(a) Packages containing fissile material in any form provided that:

- (i) The smallest external dimension of the package is not less than 10 cm;
- (ii) The criticality safety index of the package is calculated using the following formula:

$$CSI = 50 \times 5 \times \left( \frac{\text{Mass of U-235 in package (g)}}{Z} + \frac{\text{Mass of other fissile nuclides* in package (g)}}{280} \right)$$

\* Plutonium may be of any isotopic composition provided that the amount of Pu-241 is less than that of Pu-240 in the package where the values of Z are taken from Table 6.4.11.2.

- (iii) The CSI of any package does not exceed 10;

(b) Packages containing fissile material in any form provided that:

- (i) The smallest external dimension of the package is not less than 30 cm;
- (ii) The package, after being subjected to the tests specified in 6.4.15.1 to 6.4.15.6;
  - Retains its fissile material contents;
  - Preserves the minimum overall outside dimensions of the package to at least 30 cm;
  - Prevents the entry of a 10 cm cube.
- (iii) The criticality safety index of the package is calculated using the following formula:

$$CSI = 50 \times 2 \times \left( \frac{\text{Mass of U-235 in package (g)}}{Z} + \frac{\text{Mass of other fissile nuclides* in package (g)}}{280} \right)$$

\* Plutonium may be of any isotopic composition provided that the amount of Pu-241 is less than that of Pu-240 in the package where the values of Z are taken from Table 6.4.11.2.

- (iv) The criticality safety index of any package does not exceed 10;

(c) Packages containing fissile material in any form provided that:

- (i) The smallest external dimension of the package is not less than 10 cm;
- (ii) The package, after being subjected to the tests specified in 6.4.15.1 to 6.4.15.6;
  - Retains its fissile material contents;
  - Preserves the minimum overall outside dimensions of the package to at least 10 cm;
  - Prevents the entry of a 10 cm cube.
- (iii) The CSI of the package is calculated using the following formula:

$$CSI = 50 \times 2 \times \left( \frac{\text{Mass of U-235 in package (g)}}{450} + \frac{\text{Mass of other fissile nuclides* in package (g)}}{280} \right)$$

\* Plutonium may be of any isotopic composition provided that the amount of Pu-241 is less than that of Pu-240 in the package

- (iv) The maximum mass of fissile nuclides in any package does not exceed 15 g;
- (d) The total mass of beryllium, hydrogenous material enriched in deuterium, graphite and other allotropic forms of carbon in an individual package shall not be greater than the mass of fissile nuclides in the package except where their total concentration does not exceed 1 g in any 1000 g of material. Beryllium incorporated in copper alloys up to 4% in weight of the alloy does not need to be considered.”.

[IAEA: 674]

Table 6.4.11.2 Insert a new table 6.4.11.2 to read as follows:

“Table 6.4.11.2 Values of Z for calculation of criticality safety index in accordance with 6.4.11.2

Enrichement <sup>a</sup>	Z
Uranium enriched up to 1.5%	2200
Uranium enriched up to 5 %	850
Uranium enriched up to 10 %	660
Uranium enriched up to 20 %	580
Uranium enriched up to 100 %	450

<sup>a</sup> *If a package contains uranium with varying enrichments of U-235, then the value corresponding to the highest enrichment shall be used for Z.*

6.4.11.3 Insert a new paragraph 6.4.11.3 to read as follows:

“6.4.11.3. *Packages* containing not more than 1000 g of plutonium are excepted from the application of 6.4.11.4 to 6.4.11.14 provided that:

- (a) Not more than 20% of the plutonium by mass is fissile nuclides;

- (b) The criticality safety index of the package is calculated using the following formula:

$$CSI = 50 \times 2 \times \frac{\text{mass of plutonium (g)}}{1000}$$

- (c) If uranium is present with the plutonium, the mass of uranium shall be no more than 1% of the mass of the plutonium.”.

Current paragraphs 6.4.11.3 to 6.4.11.13 become new paragraphs 6.4.11.4 to 6.4.11.14.

[IAEA: 675]

6.4.11.4 (former 6.4.11.3) Replace “6.4.11.7 to 6.4.11.12” with “6.4.11.8 to 6.4.11.13”.

