Contamination

214. *Contamination* shall mean the presence of a radioactive substance on a surface in quantities in excess of 0.4 Bq/cm^2 for beta and gamma emitters and *low toxicity alpha emitters*, or 0.04 Bq/cm^2 for all other alpha emitters.

215. *Non-fixed contamination* shall mean *contamination* that can be removed from a surface during routine conditions of transport.

216. *Fixed contamination* shall mean *contamination* other than *non-fixed contamination*.

Conveyance

217. *Conveyance* shall mean:

(a) For transport by road or rail: any *vehicle*.
(b) For transport by water: any *vessel*, or any hold, compartment, or *defined deck area* of a *vessel*.
(c) For transport by air: any *aircraft*.

Criticality safety index

218. *Criticality safety index* (*CSI*) assigned to a *package*, *overpack* or *freight container* containing *fissile material* shall mean a number that is used to provide control over the accumulation of *packages*, *overpacks* or *freight containers* containing *fissile material*.

Defined deck area

219. *Defined deck area* shall mean the area of the weather deck of a *vessel*, or of a *vehicle* deck of a roll-on/roll-off ship or ferry, that is allocated for the stowage of *radioactive material*.

Design

220. *Design* shall mean the description of *fissile material* excepted under para. 417(f), *special form radioactive material*, *low dispersible radioactive material*, *package* or *packaging* that enables such an item to be fully identified. The description may include specifications, engineering drawings, reports

(c) *Uranium* with a maximum *uranium* enrichment of 5% by mass of 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 para. 570(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 para. 570(d).

(e) *Fissile nuclides* with a total mass not greater than 45 g, either packaged or unpackaged, subject to the limits provided in para. 570(e).

(f) A *fissile material* that meets the requirements of paras 570(b), 606 and 802.

418. 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*.

Uranium hexafluoride

419. Uranium hexafluoride shall be assigned to one of the following UN numbers only:

(a) UN 2977, RADIOACTIVE MATERIAL, URANIUM HEXAFLUORIDE, FISSILE;

(b) UN 2978, RADIOACTIVE MATERIAL, URANIUM HEXAFLUORIDE, non-fissile or fissile-excepted;

(c) UN 3507, URANIUM HEXAFLUORIDE, RADIOACTIVE MATERIAL, EXCEPTED PACKAGE, less than 0.1 kg per package, non-fissile or fissile-excepted.

420. 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.

(ii) The outside of the *package*, where it is impractical to mark an internal surface.

(c) For transport by post, the total activity in each excepted *package* shall not exceed one tenth of the relevant limits specified in column 4 of Table 4.

425. Uranium hexafluoride not exceeding the limits specified in column 4 of Table 4 may be classified under UN 3507 URANIUM HEXAFLUORIDE, RADIOACTIVE MATERIAL, EXCEPTED PACKAGE, 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 paras 420, 424(a) and 424(b) are met.

426. Articles manufactured of *natural uranium*, *depleted uranium* or natural thorium and articles in which the sole *radioactive material* is unirradiated *natural uranium*, unirradiated *depleted uranium* or unirradiated natural thorium may be classified under UN 2909, RADIOACTIVE MATERIAL, EXCEPTED PACKAGE — ARTICLES MANUFACTURED FROM NATURAL URANIUM or DEPLETED URANIUM or NATURAL THORIUM, provided that the outer surface of the *uranium* or thorium is enclosed in an inactive sheath made of metal or some other substantial material.

Additional requirements and controls for transport of empty packagings

427. An empty *packaging* that had previously contained *radioactive material* may be classified under UN 2908, RADIOACTIVE MATERIAL, EXCEPTED PACKAGE — EMPTY PACKAGING, provided that:

(a) It is in a well-maintained condition and securely closed.
(b) The outer surface of any *uranium* or thorium in its structure is covered with an inactive sheath made of metal or some other substantial material.
(c) The level of internal *non-fixed contamination* does not exceed 100 times the levels specified in para. 508.
(d) Any labels that may have been displayed on it in conformity with para. 538 are no longer visible.

