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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**
(Twenty-first session, 1-10 July 2002
agenda item 9)

**HARMONIZATION WITH THE INTERNATIONAL ATOMIC ENERGY AGENCY (IAEA)
REGULATIONS FOR THE SAFE TRANSPORT OF RADIOACTIVE MATERIAL**

Transmitted by the International Atomic Energy Agency (IAEA)

The secretariat reproduces hereafter a proposal from IAEA for harmonizing the Model Regulations on the Transport of Dangerous Goods with the IAEA Regulations for the Safe Transport of Radioactive Material.

**SUMMARY OF CHANGES APPROVED BY TRANSSC VII FOR THE 2003 EDITION OF THE
IAEA REGULATIONS FOR THE SAFE TRANSPORT OF RADIOACTIVE MATERIAL -
PRESENTED IN UN FORMAT**

FOREWORD FOR PRESENTATION TO THE 21st SESSION OF THE UN SUB-COMMITTEE OF EXPERTS ON THE TRANSPORT OF DANGEROUS GOODS

In accordance with its statutory function the International Atomic Energy Agency (IAEA) has established and maintained the “Regulations for the Safe Transport of Radioactive Material” (the IAEA Transport Regulations). The last edition approved by the IAEA Board of Governors is the 1996 edition, also known as “ST-1”. ST-1 was reprinted in 2000 as TS-R-1 (ST-1, Revised).

Until 1999 the United Nations (UN) Recommendations on the Transport of Dangerous Goods did not include the detailed requirements of the IAEA Transport Regulations for the provisions concerning Class 7 - Radioactive Materials. Instead, it referred to the IAEA Transport Regulations for most of the Class 7 requirements. Following the publication of ST-1 in 1996, joint efforts were undertaken by the IAEA and representatives from the UN Committee of Experts on the Transport of Dangerous Goods to include all the requirements of the IAEA Transport Regulations into the UN document which at that time was being reformatted into Model Regulations. These joint efforts included rearranging and at times rewording the requirements of the IAEA Transport Regulations, without changing the actual requirements, in order to make them compatible with the structure and format of the UN Model Regulations.

The 11th revised edition of the UN Model Regulations, published in 1999, was the first edition which included all the provisions for the transport of radioactive material as required in accordance with the 1996 edition of the IAEA Transport Regulations. These provisions remained unchanged in the 12th revised edition of the UN Model Regulations published in 2001.

Following the publication of the 1996 edition of the Transport Regulations, the IAEA made significant changes to the process for review and revision of its regulations. The process was harmonized with the 2-year revision processes for the UN Model Regulations and the international modal transport regulations. The harmonization of the revision processes was intended to facilitate integrated world-wide implementation of revisions to the IAEA Transport Regulations for all modes of transport.

The IAEA started review and revision of the 1996 edition of its Transport Regulations at the beginning of the year 2000 in accordance with the new review and revision process. Reports on progress were submitted at previous meetings of the UN Sub-Committee of Experts on the Transport of Dangerous Goods in order to keep the Sub-Committee up to date on possible related changes to be incorporated in the 13th revised edition of the UN Model Regulations.

The IAEA review and revision process resulted recently in approval by the IAEA Transport Safety Standards Committee (TRANSSC) of the changes to be incorporated in the next (2003) edition of the IAEA Transport Regulations. All the changes approved at the 4-8 March 2002 TRANSSC meeting (TRANSSC VII) are submitted in this report to the UN Sub-Committee of Experts on the Transport of Dangerous Goods for their consideration.

The Sub-Committee is requested to make recommendations concerning the incorporation of the TRANSSC VII approved changes into the 2003 edition of the UN Model Regulations.

SUMMARY OF CHANGES APPROVED BY TRANSSC VII FOR THE 2003 EDITION OF THE IAEA REGULATIONS FOR THE SAFE TRANSPORT OF RADIOACTIVE MATERIAL - PRESENTED IN UN FORMAT

NOTES FOR REVIEW OF THE CHANGES

The TRANSSC VII approved changes are submitted, complete with the UN numbering and in the sequence of the existing UN Model Regulations. The IAEA numbering is provided in brackets. The text of the changed paragraphs, sub-paragraphs and tables is provided in parallel with the related text from the Twelfth Revised Edition of the UN Recommendations on the Transport of Dangerous Goods Model Regulations in order to facilitate the review of the changes. All changed, additional, or amended text, as approved by TRANSSC VII, is marked in **bold**.