[IAEA: 676]

6.4.11.5 (former 6.4.11.4) Replace “6.4.11.7 to 6.4.11.12” with “6.4.11.8 to 6.4.11.13” and insert “either” at the end of the introductory sentence.

[IAEA: 677]

6.4.11.8 (former 6.4.11.7) In the last sentence of the introductory paragraph, insert “either of” before “the following.”.

In (a) and (b) (i), replace “6.4.11.12 (b)” with “6.4.11.13 (b)”.

[IAEA: 680]

6.4.11.9 (former 6.4.11.8) In the first sentence, replace “shall be closely” with “is closely”;

In the last sentence replace “6.4.11.12 (b)” with “6.4.11.13 (b)” and “6.4.11.9 (c)” with “6.4.11.10 (c)”.

[IAEA: 681]

6.4.11.10 (former 6.4.11.9) In the introductory sentence replace “6.4.11.7 and 6.4.11.8” with “6.4.11.8 and 6.4.11.9”.

In (b), replace “6.4.11.11 (b)” with “6.4.11.12 (b)”.

In (c), replace “6.4.11.12 (b)” with “6.4.11.13 (b)”.

[IAEA: 682]

6.4.11.11 (former 6.4.11.10) In (b), replace “6.4.11.9” with “6.4.11.10” and “6.4.11.7” with “6.4.11.8”.

[IAEA: 683]

6.4.11.13 (former 6.4.11.12) In (c), replace “6.4.11.12 (b)” with “6.4.11.13 (b)”.

[IAEA: 685]

6.4.11.14 (former 6.4.11.13) Replace “6.4.11.11 and 6.4.11.12” with “6.4.11.12 and 6.4.11.13”.

[IAEA: 686]

- 6.4.13 In (c) replace “6.4.11.13” with “6.4.11.14”.  
*[IAEA: 716]*
- 6.4.15.5 In (a), amend the beginning to read: “The equivalent of 5 times...”.  
*[IAEA: 723]*
- 6.4.17.2 In the introductory paragraph, replace “6.4.11.12” with “6.4.11.13”.  
  
In (b), move the phrase “so as to suffer maximum damage” to the end of the sentence after “on the target”.  
  
In (c), Insert the following new third sentence: “The lower face of the steel plate shall have its edges and corners rounded off to a radius of not more than 6 mm.”.  
*[IAEA: 727]*
- 6.4.19.1 Replace “6.4.11.7 to 6.4.11.12” with “6.4.11.8 to 6.4.11.13”.  
*[IAEA: 731]*
- 6.4.19.2 Replace “6.4.11.12” with “6.4.11.13”.  
*[IAEA: 732]*
- 6.4.20.2 In the first sentence, insert “vertical” before “solid”. In the second sentence replace “the probe to the surface of the specimen shall be as to cause” with “the package specimen and the impact point on the package surface shall be such as to cause”.  
*[IAEA: 735]*
- 6.4.22.4 Amend to read as follows:  
  
“Each package design for fissile material which is not excepted by any of the paragraphs 2.7.2.3.5 (a) to (f), 6.4.11.2 and 6.4.11.3 shall require multilateral approval.”.  
*[IAEA: 814]*
- 6.4.22.6 Insert a new paragraph to read as follows:  
  
“6.4.22.6 The design for a fissile material excepted from FISSILE classification in accordance with 2.7.2.3.5 (f) shall require multilateral approval.”  
*[IAEA: 805]*
- 6.4.22.7 Insert a new paragraph to read as follows:  
  
“6.4.22.7 Alternative activity limits for an exempt consignment of instruments or articles in accordance with 2.7.2.2.2(b) shall require multilateral approval.”  
*[IAEA: 817]*