Classification as Type A package

428. *Packages* containing *radioactive material* may be classified as *Type A packages* provided that the conditions of paras 429 and 430 are met.

429. *Type A packages* shall not contain activities greater than either of the following:

(a) For *special form radioactive material* — A_1;
(b) For all other *radioactive material* — A_2.

430. For mixtures of radionuclides whose identities and respective activities are known, the following condition shall apply to the *radioactive contents* of a *Type A package*:

$$\sum_{\mathrm{i}} \frac{B(\mathrm{i})}{A_1(\mathrm{i})} + \sum_{\mathrm{j}} \frac{C(\mathrm{j})}{A_2(\mathrm{j})} \leq 1$$

where

B(i) is the activity of radionuclide i as *special form radioactive material*;
A_1(i) is the A_1 value for radionuclide i;
C(j) is the activity of radionuclide j as other than *special form radioactive material*;
A_2(j) is the A_2 value for radionuclide j.

Classification as Type B(U), Type B(M) or Type C package

431. *Type B(U)*, *Type B(M)* and *Type C packages* shall be classified in accordance with the *competent authority* certificate of *approval* for the *package* issued by the country of origin of *design.*

432. The contents of a *Type B(U), Type B(M)* or *Type C package* shall be as specified in the certificate of *approval*.

433. *Type B(U)* and *Type B(M) packages*, if transported by air, shall meet the requirements of para. 432 and shall not contain activities greater than the following:

(a) For *low dispersible radioactive material* — as authorized for the *package design* as specified in the certificate of *approval*;
(b) For *special form radioactive material* — $3000A_1$ or 10^5A_2, whichever is the lower;
(c) For all other *radioactive material* — $3000A_2$.

(j) For *fissile material*:
  (i) Shipped under one exception of subparagraphs 417(a)–(f), reference to that para.;
  (ii) Shipped under para. 417(c)–(e), the total mass of *fissile nuclides*;
  (iii) Contained in a *package* for which one of para. 674(a)–(c) or 675 is applied, reference to that para.;
  (iv) The *CSI*, where applicable.

(k) The identification mark for each *competent authority* certificate of *approval* (*special form radioactive material*, *low dispersible radioactive material*, *fissile material* excepted under para. 417(f), *special arrangement*, *package design* or *shipment*) applicable to the *consignment*.

(l) For *consignments* of more than one *package*, the information contained in para. 546(a)–(k) shall be given for each *package*. For *packages* in an *overpack*, *freight container* or *conveyance*, a detailed statement of the contents of each *package* within the *overpack*, *freight container* or *conveyance* and, where appropriate, of each *overpack*, *freight container* or *conveyance* shall be included. If *packages* are to be removed from the *overpack*, *freight container* or *conveyance* at a point of intermediate unloading, appropriate transport documents shall be made available.

(m) Where a *consignment* is required to be shipped under *exclusive use*, the statement "EXCLUSIVE USE SHIPMENT".

(n) For *LSA-II, LSA-III*, *SCO-I* and *SCO-II,* the total activity of the *consignment* as a multiple of A_2. For *radioactive material* for which the A_2 value is unlimited, the multiple of A_2 shall be zero.

Consignor's certification or declaration

547. The *consignor* shall include in the transport documents a certification or declaration in the following terms:

> "I hereby declare that the contents of this consignment are fully and accurately described above by the proper shipping name and are classified, packaged, marked and labelled/placarded, and are in all respects in proper condition for transport in accordance with the applicable international and national governmental regulations."

548. If the intent of the declaration is already a condition of transport within a particular international convention, the *consignor* need not provide such a declaration for that part of the transport covered by the convention.

