

Packaging and Transport of Radioactive Material Regulations, 2011

G.N No. 368 (contd.)

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THE ATOMIC ENERGY ACT
(CAP. 188)

REGULATIONS

THE PACKAGING AND TRANSPORT OF RADIOACTIVE MATERIAL REGULATIONS,
2011

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THE ATOMIC ENERGY ACT
(CAP. 188)

REGULATIONS

(Made under Section 70)

THE PACKAGING AND TRANSPORT OF RADIOACTIVE MATERIAL REGULATIONS, 2011

PART I
PRELIMINARY

1. These Regulations may be cited as the Packaging and Transport of Radioactive Material Regulations, 2011. Citation

2.-(1) These Regulation shall apply to the packaging and transport of radioactive material, design, production, use, inspection, maintenance and repair of packages, the preparation, consigning, handling, loading, carriage, storage during transport, receipt at final destination, unloading of packages. Applica-
tion

(2) These Regulations shall not apply to packages, packing and from sport of nuclear substance.

- (a) that is implanted in or incorporated into a person or an animal for medical purposes, or that subsists in the remains of a person;
- (b) that is contained in a sample of material taken for biossay purposes;
- (c) that is contained in human or animal tissue or animal remains, or a liquid scintillation medium, where the specific activity of the nuclear substance averaged over the mass of the material does not exceed 10^{-6} A2/kg;
- (d) that is contained in consumer products where no licence is required under section 21 of the Act;
- (e) that is an integral part of a conveyance and required for transport purposes;
- (f) having an activity concentration that does not exceed the values

for an exempt material specified in paragraphs 401 to 406 of the *IAEA Regulations*;

- (g) in a consignment having a total activity that does not exceed the "activity limit for an exempt consignment" specified in paragraphs 401 to 406 of the *IAEA Regulations*; or
- (h) consisting of natural material and ores containing naturally-occurring radionuclides that either are in their natural state, or have been processed only for purposes other than for extraction of those radionuclides, and that is not intended to be processed for use of those radionuclides, provided the activity concentration of the material does not exceed 10 times the "activity concentration for an exempt material" values specified in paragraphs 401 to 406 of the *IAEA Regulations*;

Interpre-
tation

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3. In these Regulations unless the context otherwise requires-
"A1" and "A2" has a meaning ascribed to it under paragraph 201 of the *IAEA Regulations*;
- "Act" means the *Atomic Energy Act*;
- "activity" means the number of nuclear transformations occurring per unit of time as measured in becquerels;
- "carrier" mean a person, an organization or government undertaking the carriage of *radioactive material* by any means of transport and it includes carriers for hire or reward and carriers on own account;
- "certificate" means a document issued by the Commission indicating that a package design, a design for special form radioactive materials or a design for low dispersible radioactive material is certified;
- "commission" means the Tanzania Atomic Energy Commission established under section 5 of the Act;
- "confinement system" means the assembly of fissile material and packaging components intended to preserve criticality safety;
- "consignee" means a person who receives a consignment or a person to whom a consignment is being or is intended to be transported;
- "consignment" has the meaning ascribed to it under paragraph 211 of the *IAEA Regulations*;
- "consignor" has the meaning assigned to that term by paragraph 212 of the *IAEA Regulations*;

- “containment system” has the meaning ascribed to it under 213 of the *IAEA Regulations*;
- “contamination” has the meaning ascribed to it under paragraph 214 of the *IAEA Regulations*;
- “conveyance” has the meaning ascribed to it under paragraph 217 of the *IAEA Regulations*;
- “criticality safety index” has the meaning ascribed to it under paragraph 218 of the *IAEA Regulations*;
- “depleted uranium” has the meaning ascribed to it under paragraph 246 of the *IAEA Regulations*;
- “effective dose” has the meaning ascribed to it under section 2(1) of the *Act*;
- “equivalent dose” has the meaning ascribed to it under section 2(1) of the *Act*;
- “excepted package” means a package that meets the requirements of paragraph 515 of the *IAEA Regulations*;
- “Exclusive use” has the meaning ascribed to it under paragraph 221 of the *IAEA Regulations*;
- “exposure device” means a radiation device that is designed for carrying out gamma radiography, and includes any accessory to the device such as a sealed source assembly, a drive mechanism, a sealed source assembly guide tube and an exposure head;
- “fissile material” has the meaning ascribed to it under paragraph 222 of the *IAEA Regulations*;
- “IAEA” means the International Atomic Energy Agency;
- “*IAEA Regulations*” means the *Regulation for the Safe Transport of Radioactive Material* 2005 edition published by the International Atomic Energy Agency;
- “International Maritime Dangerous Goods Code” means the dangerous goods code published by the International Maritime Organization, as amended from time to time;
- “licensed activity” means an activity described in section 11(1) of the *Act* that a licence authorizes the licensee to carry;
- “low dispersible radioactive material” means material described in paragraph 225 of the *IAEA Regulations* that conforms to paragraphs 605 and 712 of those Regulations;”
- “LSA-I material” means;