- 6.4.23.2 In the introductory sentence replace “shipment approval” with “approval of shipment”.
- In (c), amend the end of the paragraph to read as follows: “... referred to in the certificate of approval for the package design, if applicable, issued under 5.1.5.2.1, are to be put into effect.”.
- [IAEA: 827]
- 6.4.23.4 In (f), insert “nuclear” after “irradiated” and replace “6.4.11.4 (b)” with “6.4.11.5 (b)”.
- In (i), replace “quality assurance programme” with “management system” and “1.1.2.3.1” with “1.5.3.1”.
- [IAEA: 809]
- 6.4.23.5 [In the introductory sentence, insert “design” before “approval”].
- In (a), replace “6.4.8.5, 6.4.8.6” with “6.4.8.4 to 6.4.8.6”.
- In (d), amend the beginning of the sentence to read: “A statement of the range”.
- [IAEA: 812]
- 6.4.23.6 Replace “quality assurance programme” with “management system” and “1.1.2.3.1” with “1.5.3.1”.
- [IAEA: 807]
- 6.4.23.7 Replace “quality assurance programme” with “management system” and “1.1.2.3.1” with “1.5.3.1”.
- [IAEA: 815]
- 6.4.23.8 In (d) replace “quality assurance programme” with “management system” and “1.1.2.3.1” with “1.5.3.1”.
- [IAEA: 803]
- 6.4.23.9 Insert a new paragraph to read as follows:
- “6.4.23.9 An application for approval of design for material excepted from fissile classification shall include:
- (a) A detailed description of the material; particular reference shall be made to both physical and chemical states;
  - (b) A statement of the tests that have been done and their results, or evidence based on calculation methods to show that the material is capable of meeting the requirements specified in 2.7.2.3.6;
  - (c) A specification of the applicable management system as required in 1.5.3.1;
  - (d) A statement of specific actions to be taken prior to shipment.”.
- [IAEA: 805]

6.4.23.10 Insert a new paragraph to read as follows:

“6.4.23.10 An application for approval of alternative activity limits for an exempt consignment of instruments or articles shall include:

- (a) An identification and detailed description of the instrument or article, its intended uses and the radionuclide(s) incorporated;
- (b) The maximum activity of the radionuclide(s) in the instrument or article;
- (c) Maximum external radiation levels arising from the instrument or article;
- (d) The chemical and physical forms of the radionuclide(s) contained in the instrument or article;
- (e) Details of the construction and design of the instrument or article, particularly as related to the containment and shielding of the radionuclide in routine, normal and accident conditions of transport;
- (f) The applicable management system, including the quality testing and verification procedures to be applied to radioactive sources, components and finished products to ensure that the maximum specified activity of radioactive material or the maximum radiation levels specified for the instrument or article are not exceeded, and that the instruments or articles are constructed according to the design specifications;
- (g) The maximum number of instruments or articles expected to be shipped per consignment and annually;
- (h) Dose assessments in accordance with the principles and methodologies set out in the International Basic Safety Standards for Protection against Ionizing Radiation and for the Safety of Radiation Sources, Safety Series No.115, IAEA, Vienna (1996)<sup>3</sup>, including individual doses to transport workers and members of the public and, if appropriate, collective doses arising from routine, normal and accident conditions of transport, based on representative transport scenarios the consignments are subject to.”.

[IAEA: 817]

Current paragraphs 6.4.23.9 to 6.4.23.11 become new paragraphs 6.4.23.11 to 6.4.23.13.

6.4.23.11 (former 6.4.23.9) In the introductory sentence, replace “approval certificate” with “certificate of approval”

In (a), replace “6.4.23.10 (b)” with “6.4.23.12 (b)”

In (b):

- insert “or alternative activity limit for exempt consignment” at the end of the first sentence;

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<sup>3</sup> *Note by the secretariat: Reference to be checked.*

- amend the second sentence to read: “The identification mark of the approval of shipment shall be clearly related to the identification mark of the approval of design”;

In (c):

- In the introductory sentence, replace “types of approval certificates” with “types of certificate of approval”;
- Insert the following line between those corresponding to LD and T: “FE Fissile material complying with the requirements of 2.7.2.3.6”;
- Add the following line at the end of the list: “AL Alternative activity limits for an exempt consignment of instruments and articles”.

In (d), insert “certificates of approval of” before “package design”, delete (twice) “approval certificates” after “radioactive material”, and replace “6.24.2 to 6.24.4” with “6.4.24.2 to 6.4.24.5”.

