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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

Thirty-eighth session
Geneva, 29 November–7 December 2010
Item 8 of the provisional agenda
Cooperation with the International Atomic Energy Agency (IAEA)

Guidance for the security in transport of radioactive material

Transmitted by the International Atomic Energy Agency (IAEA)[1]

1. By resolution 724 (XXVIII) of 17 July 1959, the Economic and Social Council informed the IAEA of its desire that the Agency be entrusted with the drafting of recommendations on the transport of radioactive substances, provided that they are consistent with the framework and general principles of recommendations of the Committee of Experts on the Transport of Dangerous Goods of the United Nations, and that they are established in consultation with the United Nations and the specialized agencies concerned.

2. Since then, the IAEA has elaborated, in close cooperation with the United Nations and its specialized agencies, the Regulations for the Safe Transport of Radioactive Material, the provisions of which were incorporated in the UN Model Regulations on the Transport of Dangerous Goods (11th revised edition, 1999).

3. The IAEA has worked on security of the transport of radioactive material, taking account of the security provisions contained in the UN Model Regulations, and has now published (2008) an Implementing Guide in the IAEA Nuclear Security Series No. 9, entitled "Security in the Transport of Radioactive Material", (www-pub.iaea.org/MTCD/publications/PDF/Pub1348_web.pdf).

4. This guidance has been developed in close cooperation with Members States and agreed for publication by consensus.

[1] In accordance with the programme of work of the Sub-Committee for 2009-2010 approved by the Committee at its fourth session (refer to ST/SG/AC.10/C.3/68, para. 118 (f) and ST/SG/AC.10/36, para. 14).

5. The IAEA is pleased to note that a re-written proposal on changing the threshold values for Class 7 together with some additional changes in the text was adopted at the thirty-seventh session of the Sub-Committee.

6. The Sub-Committee was asked to consider some additional provisions contained in the IAEA Implementing Guide on “Security in the Transport of Radioactive Material” presented in Annex 2 of informal document UN/SCETDG/36/INF.38.

7. Taking into account the discussions of this proposal that took place at the thirty-seventh session of the Sub-Committee, the IAEA has revised the proposal and new proposed text is given in the Annex to this document.

8. The proposal is based on the following considerations:

- As of August 2010, 99 States have written to the Director General of the IAEA that they fully supports and endorses the Agency's efforts to enhance the safety and security of radioactive sources; and that they are working toward following the guidance contained in the Code of Conduct for the Safety and Security of Radioactive Sources and that they encourage other countries to do the same.(GC47/Res7).
- The code sets out that sources in Category 1 – 3, within its territory, or under its jurisdiction or control, are safely managed and securely protected during their useful lives.

9. The Sub-Committee is invited to accept the amendments outlined in the Annex to this document.

10. The Sub-Committee is further invited to note that the Agency is in a position to support Member States in enhancing security measures for the transport of radioactive material, including that for their industries, and would welcome expressions of interest.

Annex

Amendment to Chapter 1.4 of the UN Model Regulations on the Transport of Dangerous Goods proposed by the IAEA

Chapter 1.4

Amend sections 1.4.2, 1.4.3 and 1.4.4 as follows:

"**1.4.2 Specific security provisions for Class 7 Radioactive Material**

1.4.2.1 The following additional security provisions shall be applied to Class 7 radioactive material, except for material which does not present a security concern in the view of the relevant authorities. Such material includes very small quantities (UN 2908, UN 2909 excepted packages) (UN 2910, UN 2911 excepted packages with an activity level not exceeding the A_2 value), material of low activity concentration and low level contaminated objects (UN 2912 LSA-I and UN 2913 SCO-I).

1.4.2.1.1 Appropriate crew members shall be aware of required security measures, including how to respond to a security event during transport.

1.4.2.1.2 The consignor shall provide advance notification to the consignee of the planned shipment, mode of transport and expected delivery time.