- (a) ores containing naturally occurring radionuclides with a uranium and thorium concentration not greater than two per cent by mass;
- (b) radioactive material for which the A2 value is unlimited, excluding fissile material in quantities not excepted under paragraph 672 of the *IAEA Regulations* and ores that are not described in paragraph (a);
- (c) unirradiated thorium or unirradiated natural or depleted uranium concentrates;
- (d) mill tailings, contaminated earth, concrete, rubble, other debris and activated materials in which the radioactive materials is essentially uniformly distributed and the average specific activity does not exceed 10^{-6} A2/g; or
- (e) other radioactive material in which the activity is distributed throughout and the estimated specific activity does not exceed 30 times the values for activity concentration specified in paragraphs 401 to 406 of the *IAEA Regulations*, excluding fissile material in quantities not excepted under paragraph 672 of those Regulations;

“LSA-II material” means

- (a) less than 225 litres of water with a tritium concentration not greater than 0.8 TBq/L; or
- (b) material in which the activity is distributed throughout and the estimated average specific activity does not exceed 10^{-4} A2/g for solids and gases, and 10^{-5} A2/g for liquids;

“LSA-III material” means material described in paragraph 226(c) of the *IAEA Regulations* that conforms to paragraph 601 of those Regulations;

“natural uranium” has the ascribed to it under paragraph 246 of the *IAEA Regulations*;

“package” means packaging with its radioactive contents, as presented for transport;

“packaging” has the meaning assigned to that term by paragraph 231 of the *IAEA Regulations*;

“quality assurance” has the meaning ascribed to it under paragraph 232 of the *IAEA Regulations*;

“quality assurance program” mean a systematic programme of controls and inspections applied by any organization or body involved in the transport of nuclear substances which is aimed at providing adequate

confidence that the standard of safety prescribed in these Regulations is achieved in practice;

“radioactive material” means a nuclear substance that is a material described in paragraph 236 of the *IAEA Regulations*;

“radon progeny” means the following radioactive decay products of radon 222: bismuth 214, lead 214, polonium 214 and polonium 218;

“user” has the meaning assigned to that term by section 2(1) of the Act;

“SCO-I” means a surface contaminated object as defined in paragraph 241(a) of the *IAEA Regulations*;

“SCO-II” means a surface contaminated object, as defined in paragraph 241(b) of the *IAEA Regulations*;

“special arrangement” has the meaning ascribed to it under paragraph 238 of the *IAEA Regulations*;

“special form radioactive material” means a material described in paragraph 239 of the *IAEA Regulations* that conforms to paragraphs 602 to 604 of those Regulations;

“specific activity” has the ascribed to it under paragraph 240 of the *IAEA Regulations*;

“Technical Instructions for the safe Transport of Dangerous Goods by Air” means the document of that name, designated as Doc 9284-AN/905, published by the International Civil Aviation Organization, as amended from time to time;

“transit” means the process of being transported through the Tanzania after being imported into and before being exported from Tanzania, in a situation where the place of initial loading and the final destination are outside Tanzania;

“transport index” has the meaning ascribed to it under paragraph 243 of the *IAEA Regulations*;

“type A package” means a package that is designed to meet the requirements of paragraph 413, 414 and 633 of the *IAEA Regulations*;

“type B package” means a package that is designed to meet the requirements of paragraph 415 or 416 and paragraph 650 or 665 of the *IAEA Regulations*;

“type C package” means a package that is designed to meet the requirements of paragraphs 417 and 667 of the *IAEA Regulations*;

“type H(M) package” means an excepted package, type IP-1 package, type IP-2 package, type IP-3 package that meet the requirements of paragraph 632 of the *IAEA Regulations* and contains more than 0.1

