

RADIATION SURVEILLANCE PROCEDURES FOR SAFE TRANSPORT OF RADIOACTIVE MATERIALS, 1987

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RADIATION SURVEILLANCE PROCEDURES FOR SAFE TRANSPORT OF RADIOACTIVE MATERIALS, 1987

G.S.R. 5, dated 17th December, 1987 1.- In pursuance of R.15 of the Radiation Protection Rules, 1971, the Atomic Energy Regulatory Board hereby specifies the following order specifying radiation surveillance procedures for safe transport of radioactive materials, namely :-

1. Short title, extent and commencement :-

(1) These surveillance procedures may be called the Radiation Surveillance Procedure for Safe Transport of Radioactive Materials, 1987.

(2) They shall come into force on the date of their publication in the Official Gazette.

2. Application :-

Subject to the provisions of paragraph 3, these procedures shall apply to the transport of radioactive materials by air, land and water.

3. Procedures not to apply in certain cases :-

These procedures do not apply:

(a) Within establishments where the radioactive material is produced, used or stored (unless storage is in the course of transport); and

(b) to human beings who have been implanted with radioisotope cardiac pacemakers, or other devices, or who have been treated with radio-pharmaceuticals.

4. Definitions :-

(i) "carrier" means any individual, organisation or Government undertaking engaged in the carriage of radioactive material by any means of transport;

(ii) "compliance assurance programme" means a systematic programme of measures specified by the competent authority to ensure that these procedures are complied with in practice;

(iii) "consignment" means any package or packages, or load containing radioactive material for transport;

(iv) 'consignor' means any individual, organisation or Government which presents a consignment, or on whose behalf the consignment is presented, for transport;

(v) "contamination" means the presence of a radioactive substance on the surface of a consignment in quantities in excess of those specified by the competent authority;

(vi) "design" means the description of- (a) special form radioactive material, (b) of package which enables such an item to be fully identified and such description may include specifications engineering drawings, reports demonstrating compliance with requirements and other relevant documentation specified by the competent authority;

(vii) "establishment" means place or premise where radioactive materials are produced, used or stored other than premises used for storage-in-transit during transport;

(viii) "fissile material" means uranium-233, uranium 235 plutonium-238, plutonium-239, plutonium-241, or any combination of these nuclides but does not include unirradiated natural uranium and depleted uranium, and natural uranium or depleted uranium which has been irradiated in thermal reactors contamination;

(ix) "fixed contamination" means contamination other than non-fixed contamination:

(x) "freight container" means an article of transport equipment designed to facilitate the carriage of consignment, either packaged or unpackaged by one or more modes of transport without intermediate unloading or reloading of its contents;

(xi) "manufacturer" means the individual organization or Government when control*, partially or wholly, the fabrication, assembly or similar activity associated with the construction of a package to be used for the transport of radioactive material;

(xii) "non-fixed contamination" means contamination that can be removed from a surface during normal handlings;

(xiii) "package" means the packaging containing radioactive material;

(xiv) "packaging" means the assembly of components necessary to completely enclose the radioactive materials which may, in particular, consist of one or more receptacles, absorbent materials, spacing structures, radiation shielding, and devices for cooling, for absorbing mechanical shocks, and for thermal insulation, and such packaging may be in the form of a box, drum or similar receptacle or a freight container or tank;

(xv) "public domain" means places or premises other than establishments;

(xvi) "quality assurance programme" means a systematic programme of controls and inspections applied by any individual, organisation or Government involved in the transport of radioactive materials which is aimed at providing the standards of safety specified by the competent authority;

(xvii) "radiation level" means the dose-equivalent rate expressed in millisieverts (or equivalent millirem) per hour;

(xviii) "rules" means the Radiation Protection Rules, 1971 ;

(xix) "shipment or transport" means the movement of a consignment from one place to another in public domain including storage-in-transit:

(xx) "special arrangement" means those specific provisions approved by the competent authority under which a consignment (which otherwise does not satisfy all the applicable requirements of these procedures) may be transported;

(xxi) "special form radioactive material" means either an indispersible solid radioactive material or an unbreakable metallic sealed capsule containing the radioactive material;

(xxii) "tank" means a tank container, portable tank, a road tank vehicle, a rail tank wagon or a receptacle with a capacity of not less than 450 litres to contain liquids, powders, granule or slurries and a capacity or not less than 1000 litres to contain gases:

(xxiii) "transport worker" means any person directly handling any consignment;

(xxiv) "type B package" means a package which is capable of withstanding severe accident conditions during transport:

(xxv) words and expressions used in these procedures but not defined and defined in the Act or the rules, shall have the meanings respectively assigned to them in the Act and the rules.

5. 5 :-

The consignor shall possess a valid licence issued under the rules for handling radioactive materials.

6. 6 :-

The consignor shall obtain prior permission from the competent authority for undertaking the transport of any radioactive material.

7. 7 :-

The consignor shall transport the radioactive material only in packages complying with the relevant requirements specified by the competent authority.

8. 8 :-

Each package shall conform to the package design and test requirements specified by the competent authority.

9. 9 :-

The consignor shall furnish to the carrier relevant procedures and

operational controls, if any, to be followed during transport in order that under normal and accident conditions of transport, the radiation exposures to transport workers are within the limits specified by the competent authority and the carrier shall comply with such procedures and operational controls.

10. 10 :-

(1) It shall be the responsibility of the carrier to ensure that during transport, the-

(i) packagings containing radioactive material are segregated sufficiently from transport workers and from members of the public;

(ii) packages containing radioactive material are sufficiently segregated from undeveloped photographic film.

(2) The consignor shall inform the carrier in writing at the time of shipment of the consignment, regarding carriers responsibility under this paragraph and his liability under the Atomic Energy Act, 1962 and the Radiation Protection Rules consequent upon his failure to discharge his responsibility.

11. 11 :-

Any individual, organisation or Government involved in the transport of radioactive materials shall establish quality assurance programmes for the design, manufacture, testing, documentation, use, maintenance and inspection of packages and for their transport and in-transit storage operations, in order to ensure compliance with the relevant provisions of these procedures. Where approval of the competent authority for design and shipment is required, such approval will be given subject to a satisfactory quality assurance programme. The manufacturer or consignor of an approved package design shall submit certificates to the competent authority to the effect that the as built package meets all the design specifications. The competent authority may inspect the packaging at any or all stages of manufacture or use. Packagings not strictly complying with relevant requirements and specifications shall not be used for transport. In case the packaging is intended to be re-used for transport during the validity period of its approval certificate, the packaging shall be maintained in good condition to comply with the relevant requirements and specifications.

12. 12 :-

The design, manufacture, testing, inspection and maintenance of

packaging, and the preparation, handling and storage of packages by consignors and carriers, along with the associated documentation, shall meet the requirements of compliance assurance programme.

13. 13 :-

The consignor shall ensure that a consignment which does not meet all the regulatory requirements shall not be transported except under special arrangement with the prior approval of the competent authority.

14. 14 :-

The consigner shall ensure that the quantity of radioactive material in a package does not exceed the quantity specified by the competent authority for the package.

15. 15 :-

(1) Prior approval of the competent authority shall be required for the design of-

- (a) special form radioactive material;
- (b) all packages containing fissile material;
- (c) type B packages.

(2) Prior approval of the competent authority shall be required for the shipment in the following cases, namely:-

- (a) special arrangement;
- (b) the shipment of packages requiring operational controls for dissipation of heat generated in the package and other such controls deemed necessary by the competent authority.

16. 16 :-

The consignor shall ensure that the non-fixed contamination on the external surface of a package shall be kept as low as practicable and, under conditions likely to be encountered in routine transport, shall not exceed the levels specified by the competent authority.

17. 17 :-

The consignor shall ensure that the marking, labelling and placarding of packages is done in such manner as may be specified by the competent authority.

18. 18 :-

(1) Where it is evident to the consignor or the carrier that a package is damaged or is leaking, or where it is suspected that the package may have been damaged, the consignor or the carrier shall restrict access to the package and shall as soon as possible get the extent of contamination and resultant radiation levels from the package assessed by a qualified person authorised by the competent authority.

(2) The said assessment shall cover examination of the package the conveyance, the adjacent loading and unloading areas, and, if necessary all other material which has been carried in the conveyance.

(3) Where after such assessment, the competent authority requires the consignor or the carrier to take additional steps for the protection of human health, property and environment to overcome or minimize the consequences of such leakage or damage, the consignor or the carrier, as the case may be, shall take such steps in accordance with the directions of that authority.

19. 19 :-

It shall be ensured by the consignor that each consignment of radioactive material is accompanied by,-

(a) a declaration by the consignor stating the necessary particulars regarding the consignment including identity of radioactive material, its strength, radiation level outside the package and where relevant, the average surface heat flux;

(b) a declaration by the consignor as follows,- "This is to certify that the contents of this consignment are properly described by name are properly packaged, marked and labelled; and are in the proper condition for transport"

(c) instructions to the carrier as required under these procedures;

(d) any other document or instructions to the carrier relevant to the particular shipment as specified by the competent authority.

20. 20 :-

The detailed requirements for compliance with these procedures may be specified by the competent authority in the form of codes or guides, the contents whereof shall be made known to the consignors and carriers.