Section VII

TEST PROCEDURES

DEMONSTRATION OF COMPLIANCE

701. Demonstration of compliance with the performance standards required in Section VI shall be accomplished by any of the following methods listed below or by a combination thereof:

(a) Performance of tests with specimens representing *LSA-III material*, or *special form radioactive material*, or *low dispersible radioactive material*, or with prototypes or samples of the *packaging*, where the contents of the specimen or the *packaging* for the tests shall simulate as closely as practicable the expected range of *radioactive contents* and the specimen or *packaging* to be tested shall be prepared as presented for transport.
(b) Reference to previous satisfactory demonstrations of a sufficiently similar nature.
(c) Performance of tests with models of appropriate scale, incorporating those features that are significant with respect to the item under investigation when engineering experience has shown the results of such tests to be suitable for *design* purposes. When a scale model is used, the need for adjusting certain test parameters, such as penetrator diameter or compressive load, shall be taken into account.
(d) Calculation, or reasoned argument, when the calculation procedures and parameters are generally agreed to be reliable or conservative.

702. After the specimen, prototype or sample has been subjected to the tests, appropriate methods of assessment shall be used to ensure that the requirements of this section have been fulfilled in compliance with the performance and acceptance standards prescribed in Section VI.

LEACHING TEST FOR LSA-III MATERIAL AND LOW DISPERSIBLE RADIOACTIVE MATERIAL

703. A solid material sample representing the entire contents of the *package* shall be immersed for 7 days in water at ambient temperature. The volume of water to be used in the test shall be sufficient to ensure that at the end of the 7 day test period, the free volume of the unabsorbed and unreacted water remaining

(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 para. 306;
(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 para. 606.

Certificates of approval for special arrangement

836. Each certificate of *approval* issued by a *competent authority* for a *special arrangement* shall include the following information:

(a) Type of certificate.
(b) The *competent authority* identification mark.
(c) The issue date and an expiry date.
(d) Mode(s) of transport.
(e) Any restrictions on the modes of transport, type of *conveyance*, *freight container* and any necessary routeing instructions.
(f) List of applicable national and international regulations, including the edition of the IAEA Regulations for the Safe Transport of Radioactive Material under which the *special arrangement* is approved.
(g) The following statement: "This certificate does not relieve the consignor from compliance with any requirement of the government of any country through or into which the package will be transported".
(h) References to certificates for alternative *radioactive contents*, other *competent authority* validation, or additional technical data or information, as deemed appropriate by the *competent authority.*
(i) Description of the *packaging* by reference to the drawings or a specification of the *design*. If deemed appropriate by the *competent authority*, a reproducible illustration not larger than 21 cm × 30 cm, showing the make-up of the *package*, should also be provided, accompanied by a brief description of the *packaging*, including materials of manufacture, gross mass, general external dimensions and appearance.

Certificates of approval for shipments

837. Each certificate of *approval* for a *shipment* issued by a *competent authority* shall include the following information:

(a) Type of certificate.
(b) The *competent authority* identification mark(s).
(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 *shipment* is approved.
(e) Any restrictions on the modes of transport, type of *conveyance*, *freight container* and any necessary routeing instructions.
(f) The following statement: "This certificate does not relieve the consignor from compliance with any requirement of the government of any country through or into which the package will be transported".
(g) A detailed listing of any supplementary operational controls required for preparation, loading, carriage, unloading and handling of the *consignment*, including any special stowage provisions for the safe dissipation of heat or maintenance of criticality safety.
(h) Reference to information provided by the applicant relating to specific actions to be taken prior to *shipment*.
(i) Reference to the applicable certificate(s) of *approval* of *design*.
(j) A specification of the actual *radioactive contents*, including any restrictions on the *radioactive contents* that might not be obvious from the nature of the *packaging*. This shall include the physical and chemical forms, the total activities involved (including those of the various isotopes, if appropriate), mass in grams (for *fissile material* or for each *fissile nuclide*, when appropriate) and whether *special form radioactive material*, *low dispersible radioactive material* or *fissile material* excepted under para. 417(f), if applicable.
(k) Any emergency arrangements deemed necessary by the *competent authority*.
(l) A specification of the applicable *management system*, as required in para. 306.
(m) If deemed appropriate by the *competent authority*, reference to the identity of the applicant.
(n) Signature and identification of the certifying official.