- kg of uranium hexafluoride material that is not fissile material;
- “type H(U) package” means an excepted package, type IP-1 package, type IP-2 package, type IP-3 package or type A package that meets requirements of paragraph 629 of the *IAEA Regulations* and contains more than 0.1 kg of uranium hexafluoride material that is not fissile material;
- “type IP-1 package” means a package that is designed to meet the requirements of paragraph 411 and 621 of the *IAEA Regulations*;
- “type IP-2 package” means a package that is designed to meet the requirements of paragraphs 411 and 412 of the *IAEA Regulations* and-
- (a) paragraph 622 of those Regulations; or
- (b) the requirement for a type IP-2 package in paragraphs 624 to 628 of those Regulations.
- “type IP-3 package” means a package that is designed to meet the requirements of paragraphs 411 and 412 of the *IAEA Regulations* and-
- (a) paragraph 623 of those Regulations; or
- (b) the requirements for a Type IP-3 package in paragraphs 625 to 628 of those Regulations.
- “unirradiated thorium” has the meaning assigned to that term by paragraph 244 of the *IAEA Regulations*;
- “unirradiated uranium” has the meaning assigned to that term by paragraph 245 of the *IAEA Regulations*;

PART II

APPLICATIONS FOR LICENCE

licence to transport category I, II or III of nuclear material

4.-(1) An application for a licence to transport Category I, II, or III nuclear material as defined in section 5.2 of the *Physical Protection of Nuclear Material and Nuclear Facilities*, other than a license to transport while in transit or a license to transport under special arrangement, shall be made to the Commission and it shall contain the following information;

- (a) the applicant's name and business address;
- (b) the activity to be licensed and its purpose;

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- (c) the name, maximum quantity and form of nuclear substance to be encompassed by the licence;
 - (d) a description of any nuclear facility, prescribed equipment or prescribed information to be encompassed by the licence;
 - (e) the proposed measures to ensure compliance with the *Atomic Energy (Protection from Ionizing Radiation) Regulations, GN No. 209, 2004*;
 - (f) the proposed measures to control access to the site of the activity to be licensed and the nuclear substance, prescribed equipment or prescribed information;
 - (g) the proposed measures to prevent loss or illegal use, possession or removal of the nuclear substance, prescribed equipment or prescribed information;
 - (h) a description and the results of any test, analysis or calculation performed to substantiate the information included in the application;
 - (i) the name, quantity, form, origin and volume of any radioactive waste or hazardous waste that may result from the activity to be licensed, including waste that may be stored, managed, processed or disposed of at the site of the activity to be licensed, and the proposed method for managing and disposing of that waste;
 - (j) the applicant's organizational management structure insofar as it may bear on the applicant's compliance with the Act and the regulations made under the Act, including the internal allocation of functions, responsibilities and authority;
 - (k) a description of any proposed financial guarantee relating to the activity to be licensed; and
 - (l) any other information required by the Act or the regulations made under the Act for the activity to be licensed and the nuclear substance, nuclear facility, prescribed equipment or prescribed information to be encompassed by the licence.
- (2) The Commission, may require any other information that is necessary to determine whether the applicant;

- (a) is qualified to carry on the activity to be licensed; or
- (b) will in carrying on that activity, make adequate provision for the protection of the environment, the health and safety of persons and the maintenance of national security and measures required to implement international obligations to which Tanzania has agreed.

(3) An application for a license to transport Category I, II, or III nuclear material shall contain, in addition to any other information required by subregulation 1 of regulation 4 and 5 of these regulations, a written transportation security plan includes:

- (a) the name, quantity, radiation level in Gy/h, chemical and physical characteristics and isotopic composition of the nuclear material;
- (b) a threat assessment consisting of an evaluation of the nature, likelihood and consequences of acts or events that may place prescribed information or nuclear material at risk;
- (c) a description of the conveyance;
- (d) the proposed security measures;
- (e) the communication arrangements made among the licensee, the operator of the land vehicle transporting the nuclear material, the recipient of the material and any off-site response force along the route;
- (f) the arrangements made between the licensee and any off-site response force along the route;
- (g) the planned route; and
- (h) the alternate route to be used in case of an emergency.

Licence
to
transport
while in
transit

5. An application for a licence to transport a nuclear substance while in transit shall be made to the Commission and shall contain the following information:-

- (a) the name, address and telephone number of the consignor; a description of the nuclear substance, including the name, the chemical and physical form, the activity or in the case of

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fissile material, the mass of each nuclear substance in a package and the total quantity of the activity or mass in the consignment;

- (b) the country of origin of the nuclear substance;
- (c) the name and address of each consignee;
- (d) the reason for selecting a route through Tanzania;
- (e) the name of every carrier;
- (f) the route and schedule;
- (g) the dates times and locations of arrival into and departure from Tanzania;
- (h) the date time and location of any scheduled stop or transshipment in Tanzania;
- (i) where the nuclear substance is required to be transported in a package of a certified design or in a package that has been approved as Type B(U)-96, Type C-96 or H(U)-96 by a foreign competent authority in accordance with the applicable process specified in the *IAEA Regulations*, the number of the certificate or approval applicable to the package;
- (j) the number of packages that are to be transported;
- (k) the type of conveyance to be used during transit;
- (l) where a vessel is to be used as a conveyance during transit, the name of the vessel and its flag state;
- (m) for a special use vessel to be used as a conveyance during transit, a document issued by the competent authority of the vessel's flag state approving a radiation protection programme;
- (n) where the nuclear substance is to be transported by sea, the *International Maritime Dangerous Goods Code* transport schedule number for the nuclear substance;
- (o) the United Nations number for the nuclear substance;
- (p) where the nuclear substance is Category I, II or III nuclear material as defined in regulation 4.1 of these regulations, the information required by regulation 3 of these Regulations.

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Licence
to
package
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6. An application for a licence to pack or transport a nuclear substance under special arrangement shall contain, in addition to the information required by regulation 3 of these Regulations, the information specified in paragraph 825 of the *IAEA Regulations*.

Exemp-
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require-
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7.-(1) A person may transport a nuclear substance without a licence to carry on that activity, except in the following cases:

(a) the nuclear substance is Category I, II or III nuclear material, as stated in regulation 4.1 of these regulations and is transported outside an area in which the material is required to be processed, used or stored by the *Act*.

(b) the nuclear substance is 0.1 kg or more of uranium hexafluoride and is transported while in transit;

(c) the nuclear substance is required to be transported in a package of a certified design or in a package that has been approved as Type B(U)-96 Type C-96 or H(U)-96 by a foreign competent authority in accordance with the process specified in the *IAEA Regulations* and is transported while in transit;
or

(d) the nuclear substance is transported under special arrangement.

(2) A person may possess, transfer, import, export, use abandon, produce or service a package, special form radioactive material or low dispersible radioactive material without a licence to carry on that activity.

(3) A person may package a nuclear substance without a licence to carry on that activity, except if the nuclear substance is required to be transported under a special arrangement;

(4) For greater certainty, the exemptions established in sub-regulations (1) to (3) of this regulation relate only to the activities specified in those sub-regulation and do not derogate from the licence requirement imposed by section 11(1) of the Act in relation to other activities.

PART III
CERTIFICATION OF PACKAGES, SPECIAL FORM RADIOACTIVE MATERIAL
AND LOW DISPERSIBLE RADIOACTIVE MATERIAL

8.-(1) The Commission may certify a package design, a design for special form radioactive material or a design for low dispersible radioactive material after receiving an application that includes the following information: Application for certification

- (a) the information referred to in paragraph 803, 805(b), 807, 810 and 813 of the *IAEA Regulations*, as applicable;
- (b) the number of any approval issued by a foreign competent authority in accordance with the applicable process specified in the *IAEA Regulations*;
- (c) in respect of a package design;
 - (i) the recommended inspection and servicing program, and
 - (ii) instruction for packaging, transport receiving, maintenance and unpackaging; and

at the request of the Commission, any other information that is necessary to enable the Commission to determine if the application for certification meets the requirements of these Regulations.

(2) An applicant shall afford the Commission a reasonable opportunity to observe any test that the applicant conducts to demonstrate compliance of a package design, a design for special form radioactive material or a design for low dispersible radioactive material with these Regulations, including reasonable notice of the date and time of the test.

(3) The Commission may re-certify a design certified under sub-regulation (1) of this regulation if its technical specifications have not changed and the Commission receives an application from the certificate holder no later than 60 days after the expire date of the certificate. The application shall include the following information:

- (a) statement confirming that the drawings and procedures previously submitted have not changed or, if they have

- changed, a copy of the revised drawings and procedures and a statement confirming that the changes are without technical significance and do not affect the safety of the design;
- (b) a statement confirming that each package has been maintained in compliance with the drawings and procedures previously submitted;
 - (c) in respect of a package design, a statement confirming that the instructions previously submitted have not changed;
 - (d) unless previously submitted, the model number and drawings of any capsule containing radioactive material;
 - (e) in respect of a certified package design, other than one referred to in paragraph (f), a list of the serial numbers of packages manufactured and maintained in accordance with the certified package design;
 - (f) in respect of a certified package design that was certified after approval by a foreign competent authority, a list of the serial numbers of all packages currently in use or intended to be used in Tanzania;
 - (g) a list of the known users of the latest certified package design;
 - (h) a summary of the maintenance performed and any operational or maintenance problems encountered with the package, including the date, nature of the maintenance or a problem and any action taken;
 - (i) in respect of a design originating in a foreign country, a copy of each package design approval document or low dispersible radioactive material approval document issued by the foreign competent authority since the last certification;
 - (j) a copy of the documents submitted to the foreign competent authority in order to obtain a package design approval document referred to in paragraph (i); and
 - (k) at the request of the Commission, any other information that is necessary to enable the Commission to determine if the application meets the applicable requirements of these Regulations.

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9.-(1) The commission shall notify a person who has applied for the certification of a package design, a design for special form radioactive material or a design for low dispersible radioactive material of a proposed decision not to certify the design, as well as the basis for the proposed decision, at least thirty days before refusing to certify it.

Refusal to certify

(2) The notice shall include a description of the person's right to be provided with an opportunity to be heard in accordance with the procedure referred to in regulation 11 of these Regulations.

10.-(1) The Commission shall notify a person to whom a certificate for a package design, a design for special form radioactive material or a design for low dispersible radioactive material has been issued and, in the case of a certificate for a package design, any user of a package of that design, of a proposed decision to decertify the design as well as the basis for the proposed decision, at least thirty days before decertifying it.

Decertification

11.-(1) Where a person referred to in regulation 8 or 9 or a user referred to in section 9 has received a notice and has requested, within 30 days after the date of receipt of the notice, an opportunity to be heard either orally or in writing, the person or the user shall be provided with such an opportunity in accordance with the request.

Opportunity to be heard

(2) On completion of a hearing held in accordance with sub-regulation (1), every person and user who was notified in accordance with regulation 8 or 9 of these regulations shall be notified of the decision and the reasons for it.

(3) Where neither a person referred to in regulation 8 or 9 nor a user referred to in regulation 9 requests an opportunity to be heard within the period referred to in sub-regulation (1), they shall be notified of the decision and the reasons for it.

PART IV

PACKAGES SPECIAL FORM RADIOACTIVE MATERIAL. LOW DISPERSIBLE
RADIOACTIVE MATERIAL AND PACKAGING

12.-(1) A person shall not produce a package of a certified design unless that package is produced in accordance with the specifications set out in the certificate.

production of packages

(2) Every person who produces a package of a certified design shall clearly mark the package with the certificate number and design number and serial number;

Production or possession of special form radioactive material and low dispersible radioactive material

13.-(1) A person shall not produce special form radioactive material unless that materials is:-

- (a) of a certified design; and
- (b) produced in accordance with the specifications set out in the certificate.

(2) Every person who produces special form radioactive material shall identify it by making it, or any source holder to which it is permanently attached, in a legible and durable manner.

(3) No person shall possess special form radioactive material unless:

- (a) it is of a certified design; or
- (b) it has been approved by a foreign competent authority in accordance with the applicable process specified in the *IAEA Regulations*.

(4) Every person who produces or possesses special form radioactive material approved under the *IAEA Regulations* shall act in accordance with paragraph 818 of the *IAEA Regulations*.

(5) A person shall not produce low dispersible radioactive material unless the use of the package is registered by the Commission.

- (a) it is of a certified design; and
- (b) it is produced in accordance with the specifications set out in the certificate.

(6) Every person who produces low dispersible radioactive material shall identify it by marking it in a legible and durable manner.

(7) No person shall possess low dispersible radioactive material unless it is of a certified design.