[IAEA: 832]

6.4.23.12 (former 6.4.23.10) In the introductory sentence replace “type codes” with “identification marks”.

In (a):

- replace “6.4.23.9 (a), (b), (c) and (d)” with “6.4.23.11 (a), (b), (c) and (d)”; “design approval” with “approval of design”, and “shipment approval” with “the approval of shipment”;
- For A/132/B(M)F-96, replace “package design approval certificate” with “certificate of approval for the package design”;
- For A/132/B(M)F-96T, replace “shipment approval” with “approval of shipment”;
- For A/137/X, replace “A special arrangement approval” with “An approval of special arrangement”;
- For A/139/IF-96 and A/145/H(U)-96, replace “package design approval certificate” with “certificate of approval for the package design”.

In (b), replace “according to 6.4.23.16” with “in accordance with 6.4.23.20”.

In (c), replace (twice) “package design approval certificate” with “certificate of approval for the package design”; and “approval certificate” with “certificate of approval” in the last sentence.

[IAEA: 833]

6.4.23.13 (former 6.4.23.11) In the introductory sentence replace “approval certificate” with “certificate of approval” and in (i) replace “quality assurance programme” with “management system” and “1.1.2.3.1” with “1.5.3.1”.

[IAEA: 834]

6.4.23.14 Insert a new paragraph to read as follows:

“6.4.23.14 Each certificate of approval issued by a competent authority for material excepted from classification as FISSILE shall include the following information:

- (a) Type of certificate;
- (b) The competent authority identification mark;
- (c) The issue date and an expiry date;
- (d) List of applicable national and international regulations, including the edition of the IAEA Regulations for the Safe Transport of Radioactive Material under which the exception is approved;
- (e) A description of the excepted material;
- (f) Limiting specifications for the excepted material;
- (g) A specification of the applicable management system as required in 1.5.3.1;
- (h) Reference to information provided by the applicant relating to specific actions to be taken prior to shipment;
- (i) If deemed appropriate by the competent authority, reference to the identity of the applicant;
- (j) Signature and identification of the certifying official;
- (k) Reference to documentation that demonstrates compliance with 2.7.2.3.6”

Current paragraphs 6.4.23.12 to 6.4.23.14 become new paragraphs 6.4.23.15 to 6.4.23.17.

*[IAEA: 835]*

6.4.23.15 (former 6.4.23.12) In the introductory sentence replace “approval certificate” with “certificate of approval”.

In (j), replace “amounts” with “mass” and amend the end of the paragraph to read as follows: “...special form radioactive material, low dispersible radioactive material or fissile material excepted under 2.7.2.3.5 (f) if applicable;”.

In (k)(v), replace “6.4.11.4 (b)” with “6.4.11.5(b)”.

In (r), replace “quality assurance programme” with “management system” and “1.1.2.3.1” with “1.5.3.1”.

*[IAEA: 836]*

6.4.23.16 (former 6.4.23.13) In the introductory sentence, replace “approval certificate” with “certificate of approval”.

In (i), replace “design approval certificate(s)” with “certificate(s) of approval of design”.

In (j), replace “amounts” with “mass” and amend the end of the paragraph to read as follows: “...special form radioactive material, low dispersible



radioactive material or fissile material excepted under 2.7.2.3.5 (f) if applicable;”.

In (l), replace “quality assurance programme” with “management system” and “1.1.2.3.1” with “1.5.3.1”.

[IAEA: 837]

6.4.23.17 (former 6.4.23.14) In the introductory sentence, replace “approval certificate” with “certificate of approval”.

In (h) replace “shipment approval” with “approval of shipment”.

In (l), amend the end of the second sentence to read as follows: “...mass in grams (for fissile material the total mass of fissile nuclides or the mass for each fissile nuclide, when appropriate) and whether special form radioactive material, low dispersible radioactive material or fissile material excepted under 2.7.2.3.5 (f), if applicable;”.

In (n), amend the introductory sentence to read as follows: “For package designs containing fissile material which require multilateral approval of the package design in accordance with 6.4.22.4:”.