ANNEX I: SUMMARY OF APPROVAL AND PRIOR NOTIFICATION REQUIREMENTS (Part 4)

Key paragraphs in the Regulations	Class of *package* or material	*Competent authority approval* required		*Consignor* required to notify country of origin and countries en route[a] of each *shipment*
		Country of origin	Countries en route[a]	
	Special form radioactive material			
803	— Design	Yes	No	No
825	— Shipment	(see Note 1)	(see Note 1)	(see Note 1)
	Low dispersible radioactive material			
803	— Design	Yes	Yes	No
825	— Shipment	(see Note 1)	(see Note 1)	(see Note 1)
	Special arrangement			
558, 802, 829	— Shipment	Yes	Yes	Yes
	Type B (U) packages for which *design* is approved under			
820	— 1973 Regulations	Yes	Yes	(see Note 2)
820	— 1985 Regulations	Yes	Yes	(see Note 2)
805	*Fissile material* excepted from "FISSILE" classification, in accordance with para. 606	Yes	Yes	No
817	Exempt *consignment* of instruments or articles	Yes	Yes	No

[a] Countries *through or into* which (but not over which) the *consignment* is transported (see para. 204 of the Regulations).

Note 1: See *approval* and prior notification requirements for applicable *package*.

Note 2: Before the first *shipment* of any *package* requiring *competent authority approval* of the *design*, the *consignor* shall ensure that a copy of the certificate of *approval* for that *design* has been submitted to the *competent authority* of each country (see para. 557 of the Regulations).

CONTRIBUTORS TO DRAFTING AND REVIEW (2012)

Aceña Moreno, V.	Consejo de Seguridad Nuclear, Spain
Alter, U.	Federal Ministry for the Environment, Germany
Anikin, A.	Federal Environmental, Industrial and Nuclear Supervision Service of Russia, Russian Federation
Ardouin, C.	National Radiation Laboratory, New Zealand
Ashour Al-Jeidi, J.	Libya
Askitoglu, E.	Swiss Federal Nuclear Safety Inspectorate, Switzerland
Barlow, I.	Department for Transport, United Kingdom
Barto, A.	Nuclear Regulatory Commission, United States of America
Barton, N.	Department for Transport, United Kingdom
Belamaric, N.	State Office of Radiation Protection, Croatia
Binet, J.	European Commission
Blahova, V.	State Office for Nuclear Safety, Czech Republic
Börst, F.	Bundesamt für Strahlenschutz, Germany
Bove, R.	ENEA/FPN, Italy
Boyle, R.	US Department of Transportation, United States of America
Brach, E.	Nuclear Regulatory Commission, United States of America
Brennan, D.	International Air Transport Association
Buchelnikov, A.	State Atomic Energy Corporation, Russian Federation
Busitta, M.A.	Atomic Energy Establishment, Libya
Buxo da Trindade, R.	UPSR/ITN, Portugal
Cabianca, T.	Health Protection Agency, United Kingdom

Capadona, N.	Autoridad Regulatoria Nuclear, Argentina
Carenini, L.	IRSN, France
Charette, M.	CAMECO, Canada
Cho, D.	Korea Institute of Nuclear Safety, Republic of Korea
Conroy, M.	US Department of Transportation, United States of America
Cook, J.	Nuclear Regulatory Commission, United States of America
Cottens, E.	Federal Agency for Nuclear Control, Belgium
Crook, P.	Department for Transport, United Kingdom
Darby, S.	World Nuclear Transport Institute
Dekker, B.	World Nuclear Transport Institute
Desnoyers, B.	World Nuclear Transport Institute
Droste, B.	Bundesanstalt für Materialforschung und -prüfung, Germany
Duchacek, V.	State Office for Nuclear Safety, Czech Republic
Duffy, J.	Radiological Protection Institute of Ireland, Ireland
Dziubiak, T.	National Atomic Energy Agency, Poland
Edgecombe, R.	Nordion Inc., Canada
Elkikly, A.E.	Libya
El-Shinawy, R.	Atomic Energy Authority, Egypt
Enriquez Marchal, C.	Empresa Nacional de Residuos Radiactivos S.A., Spain
Ershov, V.	State Corporation on Atomic Energy, Russian Federation
Ertürk, K.	Turkish Atomic Energy Authority, Turkey
Eshragi, A.	Atomic Energy Organization of Iran, Islamic Republic of Iran