1.4.2.1.3 The consignee shall inform the consignor about packages that are not delivered to the intended recipient at the expected time and consignors shall have procedures in place that would initiate an inquiry in the event of such notification.".

1.4.3 *Existing 1.4.2*

1.4.4 *Existing 1.4.3, amended to read as follows:*

"**1.4.4 Provisions for high consequence dangerous goods**

1.4.4.1 ***Definition of high consequence dangerous goods***

1.4.4.1.1 High consequence dangerous goods are those which have the potential for misuse in a terrorist event and which may, as a result, produce serious consequences such as mass casualties, mass destruction or, particularly for Class 7, mass socio-economic disruption.

1.4.4.1.2 An indicative list of high consequence dangerous goods in classes and divisions other than Class 7 is given in Table 1.4.1 below.

[Existing Table 1.4.1, with the existing NOTE, but without the introductory text and without the entry for Class 7.]

1.4.4.1.3 For dangerous goods of Class 7, high consequence radioactive material is that with an activity equal to or greater than a transport security threshold of 3000 A2 per single package (see also 2.7.2.2.1) except for the following radionuclides where the transport security threshold is given in Table 1.4.2 below.

Table 1.4.2

Transport security thresholds for specific radionuclides

Element	*Radionuclide*	*Transport security threshold (TBq)*
Americium	Am-241	0.6
Gold	Au-198	2
Cadmium	Cd-109	200
Californium	Cf-252	0.2
Curium	Cm-244	0.5
Cobalt	Co-57	7
Cobalt	Co-60	0.3
Cesium	Cs-137	1
Iron	Fe-55	8000
Germanium	Ge-68	7
Gadolinium	Gd-153	10
Iridium	Ir-192	0.8
Nickel	Ni-63	600
Paladium	Pd-103	900
Promethium	Pm-147	400
Polonium	Po-210	0.6
Plutonium	Pu-238	0.6
Plutonium	Pu-239	0.6
Radium	Ra-226	0.4
Ruthenium	Ru-106	3
Selenium	Se-75	2
Strontium	Sr-90	10
Thallium	Tl-204	200
Thulium	Tm-170	200
Yterbium	Yb-169	3

1.4.4.1.4 For mixtures of radionuclides, determination of whether or not the transport security threshold has been met or exceeded can be calculated by summing the ratios of activity present for each radionuclide divided by the transport security threshold for that radionuclide. If the sum of the fractions is less than 1, then the radioactivity threshold for the mixture has not been met nor exceeded.

This calculation can be made with the formula:

$$\sum_i \frac{A_i}{T_i} < 1$$

Where:

A_i = activity of radionuclide i that is present in a package (TBq)

T_i = transport security threshold for radionuclide i (TBq).

1.4.4.1.5 When radioactive material possess subsidiary risks of other classes or divisions, the criteria of table 1.4.1 shall also be taken into account (see also 1.5.5.1).

1.4.4.2 ***Specific security provisions for high consequence dangerous goods***

1.4.4.2.1 *[Existing 1.4.3.1, without the last sentence]*

1.4.4.2.2 *Security plans*

1.4.4.2.2.1 Carriers, consignors and others (including infrastructure managers) engaged in the transport of high consequence dangerous goods (see 1.4.3.1) shall adopt, implement and comply with a security plan that addresses at least the elements specified in 1.4.3.2.2.2.

1.4.4.2.2.2 *[Existing 1.4.3.2.2]*

1.4.4.2.2.3 For Class 7, radioactive material consignors shall ensure that security inspections of conveyances are performed prior to shipment and shall ensure that security measures identified in the security plan remain effective during transport.

1.4.4.2.3 *[Existing 1.4.3.2.3 with the following modifications: in footnote 1, replace "IAEACIRC" with "IAEA INFCIRC". In footnote 2, replace "IAEACIRC" with "IAEA INFCIRC" and delete the last sentence]*.".