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14. Every person who designs, produces, tests, uses, inspects, maintains or repairs a package, special form radioactive material or low dispersible radioactive material shall:-

Quality assurance program for packages, special form radioactive material and low dispersible radioactive material

- (a) implement and maintain a written quality assurance program in accordance with paragraph 310 of the *IAEA Regulations*;
- (b) keep a record of the program and of any information collected under the program; and

retain the record of information collected under the programme for the period ending two years after the date on which the package is removed from service.

15.-(1) No person shall use a package of a certified design unless they have received confirmation from the Commission that their use of the package has been registered by the Commission.

Registration of use of packages

(2) The Commission shall register a person's use of a package of a certified design after receiving the following information from the person.

- (a) the person's name, address, telephone number and fax number;
- (b) the name of a person who can be contacted for transport purposes;
- (c) the number of any licence that the person holds in respect of the contents of the package;
- (d) the number of any approval issued by a foreign competent authority in accordance with the applicable process specified in the *IAEA Regulations*;
- (e) the design number and serial number for the package; and

a statement confirming that the person possesses the instructions necessary to prepare the package for shipment, as set out in the certificate for the package design.

PART V

PACKAGING AND TRANSPORT OF RADIOACTIVE MATERIAL

General obligations

16.-(1) Every person who transports, or cause to be transported, radioactive material shall act accordance with the requirements of these Regulations.

(2) Every consignor, other than a consignor of an excepted package, shall act in accordance with paragraphs 550 to 561 of the *IAEA Regulations*.

(3) Every consignor of an excepted package shall act in accordance with paragraph 554 of the *IAEA Regulations*.

(4) Every consignor of radioactive material shall advise the consignee that the material is going to be transported.

(5) Every carrier of radioactive material shall act in accordance with paragraphs 562 to 569 and 571 to 580 of the *IAEA Regulations*.

(6) Every carrier of radioactive material shall transport the material in accordance with the consignor's instructions.

(7) Every carrier of radioactive material shall implement and maintain work procedures to ensure compliance with these Regulations and shall keep a record of those procedures.

Packages for transport

17.-(1) Subject to sub-regulations (2) and (3) of this Regulation a consignor or carrier shall not present for transport, radioactive material unless:

(a) the material is contained in;

(i) an excepted package;

(ii) a Type IP-1, Type IP-2 or Type IP 3 package;

(iii) a Type A package;

(iv) a Type B or Type C package of a certified design;

(v) a package for fissile material of a certified design;

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- (vi) a package for 0.1 kg or more of uranium hexafluoride of a certified design;
 - (vii) a package whose design is in accordance with the criteria set out in paragraph 815 of the *IAEA Regulations* and for which package certification is not otherwise required under these Regulations, if the material is packaged in accordance with that paragraph, or
 - (viii) packaging manufactured to a package design certified in accordance with the criteria set out in paragraph 816 or 817 of the *IAEA Regulations*, where the material is packaged in accordance with those paragraphs; and
- (b) the activity or mass of the material is within the applicable limits referred to in paragraphs 408 to 415 and 417 to 419 of the *IAEA Regulations*.
- (2) Notwithstanding sub-regulation (1), a consignor may present for transport, and a carrier may transport,
- (a) radioactive material under special arrangement;
 - (b) a package that is in transit and that is of a design that has been approved as a Type (UB)-96 or Type or Type C-96 package by a foreign competent authority in accordance with the applicable process specified in the *IAEA Regulations*; or;
 - (c) package containing 0.1 kg or more of uranium hexafluoride of a design that has been approved as H(U)-96 by a foreign competent authority in accordance with the applicable process specified in the *IAEA Regulations*.
- (3) Sub-regulation (1) does not apply to a consignor who presents for transport or a carrier who transports LSA-I material or an SCO-I in accordance with paragraph 523 of the *IAEA Regulations*.
- (4) Subject to sub-regulation (5), every consignor and carrier of radioactive material shall act in accordance with paragraph 501 to 547 of the *IAEA Regulations*;

(5) A consignor may present for transport, and a carrier may transport, radioactive material in a package that is not labelled in accordance with paragraphs 541 to 543 of the *IAEA Regulations* if the package:-

- (a) is an exposure device of a certified model and
 - (i) is to be transported, or is transported, under exclusive use,
 - (ii) has clearly marked on it the word "RADIOACTIVE", the basic trefoil symbol set out in Figure 1 in Section V of the *IAEA Regulations* and the name, address and telephone number of the person who is authorized by a license to possess the radioactive material that it contains,
 - (iii) has clearly stamped on it, or visibly and legibly inscribed on a durable steel or brass tag that is readily visible and securely affixed to it by means of metal fasteners, the name, quantity in Becquerel, date of measurement of that quantity and form of the radioactive material that it contains, as well as the maximum permissible activity of the package, and
 - (iv) is transported by a vehicle that displays on each side and on each end a placard for substances of Class 7 specified in the *Transportation of Dangerous Goods Regulations, UN Recommendations*;
- (b) is an excepted package;
- (c) contains only LSA-I material other than uranium hexafluoride and
 - (i) is to be transported, or is transported, under exclusive use;
 - (ii) has clearly marked on it the words "RADIOACTIVE LSA-I EXCLUSIVE USE", and
 - (iii) is transported by a vehicle that displays on each side and on each end a placard for substances of Class 7 specified in the *Transportation of Dangerous Goods Regulations, UN Recommendations*; or
- (d) is labelled in accordance with the *International Maritime Dangerous Goods Code* or the *Technical Instructions for the Safe Transport of Dangerous Goods by Air*.

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Dangerous Goods Code or the Technical Instructions for the Safe Transport of Dangerous Goods by Air:

18.-(1) Subject to subsection (2), every consignor of radioactive material shall include in the transport documents for the consignment the information referred to in paragraph 549 of the *IAEA Regulations* which shall be clearly and indelibly printed in the documents.

Trans-
port
docu-
ments

(2) Sub-regulation (1) does not apply;

(a) with respect to an excepted package; or

(b) to a consignor who provides transport documents that have been prepared in accordance with the *International Maritime Dangerous Goods Code* or the *Technical Instructions for the Safe Transport of Dangerous Goods by Air*.

(3) A person shall not transport a consignment of radioactive material unless the consignment is accompanied by the transport documents referred to in subsection (1) and (2).

19.-(1) Every consignor, carrier and consignee of radioactive material shall implement a radiation protection program and shall, as part of that program:-

Radiation
protec-
tion
program

(a) keep the amount of exposure to radon progeny and the effective dose and equivalent dose received by and committed to persons as low as reasonably achievable, social and economic factors being taken into account, through the implementation of:-

(i) management control over work practices, personnel qualification and training;

(ii) control of occupational and public exposure to radiation; and

(iii) planning for unusual situations;

(b) prevent persons from receiving doses of radiation higher than the radiation dose limits prescribed by the Atomic Energy (Protection from Ionizing Radiation) Regulations GN No. 209 of 2004; and

(c) train persons referred to in the program on the application of the program.

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- (2) Every consignor, carrier and consignee shall;
- (a) keep a record of its radiation protection program and of any information collected under the program; and
 - (b) retain the record of information collected under the program for the period ending two years after the date on which it is collected.

Dangerous
occurrences

20.-(1) Every consignor who becomes aware of any of the following dangerous occurrences shall immediately make a preliminary report to the Commission and to the holder, if any, of a licence to import the radioactive material that is involved in the occurrence:-

- (a) a conveyance carrying radioactive material is involved in an accident;
- (b) a package shows evidence of damage, tampering or leakage of its contents;
- (c) any failure to comply with the Act, these regulations or any licence or certificate applicable to a package that may reasonably be expected to lead to a situation in which the environment, the health and safety of persons or national security is adversely affected;
- (d) radioactive material is lost, stolen or no longer in the control of a person who is required to have control by the Act or the regulations made under the Act;
- (e) radioactive material has escaped from a containment system, a package or a conveyance during transport;
- (f) fissile material is outside the confinement system transport; or the level of non-fixed contamination during transport exceeds the limits specified in paragraphs 508 and 509 of the *IAEA Regulations*.

(2) Every carrier, consignee or holder of a licence to transport the nuclear substance while in transit who becomes aware of any of the dangerous occurrences referred to in subsection (1) shall immediately make a preliminary report to the Commission and to either the consignor or the holder, if any of a licence to import the radioactive material that is involved in the occurrence.

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(3) The preliminary reports referred to in sub-regulation (1) and (2) shall include information on the location and circumstances of the dangerous occurrence and on any action that the consignor, carrier or consignee has taken or proposes to take with respect to it.

(4) Immediately after a dangerous occurrence referred to in sub-regulation (1) of this regulation, the consignor, the carrier, the consignee or any other person who controls any area affected by the dangerous occurrence shall:-

- (a) limit, to the extent possible, the spread of any radioactive material;
- (b) place barriers, signs or personnel at every point of entry into the affected area to control the entry of person into that area;
- (c) record the name, address and telephone number of any person who may have been exposed to or contaminated by radioactive material and request that the person remain available for assessment by an expert in radiation protection; and
- (d) have an expert in radiation protection assess the situation and report the results of the assessment to the Commission.

(5) Within 21 days after a dangerous occurrence referred to in sub-regulation (1) of this regulation the consignor, the carrier, the consignee and the holder of a licence to transport the nuclear substance while in transit shall file a full report with the Commission, and the report shall contain the following about the occurrence:-

- (a) the date, time and location;
- (b) the probable cause;
- (c) the names of the persons involved;
- (d) the circumstances;
- (e) the effect on the environment, the health and safety of persons, and national or international security that have resulted or may result;
- (f) the doses of radiation that any person has received or is likely to have received; and

the actions taken by the consignor, the carrier and the consignee.

Accidental release

21. For the purpose of accidental release the following levels of ionizing radiation are established;

- (a) 10 mSv/h on the external surface of a package that is being transported under exclusive use, 2 mSv/h on the surface of the conveyance, and 0.1 mSv/h at a distance of 2 m from the surface of the conveyance, and
- (b) 2 mSv/h on the external surface of a package that is not being transported under exclusive use, 0.1 mSv/h at a distance of 1 m from the package, 2 mSv/h on the surface of the conveyance, and 0.1 mSv/h at a distance of 2 m from the surface of the conveyance.

Opening of packages

22.-(1) No persons other than the consignor or the consignee of the package, shall open a package unless:-

- (a) measures are taken to prevent persons from receiving doses of radiation higher than the radiation dose limits as referred in regulation 19(1)(b) of these regulations;
- (b) the package is opened in the presence of an expert in radiation protection.

(2) When a person other than the consignor or the consignee opens a package, the person shall restore the package to a condition that meets the requirement of these Regulations before forwarding it to the consignee.

(3) On receipt of a package, and on opening a package, every person shall verify whether.

- (a) the package is damaged;
- (b) the package shows evidence of having been tampered with;
- (c) any portion of the fissile material is outside the confinement system; and

any portion of the contents of the package is outside the containment system or the package.

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(4) Every person who discovers that a package is damaged or that any portion of the fissile material is outside the confinement system shall file a full report of the discovery with the consignor and with the Commission within 21 days after the discovery.

(5) Every person who discovers that a package shows evidence of having been tampered with or that any portion of the contents of a package has escaped from the containment system or the package shall immediately make a preliminary report to the Commission and to either the consignor or the holder, if any, of a licence to import the radioactive material that is involved.

(6) The preliminary report of a discovery referred to in sub-regulation (5) of this regulation shall include information on the location and circumstances of the discovery and on any action that the person has taken or proposes to take with respect to it.

(7) Every consignor and every holder of a licence to import radioactive material who receives a preliminary report of a discovery referred to in sub-regulation (5) of this regulation shall file a full report of the discovery with the Commission within 21 days after receiving the preliminary report.

23. If a consignment cannot be delivered to the consignee, the carrier shall:-

- (a) notify the consignor, the consignee and the Commission; and
- (b) place the consignment in an area to which access is controlled by the carrier and keep it there until it can be delivered to the consignor or the consignee.

Undeliverable consignments

24.-(1) A person who packages radioactive material in a Type IP-2, Type IP-3 or Type A package shall keep a record of the following information and documents concerning the package:

- (a) the technical specifications of its design;
- (b) the type, quantity and physical form of the radioactive material that it is designed to contain;
- (c) any document that demonstrates that the package meets the requirements of these Regulations, including the written quality assurance program; and

Records to be kept and retained

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(d) instructions for packaging, transport, receiving, maintenance and unpackaging.

(2) Every person who is required by sub-regulation (1) of this regulation to keep a record shall retain the record for the period ending two years after the date on which the packaging occurs.

Dar es Salaam,
18th October, 2011

HON. MAKAME MBARAWA, (MP),
*Minister of Communication, Science
and Technology*