Faille, S.	Canadian Nuclear Safety Commission, Canada
Faludi, R.	European Lamp Companies Federation
Fasten, C.	Bundesamt für Strahlenschutz, Germany
Fierbintu, T.	National Commission for Nuclear Activities Control, Romania
Fulford, G.	Nordion Inc., Canada
Fuller, J.	Department for Transport, United Kingdom
Garg, R.	Canadian Nuclear Safety Commission, Canada
Gessl, M.	International Federation of Air Pilots' Associations
Getrey, C.	IRSN, France
Girkens, P.	Federal Ministry of Transport, Building and Urban Affairs, Germany
Glenn, K.	Canadian Nuclear Safety Commission, Canada
Gorlin, S.	World Nuclear Association
Gozalo, L.	ASN/DIT, France
Gullö, J.	Swedish Civil Contingencies Agency, Sweden
Hajizadeh, B.	Atomic Energy Organization of Iran, Islamic Republic of Iran
Hanaki, I.	Nuclear and Industrial Safety Agency, Japan
Hellsten, S.	Radiation and Nuclear Safety Authority, Finland
Herrati, A.	Centre de recherche nucléaire d'Alger, Algeria
Hesius, M.	Federal Agency for Nuclear Control, Belgium
Hinrichsen, P.	National Nuclear Regulator, South Africa
Hirose, M.	World Nuclear Transport Institute
Hishida, M.	Japan Nuclear Energy Safety Organization, Japan
Hornkjøl, S.	Norwegian Radiation Protection Authority, Norway

Hughes, S.	Health Protection Agency, United Kingdom
Hursthouse, J.	Department for Transport, United Kingdom
Ikoma, Y.	Secretariat of the Nuclear Safety Commission, Japan
Ilijas, B.	State Office for Radiological and Nuclear Safety, Croatia
Ito, D.	World Nuclear Transport Institute
Itoh, C.	Central Research Institute of Electric Power Industry, Japan
Iwasa, T.	Ministry of Education, Culture, Sports, Science & Technology, Japan
Jacob, E.	DSND/ASND, France
Jutier, L.	IRSN/DSU, France
Kapoor, A.	US Department of Energy, United States of America
Katona, T.	Hungarian Academy of Sciences, Hungary
Kavanagh, J.	Nordion Inc., Canada
Kekli, A.	Renewable Energies and Water Desalination Research Center, Libya
Kent, N.	World Nuclear Transport Institute
Kervella, O.	United Nations Economic Commission for Europe
Kirchnawy, F.	Federal Ministry for Transport, Innovation and Technology, Austria
Koch, F.	Swiss Federal Nuclear Safety Inspectorate, Switzerland
Kojima, S.	Nuclear and Industrial Safety Agency, Japan
Komann, S.	Bundesanstalt für Materialforschung und -prüfung, Germany
Konnai, A.	National Maritime Research Institute, Japan
Korbmacher, T.	World Nuclear Transport Institute

Krzaniak, M.	Nordion Inc., Canada
Kueny, L.	Autorité de sûreté nucléaire, France
Lahkola, A.	Radiation and Nuclear Safety Authority, Finland
Lamarche, D.	Transport Canada, Canada
Landier, D.	Autorité de sûreté nucléaire, France
Leblanc, V.	Federal Agency for Nuclear Control, Belgium
Li, X.	CNNC Everclean Co. Ltd., China
Lizot, M.	ASN/DIT, France
Lopez Vietri, J.	Autoridad Regulatoria Nuclear, Argentina
Lourtie, G.	Federal Agency for Nuclear Control, Belgium
Malesys, P.	International Organization for Standardization
Marzo, G.	ENEA, Italy
McGhee, S.	Nordion Inc., Canada
Mennerdahl, D.	E. Mennerdahl Systems, Sweden
Miller, J.	International Source Suppliers and Producers Association
Mirfakhraei, P.	Canadian Nuclear Safety Commission, Canada
Mochizuki, H.	National Maritime Research Institute, Japan
Mohajane, E.	South Africa
Mohd Sobari, M.	Atomic Energy Licensing Board, Malaysia
Mosoeunyane, S.	National Nuclear Regulator, South Africa
Muneer, M.	Pakistan Nuclear Regulatory Authority, Pakistan
Nada, A.	Egyptian Atomic Energy Authority, Egypt
Neau, H.	World Nuclear Transport Institute
Neuman, I.	EU.select GmbH, Belgium