In (n)(vi), replace “6.4.11.4 (b)” with “6.4.11.5 (b)”.

In (t), replace “quality assurance programme” with “management system” and “1.1.2.3.1” with “1.5.3.1”.

[IAEA: 838]

6.4.23.18 Insert a new paragraph 6.4.23.18 to read as follows:

“6.4.23.18 Each certificate issued by a competent authority for alternative activity limits for an exempt consignment of instruments or articles according to 5.1.5.2.1 (d) shall include the following information:

- (a) Type of certificate;
- (b) The competent authority identification mark;
- (c) The issue date and an expiry date;
- (d) List of applicable national and international regulations, including the edition of the IAEA Regulations for the Safe Transport of Radioactive Material under which the exemption is approved;
- (e) The identification of the instrument or article;
- (f) A description of the instrument or article;
- (g) Design specifications for the instrument or article;
- (h) A specification of the radionuclide(s), the approved alternative activity limit(s) for the exempt consignment(s) of the instrument(s) or article(s);
- (i) Reference to documentation that demonstrates compliance with 2.7.2.2.2 (b);
- (j) If deemed appropriate by the competent authority, reference to the identity of the applicant;
- (k) Signature and identification of the certifying official.”.

Current paragraphs 6.4.23.15 and 6.4.23.16 become 6.4.23.19 and 6.4.23.20 respectively.

[IAEA: 839]

6.4.24.1 Amend to read as follows:

“Packages not requiring competent authority approval of design (excepted packages, Type IP-1, Type IP-2, Type IP-3 and Type A packages) shall meet these Regulations in full, except that packages that meet the requirements of the 1985 or 1985 (As Amended 1990) Editions of IAEA Regulations for the Safe Transport of Radioactive Material (IAEA Safety Series No.6):

- (a) May continue in transport provided that they were prepared for transport prior to 31 December 2003, and subject to the requirements of 6.4.24.4, if applicable;
- (b) May continue to be used provided that:
  - (i) They were not designed to contain uranium hexafluoride;
  - (ii) The applicable requirements of 1.5.3.1 of these Regulations are applied;
  - (iii) The activity limits and classification in Chapter 2.7 of these Regulations are applied;
  - (iv) The requirements and controls for transport in Parts 1, 3, 4, 5 and 7 of these Regulations are applied;
  - (v) The packaging was not manufactured or modified after 31 December 2003.”

[IAEA: 819]

6.4.24.2 Amend to read as follows:

“Packages requiring competent authority approval of the design shall meet these Regulations in full unless the following conditions are met:

- (a) The packagings were manufactured to a package design approved by the competent authority under the provisions of the 1973 or 1973 (As Amended) or the 1985 or 1985 (As Amended 1990) Editions of IAEA Safety Series No.6);
- (b) The package design is subject to multilateral approval;
- (c) The applicable requirements of 1.5.3.1 of these Regulations are applied;
- (d) The activity limits and classification in Chapter 2.7 of these Regulations are applied;
- (e) The requirements and controls for transport in in Parts 1, 3, 4, 5 and 7 of these Regulations are applied;
- (f) For a package containing fissile material and transported by air, the requirement of 6.4.11.11 is met;
- (g) For packages that meet the requirements of the 1973 or 1973 (As Amended) Editions of these Regulations:

- (i) The packages retain sufficient shielding to ensure that the radiation level at 1 m from the surface of the package would not exceed 10 mSv/h in the accident conditions of transport defined in the 1973 Revised or 1973 Revised (As Amended) Editions of IAEA Safety Series No.6 with the maximum radioactive contents which the package is authorized to contain;
- (ii) The packages do not utilize continuous venting;
- (iii) A serial number in accordance with the provision of 5.2.1.5.5 is assigned to and marked on the outside of each packaging.”

[IAEA: 820]

6.4.24.3 Amend to read as follows:

“No new manufacture of packagings to a package design meeting the provisions of the 1973, 1973 (As Amended), 1985, and 1985 (As Amended 1990) Editions of IAEA Safety Series No.6 shall be permitted to commence.”.

[IAEA: 821]

6.4.24.4 Insert a new paragraph to read as follows:

**“[Fissile material and] Packages excepted from the requirements for fissile materials under the Regulations annexed to the 16<sup>th</sup> revised edition or the 17<sup>th</sup> revised edition of the United Nations Recommendations on the Transport of Dangerous Goods (2009 Edition of IAEA Safety Standard Series No.TS-R-1)**

6.4.24.4 [Fissile material and] Packages containing fissile material that is excepted from classification as FISSILE according to 2.7.2.3.5 (a)(i) or (iii) of the Regulations annexed to the 16<sup>th</sup> revised edition or the 17<sup>th</sup> revised edition of the United Nations Recommendations on the Transport of Dangerous Goods (paras. 417 (a) (i) or (ii) of the 2009 Edition of IAEA Regulations for the Safe Transport of Radioactive Material prepared for transport before 31 December 2014 may continue in transport and may continue to be classified as non-fissile or fissile-excepted except that the consignment limits in Table 2.7.2.3.5 of these editions shall apply to the conveyance. The consignment shall be transported under exclusive use.”.

Current paragraph 6.4.24.4 becomes new 6.4.24.5.

[IAEA: 822]

6.4.24.5 (former 6.4.24.4) In the first sentence, replace “programme of quality assurance” with “management system” and “1.1.2.3.1” with “1.5.3.1”.

Replace the last sentence with the following: “No new manufacture of such special form radioactive material shall be permitted to commence.”.

[IAEA: 823]

## Chapter 7.1

- 7.1.8.1.1 In (b) delete “the critical group of”.

[IAEA: 562]

- Table 7.1.8.2 At the end of the current heading of column 2 insert: “other than inland waterway craft”.

[IAEA: Table 6]

- 7.1.8.3.2 Replace “approval certificate” with “certificate of approval”.

[IAEA: 565]

- Table 7.1.8.3.3 Amend the two first rows under the heading to read as follows:

Freight container	
Small freight container	50
Large freight container	50

In note “a” to the table, replace “7.2.3.1.3” with “7.2.3.1.2”.

[IAEA: Table 10]

- 7.1.8.4 Amend to read as follows: “Additional requirements relating to transport and storage in transit of fissile material”.

- Table 7.1.8.4.2 Amend the two first rows under the heading to read as follows:

Freight container		
Small freight container	50	n.a
Large freight container	50	100

Amend the end of note “b” to the table to read as follows: “... and stowed so as to maintain a spacing of at least 6 m from other groups.”.

Amend the end of the first sentence of note “c” to the table to read as follows: “... and stowed so as to maintain a spacing of at least 6 m from other groups.”.

[IAEA: Table 11]

- 7.1.8.4.3 Insert a new paragraph to read as follows:

“7.1.8.4.3 Fissile material meeting one of the provisions (a) to (f) of 2.7.2.3.5 shall meet the following requirements:

- (a) Only one of the provisions (a) to (f) of 2.7.2.3.5 is allowed per consignment;
- (b) Only one approved fissile material in packages classified in accordance with 2.7.2.3.5 (f) is allowed per consignment unless multiple materials are authorized in the certificate of approval;
- (c) Fissile material in packages classified in accordance with 2.7.2.3.5 (c) shall be transported in a consignment with no more than 45 g of fissile nuclides;
- (d) Fissile material in packages classified in accordance with 2.7.2.3.5 (d) shall be transported in a consignment with no more than 15 g of fissile nuclides;

- (e) Unpackaged or packaged fissile material classified in accordance with 2.7.2.3.5 (e) shall be transported under exclusive use on a conveyance with no more than 45 g of fissile nuclides.”.

*[IAEA: 570]*

7.1.8.5.4 Amend the end of the paragraph to read as follows:

“... and shall not be re-used unless the following conditions are fulfilled:

- (a) the non-fixed contamination shall not exceed the limits specified in 4.1.9.1.2;
- (b) the radiation level resulting from the fixed contamination shall not exceed 5  $\mu\text{Sv/h}$  at the surface.”.

*[IAEA: 513]*

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