In accordance with the process used for incorporating the requirements of the IAEA Transport Regulations into the UN Model Regulations, the changed regulations may be rearranged and reworded to make them compatible with the structure and format of the UN Model Regulations provided that the actual requirements of the IAEA Transport Regulations are not changed. The rearranging and any required rewording were essentially taken care of at the time of the first incorporation of the requirements of the IAEA Transport Regulations, but attention should be given to new and changed text which is marked in **bold**.

The changes are numbered 1 to 32 for quick reference.

- Changes 1 to 26 represent changes to specific identified text or tables.
- Change 27 is an editorial change that applies to a number of (identified) paragraphs throughout the regulations.
- Change 28 involves a change to a footnote which appears not to have been incorporated in the UN Model Regulations but should have been. Similarly, another related footnote is also identified under change 28. A recommendation is required on how and where to include these footnotes in the Model Regulations for consistency with the IAEA Transport Regulations.
- Changes 29 to 32 do not require any changes to the UN Model Regulations. The reasons are provided with the changes.

EXISTING TEXT IN UN MODEL REGULATIONS (TWELFTH REVISED EDITION)	REVISED TEXT APPROVED BY TRANSSEC VII	#
<p>There is no 1.1.2.6.</p>	<p>Add new 1.1.2.6 and 1.1.2.6.1 (new IAEA Para. 313 with heading) as follows:</p> <p>1.1.2.6 Non-compliance</p> <p>1.1.2.6.1 (IAEA para 313). In the event of a non-compliance with any limit in these Regulations applicable to <i>radiation level or contamination</i></p> <p>(a) the <i>consignor</i> shall be informed of the non-compliance by</p> <p>(i) <i>the carrier</i> if the non-compliance is identified during transport; or</p> <p>(ii) <i>the consignee</i> if the non-compliance is identified at receipt;</p> <p>(b) the <i>carrier, consignor or consignee</i>, as appropriate shall:</p> <p>(i) take immediate steps to mitigate the consequences of the non-compliance;</p> <p>(ii) investigate the non-compliance and its causes, circumstances and consequences;</p> <p>(iii) take appropriate action to remedy the causes and circumstances that led to the non-compliance and to prevent a recurrence of similar circumstances that led to the non-compliance; and</p> <p>(iv) communicate to the relevant <i>competent authority(ies)</i> on the causes of the non-compliance and on corrective or preventive actions taken or to be taken; and</p> <p>(c) the communication of the non-compliance to the <i>consignor</i> and relevant <i>competent authority(ies)</i>, respectively, shall be made as soon as practicable and it shall be immediate whenever an emergency exposure situation has developed or is developing.</p>	1

EXISTING TEXT IN UN MODEL REGULATIONS (TWELFTH REVISED EDITION)	REVISED TEXT APPROVED BY TRANSSEC VII	#
<p>2.7.1.2(e):</p> <p>natural material and ores containing naturally occurring radionuclides which are not intended to be processed for use of these radionuclides provided the activity concentration of the material does not exceed 10 times the values specified in 2.7.7.2.</p>	<p>Change 2.7.1.2(e) (IAEA Sub-para.107(e)) to:</p> <p>natural material and ores containing naturally-occurring radionuclides which are either in their natural state, or have only been processed for purposes other than for extraction of the radionuclides, and which are not intended to be processed for use of these radionuclides, provided the activity concentration of the material does not exceed 10 times the values specified in 2.7.7.2 (IAEA paras 401-406);</p>	2
<p>There is no 2.7.1.2(f).</p>	<p>Add new 2.7.1.2(f) (IAEA Sub-para. 107 (f)) to read:</p> <p>Non-radioactive solid objects with radioactive substances present on any surfaces in quantities not in excess of the limit defined in 2.7.2 (IAEA para. 214)”. </p>	3
<p>Title for Table 2.7.6.1.1:</p> <p>Multiplication factor for large dimension loads</p>	<p>Change Title for Table 2.7.6.1.1 (IAEA TABLE VI) to:</p> <p>Multiplication factor for tanks, freight containers and unpackaged LSA-I and SCO-I</p>	4
<p>2.7.6.2.2:</p> <p>The <i>criticality safety index</i> for each <i>consignment</i> shall be determined as the sum of the <i>CSIs</i> of all the <i>packages</i> contained in that <i>consignment</i>.</p>	<p>Change 2.7.6.2.2 (IAEA Para. 529) to:</p> <p>The <i>criticality safety index</i> for each overpack or freight container shall be determined as the sum of the <i>CSIs</i> of all the <i>packages</i> contained. The same procedure shall be followed for determining the total sum of the CSIs in a consignment or aboard a conveyance.</p>	5

EXISTING TEXT IN UN MODEL REGULATIONS (TWELFTH REVISED EDITION)	REVISED TEXT APPROVED BY TRANSSEC VII	#
A ₁ value for Cf-252 in Table 2.7.7.2.1: 5 x 10 ⁻² TBq	Change A ₁ value for Cf-252 in Table 2.7.7.2.1 (IAEA Table I) to: 1 x 10⁻¹ TBq	6
2.7.8.3: The maximum <i>radiation level</i> at any point on any external surface of a <i>package</i> under <i>exclusive use</i> shall not exceed 10 mSv/h.	Change 2.7.8.3 (IAEA Para. 532) to: The maximum <i>radiation level</i> at any point on any external surface of a <i>package</i> or overpack under <i>exclusive use</i> shall not exceed 10 mSv/h.	7
2.7.9.3(b): Each instrument or article (except radioluminescent time-pieces or devices) bears the marking "RADIOACTIVE"; and	Change 2.7.9.3(b) (IAEA Sub para. 517(b)) to: Each instrument or article bears the marking "RADIOACTIVE" except: i) radioluminescent time-pieces or devices, ii) consumer products that either have received regulatory approval according to 2.7.1.2(d) (IAEA para. 107(d)) or do not individually exceed the activity limit for an exempt <i>consignment</i> in Table 2.7.7.2.1 (column 5) (IAEA Table I (column 5)), provided such products are transported in a <i>package</i> that bears the marking "RADIOACTIVE" on an internal surface in such a manner that warning of the presence of radioactive material is visible on opening the package, and	8
4.1.9.1.4: Except as provided in 7.1.7.5.5, the level of <i>non-fixed contamination</i> on the external and internal surfaces of <i>overpacks, freight containers, tanks and intermediate bulk containers</i> shall not exceed the limits specified in 4.1.9.1.2.	Change 4.1.9.1.4 (IAEA Para. 509) to: Except as provided in 7.1.7.5.5 (IAEA para. 514), the level of <i>non-fixed contamination</i> on the external and internal surfaces of <i>overpacks, freight containers, tanks, intermediate bulk containers and conveyances</i> shall not exceed the limits specified in 4.1.9.1.2 (IAEA para 508)."	9

EXISTING TEXT IN UN MODEL REGULATIONS (TWELFTH REVISED EDITION)	REVISED TEXT APPROVED BY TRANSSEC VII	#
<p>5.1.5.1.2(f):</p> <p>For each <i>special form radioactive material</i>, it shall be ensured that all the requirements specified in the special form approval certificate and the relevant provisions of these Regulations have been satisfied.</p>	<p>Delete in 5.1.5.1.2(f) (IAEA Sub-para. 502 (f)) the words “special form” prior to “approval” to read:</p> <p>For each <i>special form radioactive material</i>, it shall be ensured that all the requirements specified in the approval certificate and the relevant provisions of these Regulations have been satisfied.</p>	10
<p>5.4.1.5.7.1(h):</p> <p>For <i>consignments of packages</i> in an <i>overpack</i> or <i>freight container</i>, a detailed statement of the contents of each <i>package</i> within the <i>overpack</i> or <i>freight container</i> and, where appropriate, of each <i>overpack</i> or <i>freight container</i> in the <i>consignment</i>. If <i>packages</i> are to be removed from the <i>overpack</i> or <i>freight container</i> at a point of intermediate unloading, appropriate transport documents shall be made available;</p>	<p>Change 5.4.1.5.7.1(h) (IAEA Sub-para. 549(k)) to read:</p> <p>For <i>consignments of more than one package</i>, the information contained in 5.4.1.4.1 (a) to (c) and 5.4.1.5.7.1 (a) to (g) (IAEA para 549(a) to (j)) shall be given for each package. For packages in an overpack, freight container, or conveyance, a detailed statement of the contents of each <i>package</i> within the <i>overpack, freight container, or conveyance</i> and, where appropriate, of each <i>overpack, freight container, or conveyance shall be included</i>. If <i>packages</i> are to be removed from the <i>overpack, freight container, or conveyance</i> at a point of intermediate unloading, appropriate transport documents shall be made available;</p>	11
<p>6.4.3.3:</p> <p><i>Packages</i> containing <i>radioactive material</i> transported by air shall have a <i>containment system</i> able to withstand without leakage a reduction in ambient pressure to 5 kPa.</p>	<p>Change 6.4.3.3 (IAEA Para. 619) to:</p> <p><i>Packages</i> containing <i>radioactive material</i>, to be transported by air, shall be capable of withstanding without leakage an internal pressure which produces a pressure differential of not less than <i>maximum normal operating pressure</i> plus 95 kPa.</p>	12

EXISTING TEXT IN UN MODEL REGULATIONS (TWELFTH REVISED EDITION)	REVISED TEXT APPROVED BY TRANSSEC VII	#
<p>6.4.6.1 to 6.4.6.4:</p> <p>6.4.6.1. Except as allowed in 6.4.6.4, uranium hexafluoride shall be packaged and transported in accordance with the provisions of ISO 7195:1993 "Packaging of uranium hexafluoride (UF₆) for transport, and the requirements of 6.4.6.2 and 6.4.6.3. The <i>package</i> shall also meet the requirements prescribed elsewhere in these Regulations which pertain to the radioactive and fissile properties of the material.</p> <p>6.4.6.2. Each <i>package</i> designed to contain 0.1 kg or more of uranium hexafluoride shall be designed so that it would meet the following requirements:</p> <p>(a) withstand without leakage and without unacceptable stress, as specified in ISO 7195:1993, the structural test as specified in 6.4.21;</p> <p>(b) withstand without loss or dispersal of the uranium hexafluoride the test specified in 6.4.15.4; and</p> <p>(c) withstand without rupture of the <i>containment system</i> the test specified in 6.4.17.3.</p> <p>6.4.6.3. <i>Packages</i> designed to contain 0.1 kg or more of uranium hexafluoride shall not be provided with pressure relief devices.</p> <p>6.4.6.4. Subject to the approval of the <i>competent authority</i>, <i>packages</i> designed to contain 0.1 kg or more of uranium hexafluoride may be transported if:</p>	<p>Change 6.4.6.1 to 6.4.6.4 (IAEA Paras. 629 to 632) to:</p> <p>6.4.6.1 (IAEA para. 629) Packages designed to contain uranium hexafluoride shall meet the requirements prescribed elsewhere in these Regulations which pertain to the radioactive and fissile properties of the material. Except as allowed in 6.4.6.4 (IAEA para. 632), uranium hexafluoride in quantities of 0.1 kg or more shall also be packaged and transported in accordance with the provisions of ISO 7195: 1993 "Packaging of Uranium Hexafluoride (UF₆) for Transport", and the requirements of 6.4.6.2 and 6.4.6.3 (IAEA paras 630-631).</p> <p>6.4.6.2 (IAEA para.630). Each package designed to contain 0.1 kg or more of uranium hexafluoride shall be designed so that it would meet the following requirements:</p> <p>(a) withstand without leakage and without unacceptable stress, as specified in ISO 7195:1993, the structural test as specified in 6.4.21 (IAEA para. 718);</p> <p>(b) withstand without loss or dispersal of the uranium hexafluoride the free drop test specified in 6.4.15.4 (IAEA para. 722); and</p> <p>(c) withstand without rupture of the containment system the thermal test specified in 6.4.17.3 (IAEA para. 728).</p> <p>6.4.6.3 (IAEA para. 631) (<i>No Change</i>) Packages designed to contain 0.1 kg or more of uranium hexafluoride shall not be provided with pressure relief devices.</p> <p>6.4.6.4 (IAEA para. 632). Subject to the approval of the competent authority, packages designed to contain 0.1 kg or more of uranium hexafluoride may be transported if:</p>	13

EXISTING TEXT IN UN MODEL REGULATIONS (TWELFTH REVISED EDITION)	REVISED TEXT APPROVED BY TRANSSEC VII	#
<p>(a) the <i>packages</i> are designed to requirements other than those given in ISO 7195:1993 and 6.4.6.2 and 6.4.6.3 but, notwithstanding, the requirements of 6.4.6.2 and 6.4.6.3 are met as far as practicable;</p> <p>(b) the <i>packages</i> are designed to withstand without leakage and without unacceptable stress a test pressure less than 2.76 MPa as specified in 6.4.21; or</p> <p>(c) for <i>packages</i> designed to contain 9000 kg or more of uranium hexafluoride, the <i>packages</i> do not meet the requirement of 6.4.6.2(c).</p>	<p>(a) the packages are designed to international or national standards other than ISO 7195:1993 provided an equivalent level of safety is maintained;</p> <p>(b) the packages are designed to withstand without leakage and without unacceptable stress a test pressure of less than 2.76 MPa as specified in 6.4.21 (IAEA para. 718); or</p> <p>(c) for packages designed to contain 9000 kg or more of uranium hexafluoride, the packages do not meet the requirement of 6.4.6.2(c) (IAEA para 630(c)).</p> <p>In all other respects the requirements specified in 6.4.6.1-6.4.6.3 (IAEA paras 629-631) shall be satisfied.</p>	
<p>6.4.7.16(a):</p> <p>Be adequate to meet the conditions specified in 6.4.7.14 above if the <i>package</i> is subjected to the tests specified in 6.4.16; and</p>	<p>Change 6.4.7.16(a) (IAEA Sub-para. 648(a)) to:</p> <p>Be adequate to meet the conditions specified in 6.4.7.14(a) (IAEA para.646(a)) above if the <i>package</i> is subjected to the tests specified in 6.4.16 (IAEA para. 725); and</p>	14

EXISTING TEXT IN UN MODEL REGULATIONS (TWELFTH REVISED EDITION)		REVISED TEXT APPROVED BY TRANSSC VII		#
Table 6.4.8.5:		Revise Table 6.4.8.5 (IAEA Table XI) to the following:		15
Table 6.4.8.5.Insolation data		Table 6.4.8.5 (IAEA TABLE XI): Insolation data		
Form and location of surface	Insolation for 12 hours per day (W/m ²)	Case	Form and location of surface	Insolation for 12 hours per day (W/m ²)
Flat surfaces transported horizontally:		1	Flat surfaces transported horizontally-downward facing	0
- base	none	2	Flat surfaces transported horizontally-upward facing	800
- other surfaces	800	3	Surfaces transported vertically	200 ^a
Flat surfaces not transported horizontally:		4	Other downward facing (not horizontal) surfaces	200 ^a
- each surface	200 ^a	5	All other surfaces	400 ^a
Curved surfaces	400 ^a	^a Alternatively, a sine function may be used, with an absorption coefficient adopted and the effects of possible reflection from neighbouring objects neglected		
^a Alternatively, a sine function may be used, with an absorption coefficient adopted and the effects of possible reflection from neighbouring objects neglected.				
6.4.11.1(b)(i):		Change 6.4.11.1(b)(i) (IAEA Sub-para. 671(b)(i)) to:		16
of 6.4.7.2 for <i>fissile material</i> contained in <i>packages</i> ;		of 6.4.7.2 (IAEA para. 634) for <i>packages containing fissile material</i> ;		

EXISTING TEXT IN UN MODEL REGULATIONS (TWELFTH REVISED EDITION)	REVISED TEXT APPROVED BY TRANSSEC VII	#
6.4.11.2(a) (last sentence): Neither beryllium nor deuterium shall be present in quantities exceeding 0.1% of the <i>fissile material</i> mass.	Change 6.4.11.2(a) last sentence (IAEA Sub-para. 672(a) (last sentence)) to: Neither beryllium nor deuterium in hydrogenous material enriched in deuterium shall be present in quantities exceeding 1% of the applicable consignment mass limits provided in Table 6.4.11.2 (IAEA Table XII) .	17
6.4.11.5: The <i>packaging</i> , after being subjected to the tests specified in 6.4.15, must prevent the entry of a 10 cm cube.	Change 6.4.11.5 (IAEA Para. 675) to: The <i>package</i> , after being subjected to the tests specified in 6.4.15 (IAEA paras 719-724), must prevent the entry of a 10 cm cube.	18
6.4.11.10: For <i>packages</i> to be transported by air: (a) the <i>package</i> shall be subcritical under conditions consistent with the tests prescribed in 6.4.20.1 assuming reflection by at least 20cm of water but no water leakage; and (b) allowance shall not be made for special features of 6.4.11.7 unless, following the tests specified in 6.4.20.1 and, subsequently, 6.4.19.3, leakage of water into or out of the void spaces is prevented.	Change 6.4.11.10 (IAEA Para. 680) to: For <i>packages</i> to be transported by air: a) the <i>package</i> shall be subcritical under conditions consistent with the Type C package tests specified in 6.4.20.1 (IAEA para. 734) assuming reflection by at least 20 cm of water but no water leakage; and b) in the assessment of 6.4.11.9 (IAEA para. 679) allowance shall not be made for the special features of 6.4.11.7 (IAEA para. 677) unless, following the Type C package tests specified in 6.4.20.1 (IAEA para. 734) and, subsequently, the water leakage test of 6.4.19.3 (IAEA para. 733) , leakage of water into or out of void spaces is prevented.	19

EXISTING TEXT IN UN MODEL REGULATIONS (TWELFTH REVISED EDITION)	REVISED TEXT APPROVED BY TRANSSEC VII	#
<p>6.4.14: The target for the drop tests specified in 2.7.4.5(a), 6.4.15.4, 6.4.16(a), 6.4.17.2, 6.4.20.2 and 6.4.20.4 shall be a flat, horizontal surface of such a character that any increase in its resistance to displacement or deformation upon impact by the specimen would not significantly increase the damage to the specimen.</p>	<p>Delete from 6.4.14 (IAEA Para. 717) the reference to 6.4.20.4 (IAEA para. 737) to read: The target for the drop test specified in 2.7.4.5(a), 6.4.15.4, 6.4.16(a), 6.4.17.2 and 6.4.20.2 (IAEA paras. 705, 722, 725(a), 727 and 735) shall be a flat, horizontal surface of such a character that any increase in its resistance to displacement or deformation upon impact by the specimen would not significantly increase damage to the specimen.</p>	20
<p>6.4.17.2(b): For drop II, the specimen shall drop so as to suffer the maximum damage onto a bar rigidly mounted perpendicularly on the target. The height of the drop measured from the intended point of impact of the specimen to the upper surface of the bar shall be 1 m. The bar shall be of solid mild steel of circular section, (15.0 ± 0.5) cm in diameter and 20 cm long unless a longer bar would cause greater damage, in which case a bar of sufficient length to cause maximum damage shall be used. The upper end of the bar shall be flat and horizontal with its edges rounded off to a radius of not more than 6 mm. The target on which the bar is mounted shall be as described in 6.4.14.</p>	<p>Change 6.4.17.2(b) (IAEASub-para. 727(b)) to: For drop II, the specimen shall drop so as to suffer the maximum damage onto a bar rigidly mounted perpendicularly on the target. The height of the drop measured from the intended point of impact of the specimen to the upper surface of the bar shall be 1 m. The bar shall be of solid mild steel of circular section, (15.0 ± 0.5) cm in diameter and 20 cm long unless a longer bar would cause greater damage, in which case a bar of sufficient length to cause maximum damage shall be used. The upper end of the bar shall be flat and horizontal with its edge rounded off to a radius of not more than 6 mm. The target on which the bar is mounted shall be as described in 6.4.14 (IAEA para. 717).</p>	21

EXISTING TEXT IN UN MODEL REGULATIONS (TWELFTH REVISED EDITION)	REVISED TEXT APPROVED BY TRANSSEC VII	#
<p>6.4.20.2(a):</p> <p>The specimen, representing a <i>package</i> having a mass less than 250 kg, shall be placed on a target and subjected to a probe having a mass of 250 kg falling from a height of 3 m above the intended impact point. For this test the probe shall be a 20 cm diameter cylindrical bar with the striking end forming a frustum of a right circular cone with the following dimensions: 30 cm height and 2.5 cm in diameter at the top. The target on which the specimen is placed shall be as specified in 6.4.14.</p>	<p>Change 6.4.20.2(a) (IAEA Sub-para. 735(a)) to:</p> <p>The specimen, representing a <i>package</i> having a mass less than 250 kg, shall be placed on a target and subjected to a probe having a mass of 250 kg falling from a height of 3 m above the intended impact point. For this test the probe shall be a 20 cm diameter cylindrical bar with the striking end forming a frustum of a right circular cone with the following dimensions: 30 cm height and 2.5 cm in diameter at the top with its edge rounded off to a radius of not more than 6 mm. The target on which the specimen is placed shall be as specified in 6.4.14 (IAEA para. 717).</p>	22
<p>6.4.20.4:</p> <p>Impact test: The specimen shall be subject to an impact on a target at a velocity of not less than 90 m/s, at such an orientation as to suffer maximum damage. The target shall be as defined in 6.4.14.</p>	<p>Change 6.4.20.4 (IAEA Para. 737) to:</p> <p>Impact test: The specimen shall be subject to an impact on a target at a velocity of not less than 90 m/s, at such an orientation as to suffer maximum damage. The target shall be as defined in 6.4.14 (IAEA para. 717), except that the target surface may be at any orientation as long as the surface is normal to the specimen path.</p>	23
<p>7.1.7.3.3(c):</p> <p>The <i>radiation level</i> under routine conditions of transport shall not exceed 2 mSv/h at any point on, and 0.1 mSv/h at 2 m from, the external surface of the <i>conveyance</i>;</p>	<p>Change 7.1.7.3.3(c) (IAEA Sub-para. 566 (c)) to:</p> <p>The <i>radiation level</i> under routine conditions of transport shall not exceed 2 mSv/h at any point on, and 0.1 mSv/h at 2 m from, the external surface of the <i>conveyance</i>, except for <i>consignments</i> transported under <i>exclusive use</i> by road or rail, for which the radiation limits around the <i>vehicle</i> are set forth in 7.2.3.1.2(b) and (c) (IAEA para 572(b) and (c));</p>	24

EXISTING TEXT IN UN MODEL REGULATIONS (TWELFTH REVISED EDITION)	REVISED TEXT APPROVED BY TRANSSEC VII	#
<p>7.1.7.4.1: The number of <i>packages</i>, <i>overpacks</i> and <i>freight containers</i> containing <i>fissile material</i> stored in transit in any one storage area shall be so limited that the total sum of the <i>criticality safety indexes</i> in any group of such <i>packages</i>, <i>overpacks</i> or <i>freight containers</i> does not exceed 50. Groups of such <i>packages</i>, <i>overpacks</i> and <i>freight containers</i> shall be stored so as to maintain a spacing of at least 6 m from other groups of such <i>packages</i>, <i>overpacks</i> or <i>freight containers</i>.</p>	<p>Change 7.1.7.4.1 (IAEA Para. 568) to: Any group of <i>packages</i>, <i>overpacks</i>, and <i>freight containers</i> containing <i>fissile material</i> stored in transit in any one storage area shall be so limited that the total sum of the <i>criticality safety indexes</i> in the group does not exceed 50. Each group shall be stored so as to maintain a spacing of at least 6 m from other such groups.</p>	25
<p>7.1.7.5.5: An <i>overpack</i>, <i>freight container</i>, <i>tank</i>, <i>intermediate bulk container</i> or <i>conveyance</i> dedicated to the transport of <i>radioactive material</i> under <i>exclusive use</i> shall be excepted from the requirements of 4.1.9.1.4 and 7.1.7.5.4 solely with regard to its internal surfaces and only for as long as it remains under that specific <i>exclusive use</i>.</p>	<p>Delete “overpack” from 7.1.7.5.5 (IAEA Para. 514) and change it to read: A <i>freight container</i>, <i>tank</i>, <i>intermediate bulk container</i> or <i>conveyance</i> dedicated to the transport of <i>unpacked radioactive material</i> under <i>exclusive use</i> shall be excepted from the requirements of 4.1.9.1.4 (IAEA para 509) and 7.1.7.5.4 (IAEA para 513) solely with regard to its internal surfaces and only for as long as it remains under that specific <i>exclusive use</i>.</p>	26
<p>Identification of Industrial Packages throughout the text: These packages are generally referred to as, Industrial Packages Type 2 and 3 (Type IP 2 and Type IP 3)</p>	<p>Just refer to Type IP 2 and Type IP 3. The complete wording could be used only in the definition of these package types. This would make the regulations more consistent as they would refer to Type A, Type B, Type C, and Type IP packages. <u>Example</u> Old text Industrial package Type I (Type IP-1) New text Type IP-1 package The affected paragraphs in the UN Model Regulations are the following: 2.7.2, 2.7.7.1.3, 4.1.9.2.1, 5.2.1.5.4, 6.4.5 to 6.4.5.4.5, 6.4.24.1, 6.4.23.9 and 6.4.23.10 (IAEA paras: 230, 411, 521, 537, 621 to 628, 815, 828 and 829)</p>	27

EXISTING TEXT IN UN MODEL REGULATIONS (TWELFTH REVISED EDITION)	REVISED TEXT APPROVED BY TRANSSEC VII	#
<p>Footnote “a” to IAEA Table VIII was not incorporated in the related UN Dangerous Goods List, or 3.2.1 or Appendix B. This was probably an oversight when all the requirements of the IAEA were first incorporated into the UN Model Regulations (1999 edition).</p>	<p>Since there is no footnote “a” in the UN Dangerous Goods List or the related 3.2.1 or Appendix B, it cannot be revised as for the related IAEA TABLE VIII.</p> <p>However, consideration should be given to include some note into the UN Dangerous Goods List or the related 3.2.1 or Appendix B to reflect the use of footnote “a” in IAEA Table VIII as well as the following revised text for footnote “a” for IAEA Table VIII:</p> <p>The “PROPER SHIPPING NAME” is found in the column “PROPER SHIPPING NAME and description” and is restricted to that part shown in CAPITAL LETTERS. In the case of UN 2909, UN 2911, UN 2913, and UN3326 where alternative PROPER SHIPPING NAMES are separated by the word “or”, only the relevant “PROPER SHIPPING NAME” shall be used.</p> <p>NOTE. In addition, consideration should be given to include some note into the UN Dangerous Goods List or the related 3.2.1 or Appendix B to reflect the use of footnote “b” in IAEA Table VIII.</p> <p>Footnote “b” for IAEA Table VIII reads as follows:</p> <p>“Fissile-excepted” applies only to those packages complying with para. 672.</p> <p>NOTE. IAEA para. 672 is UN 6.4.1.2.</p>	28

NOTE. Similarly, footnote “b” to IAEA Table VIII was not incorporated in the UN Dangerous Goods List or the related 3.2.1 or Appendix B

EXISTING TEXT IN UN MODEL REGULATIONS (TWELFTH REVISED EDITION)	REVISED TEXT APPROVED BY TRANSSEC VII	#
Existing 1.3.1, 1.3.2 and 1.3.3 concerning Training.	No change required in UN regulations. The new IAEA paras. 314, 315 and 316 are essentially the same as the existing UN 1.3.1, 1.3.2 and 1.3.3	29
5.2.1.1 and 5.2.1.5.2 “Unless provided otherwise in these Regulations, the proper shipping name for the dangerous goods as determined in accordance with 3.1.2 and the corresponding UN Number preceded by the letters “UN”, shall be displayed on each package. In the case of unpackaged.....”	No change required in UN regulations. The approved change in IAEA Para. 535 is an additional reference to IAEA Table VIII (included in UN Dangerous Goods List) for finding the proper shipping name. The reference in UN 5.2.1.1 to UN 3.1.2 for the proper shipping name does not require repetition in UN 5.2.1.5.2. The approved revised text for IAEA para. 535 is as follows: For each <i>package</i> , other than <i>excepted packages</i> , the United Nations number (see Table VIII), preceded by the letters “UN”, and the proper shipping name (see Table VIII) shall be legibly and durably marked on the outside of the <i>packaging</i> . In the case of <i>excepted packages</i> , other than those accepted for international movement by post, only the United Nations number, preceded by the letters “UN”, shall be required. For <i>packages</i> accepted for international movement by post the requirement of para. 580 shall apply.	30
5.2.1.5.2 For each package, other than excepted packages, the United Nations number, preceded by the letters “UN”, and the proper shipping name shall be legibly and durably marked on the outside of the packaging. In the case of excepted packages only the United Nations number, preceded by the letters “UN”, shall be required.		

EXISTING TEXT IN UN MODEL REGULATIONS (TWELFTH REVISED EDITION)	REVISED TEXT APPROVED BY TRANSSEC VII	#
5.3.2.1 and Figure 5.3.1	<p>No change required in UN regulations.</p> <p>The revised IAEA text for sub-para 547(a) is already reflected correctly in UN 5.3.2.1.</p> <p>The approved revised text for IAEA sub-para 547(a) involves deleting the words “preceded by the letters “UN” to read:</p> <p>in the lower half of the placard shown in Fig. 6 and against the white background, or</p>	31
2.7.3.4 (part of section on LSA only) and 2.7.10.1(c) (part of section on low dispersible material only)	<p>No change required in UN regulations.</p> <p>The header prior to IAEA para. 703 applies to both LSA-III material and Low Dispersible Material. The related UN 2.7.3.4 applies to LSA only and the related UN 2.7.10.1(c) applies to low dispersible material only.</p> <p>The change approved for the IAEA regulations is as follows:</p> <p>Change header prior to IAEA Para 703 to:</p> <p>LEACHING TEST FOR LSA-III MATERIAL AND LOW DISPERSIBLE RADIOACTIVE MATERIAL</p>	32