Nitsche, F.	Bundesamt für Strahlenschutz, Germany
O Connor, G.	Department for Transport, United Kingdom
O'Connor, S.	US Department of Energy, United States of America
Odano, N.	National Maritime Research Institute, Japan
Olma, R.	EU.select GmbH, Belgium
Ordaz, V.	Nuclear Regulatory Commission, United States of America
Orsini, A.	ENEA, Italy
Ortiz de Echevarria Diez, I.	IRSN/DSU, France
Oue, K.	Nuclear and Industrial Safety Agency, Japan
Owen, G.	International Nuclear Services, United Kingdom
Oyinloye, J.	Department for Transport, United Kingdom
Parks, C.	Oak Ridge National Laboratory, United States of America
Patasius, Z.	State Nuclear Power Safety Inspectorate, Lithuania
Patko, A.	NAC International, United States of America
Pecnik, M.	State Office of Radiation Protection, Croatia
Rahim, I.	International Maritime Organization
Rashid, M.	Pakistan Nuclear Regulatory Authority, Pakistan
Reculeau, J.	ASND/DSND, France
Reiche, I.	Bundesamt für Strahlenschutz, Germany
Richartz, M.	Bundesministerium für Umwelt, Naturschutz und Reaktorsicherheit, Germany
Roelofsen, E.	Covidien, Netherlands
Rooney, K.	International Civil Aviation Organization
Rossi, L.	European Commission

Rubio de Juan, E.	Consejo de Seguridad Nuclear, Spain
Safar, J.	Hungarian Atomic Energy Authority, Hungary
Sallit, G.	Department for Transport, United Kingdom
Sampson, M.	Nuclear Regulatory Commission, United States of America
Sannen, H.	Belgium
Sarkar, S.	Australian Radiation Protection and Nuclear Safety Agency, Australia
Sauron, C.	Autorité de sûreté nucléaire, France
Savic, N.	BMVIT, Austria
Schwela, U.	Tantalum–Niobium International Study Center
Sekse, T.	Norwegian Radiation Protection Authority, Norway
Sen, A.	Department for Transport, United Kingdom
Sert, G.	IRSN/DSU, France
Shukri, T.	Resident Representative of KACST, Saudi Arabia
Singh, K.	Atomic Energy Regulatory Board, India
Smith, J.	Nuclear Regulatory Commission, United States of America
Statkus, V.	Radiation Protection Center, Lithuania
Stroem, K.	Swedish Civil Contingencies Agency, Sweden
Svahn, B.	Swedish Radiation Safety Authority, Sweden
Svein-Erik, C.	Norwegian Radiation Protection Authority, Norway
Takani, M.	World Nuclear Transport Institute
Taniuchi, H.	Transnuclear Ltd., Japan
Ter Morshuizen, M.	Ministry of Housing, Spatial Planning and the Environment, Netherlands

Tezuka, H.	Japan Nuclear Energy Safety Organization, Japan
Tikkinen, J.	Radiation and Nuclear Safety Authority, Finland
Trivelloni, S.	Agency for Environmental Protection and Technical Services, Italy
Turner, M.	Department for Transport, United Kingdom
Twala, V.	ESKOM, South Africa
van Aarle, J.	Nordostschweizerische Kraftwerke AG, Switzerland
Van de Put, F.	European Lamp Companies Federation
Vince, D.	Department for Transport, United Kingdom
Vogiatzi, S.	Greek Atomic Energy Commission, Greece
Welleman, E.	Swedish Radiation Safety Authority, Sweden
Whittingham, S.	Department for Transport, United Kingdom
Wille, F.	Bundesanstalt für Materialforschung und -prüfung, Germany
Wortmann, G.	International Source Suppliers and Producers Association
Xavier, A.	National Nuclear Energy Commission, Brazil
Yamaguchi, M.	Japan Nuclear Energy Safety Organization, Japan
Yamanaka, T.	Japan Nuclear Energy Safety Organization, Japan
Yamasaki, A.	Nippon Kaiji Kentei Kyokai, Japan
Yamauchi, T.	Nuclear and Industrial Safety Agency, Japan
Young, C.	Consultant, United Kingdom
Zamora Martín, F.	Consejo de Seguridad Nuclear, Spain
Zika, H.	Swedish Radiation Safety Authority, Sweden

Numerous other participants in Member States took part in the review and revision of this publication. Their invaluable contributions to the process is recognized.

BODIES FOR THE ENDORSEMENT OF IAEA SAFETY STANDARDS

An asterisk denotes a corresponding member. Corresponding members receive drafts for comment and other documentation but they do not generally participate in meetings. Two asterisks denote an alternate.

Commission on Safety Standards

Argentina: González, A.J.; *Australia*: Larsson, C.-M.; *Belgium*: Samain, J.-P.; *Brazil*: Salati de Almeida, I.P.; *Canada*: Jammal, R.; *China*: Jun Yu; *Czech Republic*: Drábová, D. (Chairperson); *Finland*: Reiman, L.; *France*: Lacoste, A.-C.; *Germany*: Vorwerk, A.; *India*: Bajaj, S.S.; *Israel*: Markovits, M.; *Japan*: Nakamura, K.; *Korea, Republic of*: Yun, C.-H.; *Lithuania*: Demčenko, M.; *Malaysia*: Raja Adnan, R.; *Morocco*: Soufi, I.; *Pakistan*: Habib, M.A.; *Russian Federation*: Bezzubtsev, V.S.; *South Africa*: Phillips, C.O.; *Spain*: Gurguí Ferrer, A.; *Sweden*: Lund, I.; *United Arab Emirates*: Travers, W.; *United Kingdom*: Weightman, M.; *United States of America*: Weber, M.; *IAEA*: Delattre, D. (Coordinator); *Advisory Group on Nuclear Security*: Raja Adnan, A.; *European Commission*: Faross, P.; *International Commission on Radiological Protection*: Cousins, C.; *International Nuclear Safety Group*: Meserve, R.; *OECD Nuclear Energy Agency*: Yoshimura, U.; *Safety Standards Committee Chairpersons*: Feron, F. (NUSSC); Massera, G. (RASSC); Brach, E.W. (TRANSSC); Williams, G. (WASSC).

Nuclear Safety Standards Committee

**Algeria*: Merrouche, D.; *Argentina*: Waldman, R.; *Australia*: Ward, J.; *Austria*: Sholly, S.; *Belgium*: De Boeck, B.; *Brazil*: Gromann, A.; **Bulgaria*: Vlahov, N.; *Canada*: Rzentkowski, G.; *China*: Li, Jingxi; *Croatia*: Medakovič, S.; **Cyprus*: Demetriades, P.; *Czech Republic*: Vesely, J.; *Egypt*: Ibrahim, M.; *Finland*: Järvinen, M.-L.; *France*: Feron, F. (Chairperson); *Germany*: Weidenbrück, K.; **Greece*: Nikolaou, G.; *Hungary*: Adorján, F.; *India*: Vaze, K.; **Indonesia*: Antariksawan, A.; *Iran, Islamic Republic of*: Mataji Kojouri, N.; *Israel*: Harari, R.; *Italy*: Matteocci, L.; *Japan*: Maki, S.; *Korea, Republic of*: Lee, S.; *Libya:* Abulagassem, O.; *Lithuania*: Šlepavičius, S.; *Malaysia*: Azlina Mohammed Jais; *Mexico*: Carrera, A.; *Morocco*: Soufi, I.; *Pakistan*: Mansoor, F.; *Panama*: Gibbs, E.; *Poland*: Kielbasa, W.; *Romania*: Ciurea-Ercau, C.; *Russian Federation*: Stroganov, A.; *Slovakia*: