
STATUTORY INSTRUMENTS

2002 No. 1093

The Radioactive Material (Road Transport) Regulations 2002

PART VI

REQUIREMENTS AND CONTROLS FOR TRANSPORT

Requirements to be fulfilled by the consignor before the first shipment

31.—(1) This regulation has effect for the purpose of imposing requirements that a consignor (being the first consignor, who makes the first use of a package for the purpose of undertaking a shipment) must fulfil, or ensure are fulfilled, before making that shipment.

(2) The requirements are—

- (a) if the design pressure of the containment system exceeds 35 kPa (gauge), that the containment system of each package conforms to the approved design requirements relating to the capability of that system to maintain its integrity under that pressure;
- (b) the effectiveness of the shielding and containment and (where necessary) the heat transfer characteristics and the effectiveness of the confinement system of each package of Type B(U), Type B(M) and Type C and also each package containing fissile material are within the limits applicable to or specified for the approved design; and
- (c) where, in order to comply with Part XIV of Schedule 8 (which sets out requirements for packages containing fissile material), neutron poisons are specifically included as components of the package, that checks are carried out to confirm the presence and distribution of those neutron poisons.

Requirements to be fulfilled by consignor before each shipment

32.—(1) This regulation imposes, in relation to various types of packages containing various kinds of material, the requirements that each consignor must fulfil to use a package for the purpose of undertaking both—

- (a) the first shipment of that package pursuant to regulation 31 (requirements to be fulfilled by the consignor before first shipment); and
- (b) every shipment of that package thereafter.

(2) The requirements are—

(a) that—

- (i) for any package, all the requirements specified in the relevant provisions of these Regulations have been satisfied;
- (ii) each Type B(U), Type B(M) and Type C package must be held until equilibrium conditions have been approached closely enough to demonstrate compliance with the requirements for temperature and pressure unless an exemption from these requirements has received unilateral approval; and

- (iii) for packages containing fissile material, the measurement specified in paragraph 9 of Part XIV of Schedule 8 (which sets out an estimate of the neutron multiplication for the package assessment) and the tests to demonstrate closure of each package as specified in paragraph 6 of Part XIV of Schedule 8 (which sets out the assessment for an individual package in isolation) must be performed where applicable; and
- (b) that it is ensured—
 - (i) that the lifting attachments not meeting the requirements specified in paragraph 2 of Part IV of Schedule 8 have been removed or otherwise rendered incapable of being used for lifting the package in accordance with paragraph 3 of Part IV of Schedule 8;
 - (ii) that all the requirements specified in the approval certificates for each Type B(U), Type B(M) and Type C package and for each package containing fissile material have been satisfied;
 - (iii) whether by inspection or by appropriate tests (or both), that all closures, valves and other openings of the containment system through which the radioactive contents might escape are properly closed and (where appropriate) sealed in a manner for which the demonstrations of compliance with the requirements specified in paragraph 7 of Part XI, paragraph 1 of Part XII and paragraph 3 of Part XIII of Schedule 8 were made;
 - (iv) for each special form radioactive material, that all the requirements specified in the special form approval certificate and the relevant provisions of these Regulations have been satisfied; and
 - (v) for each low dispersible radioactive material, that all the requirements specified in the approval certificate and the relevant provisions of these Regulations have been satisfied.

Transport of other goods in packages

33.—(1) The consignor must ensure that a package does not contain any other items except such articles and documents as are necessary for the use of the radioactive material in the package.

(2) But—

- (a) low specific activity material or
- (b) surface contaminated objects

may be transported with other items.

(3) The transport of—

- (a) such articles and documents as are necessary for the use of the radioactive material in the package or
- (b) low specific activity material with other items, or
- (c) surface contaminated objects with other items,

is allowed if there is no interaction between these items and the packaging or its radioactive contents that would reduce the safety of the package.

Restrictions on the use of tanks etc

34. A tank or an intermediate bulk carrier that has been used for the transport of radioactive material must not be used for the storage or for the transport of other goods unless the tank or container has been decontaminated—

- (a) below the level of 0.4 Bq/cm² for beta and gamma emitters and low toxicity alpha emitters, and
- (b) below the level of 0.04Bq/cm² for all other alpha emitters.

Transport of other goods with consignments transported under exclusive use

35. The transport of other goods with consignments being transported under exclusive use in accordance with regulation 20 (transport of consignments under exclusive use) is allowed if—

- (a) the arrangements for the transport are controlled solely by the consignor and
- (b) such transport is not prohibited by or under any statute.

Other dangerous properties of contents and the segregation of consignments from other dangerous goods

36.—(2) The carrier must—

- (a) ensure that during transport every consignment is segregated from any other dangerous goods, and
- (b) in the packing, labelling, marking, placarding, storage and transport of a package, take into account, not only radioactive and fissile properties of the contents, but also any other dangerous properties (including explosiveness, flammability, pyrophoricity, chemical toxicity and corrosiveness),

in order to be in compliance with the provisions mentioned in paragraph (2)

(2) Those provisions are—

- (a) these Regulations;
- (b) the relevant regulations for dangerous goods of each of the countries through or into which the consignment will be transported;
- (c) where applicable, the regulations of the cognisant transport organisation; and
- (d) as respects paragraph (1)(a), ADR 7.5.2 (mixed loading prohibition).

Requirements and controls for contamination and for leaking packages

37.—(1) This regulation and (where appropriate) Part XII (radiological emergencies and intervention arrangements) apply for the purpose of imposing requirements and controls relating to contamination and leaking packages and the measures to be taken in the event of damage or leakage occurring.

(2) The consignor must ensure that the levels of non-fixed contamination—

- (a) on the external surfaces of any package, are kept as low as practicable and (under routine conditions of transport) do not exceed—
 - (i) 4 Bq/cm² for beta and gamma emitters and low toxicity alpha emitters, and
 - (ii) 0.4 Bq/cm² for all other alpha emitters.

these limits being applicable when averaged over any area of 300 cm² of any part of the surface;

- (b) on the external and internal surfaces of any overpack, freight container, tank or intermediate bulk container, do not (subject to regulation 40 (exception in cases of certain overpacks, freight containers etc)) exceed the limits specified in sub-paragraph (a) above.

(3) Whenever it is—

- (a) evident to the consignor or the carrier that a package is damaged or is leaking, or

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- (b) suspected by the consignor or the carrier that a package may have been damaged or may have leaked,

he must restrict access to that package and must arrange for a qualified person to make an assessment of the extent of the contamination and of the resultant radiation level of the package as soon as possible.

- (4) The scope of the assessment required under paragraph (3) must include—

- (a) the package;
- (b) the conveyance;
- (c) the adjacent loading and unloading areas; and
- (d) if necessary, all other material which has been carried in or on the conveyance.

(5) When required by the Secretary of State, additional steps approved for the protection of persons, property and the environment must, be taken to overcome and minimise the consequences of any leakage or damage that has arisen.

(6) Any package that has become damaged, or from which any radioactive contents in excess of allowable limits for normal conditions of transport is leaking, may, under the direction of a suitably qualified specialist in radiation protection, be removed to an acceptable interim location under supervision; but any such package must not be forwarded until it has been repaired or reconditioned and it has been decontaminated.

Checks to be made on conveyances and equipment

38. A conveyance and equipment used routinely for the transport of radioactive material must be periodically checked by the consignor or his agent to determine the level of contamination, the frequency of such checks being related to the likelihood of contamination and the extent to which radioactive material is transported.

Decontamination

39. Except as provided in regulation 40 (exception in cases of certain overpacks, freight containers etc), the carrier must ensure that any conveyance or equipment (or part thereof)—

- (a) that in the course of the transport of radioactive material has become contaminated above the limits specified in paragraph (2)(a) of regulation 37 (requirements and controls for contamination etc), or
- (b) that shows a radiation level in excess of 5µSv/h at the surface,

is decontaminated as soon as possible by a suitably qualified person and is not re-used unless and until—

- (i) the non-fixed contamination does not exceed the limits specified in paragraph (2)
 - (a) of regulation 37 (requirements and controls for contamination etc), and
- (ii) the radiation level resulting from the fixed contamination of the surfaces after decontamination is less than 5µSv/h at the surface.

Exception in cases of certain overpacks, freight containers etc

40. An overpack, freight container, tank, intermediate bulk container or conveyance that is dedicated to the transport of radioactive material under exclusive use is excepted from the requirements of paragraph (2)(b) of regulation 37 (requirements and controls for contamination etc) and regulation 39 (decontamination)—

- (a) with regard to (but only with regard to) its internal surfaces and

- (b) only for so long as it remains under that specific exclusive use.

Particular requirements and controls applicable in the case of the transport of excepted packages

41.—(1) This regulation has effect for the purpose of applying certain provisions and requirements of this Part and of Part VIII (requirements for radioactive material and for packagings and packages) to excepted packages.

(2) Only the following provisions apply to excepted packages

- (a) the requirements specified in paragraphs (3) to (6);
- (b) the requirements specified in regulation 36 (other dangerous properties of contents and the segregation of consignments from other dangerous goods), paragraphs (2)(a) and (5) of regulation 37 (requirements and controls for contamination and for leaking packages), and regulation 42 (transport of empty packagings);
- (c) the requirements specified in paragraphs 1 to 3, 17(a), (b), (c), (d) and (f), and 18 to 22 of Schedule 6;
- (d) the requirements for excepted packages specified in Part V of Schedule 8; and
- (e) if the excepted package contains fissile material, one of the exceptions provided for in paragraph 3 of Part XIV of Schedule 8.

(3) The radiation level at any point on the external surface of an excepted package must not exceed 5 μ Sv/h.

(4) Radioactive material that is enclosed in, or is included as a component part of, an instrument or other manufactured article having activity not exceeding the item and package limits specified in columns 2 and 3 of Table III in Schedule 1, may be transported in an excepted package if (but only if)—

- (a) the radiation level at 10 cm from any point on the external surface of any unpackaged instrument or article does not exceed 0.1 mSv/h;
- (b) each instrument or article (except radioluminescent time-pieces or devices) bears the marking "RADIOACTIVE"; and
- (c) the radioactive material is completely enclosed by non-active components,

and for the purposes of this paragraph, a device that performs the sole function of containing radioactive material is not an instrument or manufactured article.

(5) Radioactive material in form other than as specified in paragraph (4) having activity not exceeding the limit specified in Table III in Schedule 1 (basic radionuclide values), may be transported if (but only if)—

- (a) the package retains its radioactive contents under routine conditions of transport;
- (b) the package bears the marking "RADIOACTIVE" on an internal surface in such manner that a warning of the presence of radioactive material is visible on opening the package.

(6) A manufactured article in which the sole radioactive material is unirradiated—

- (a) natural uranium,
- (b) depleted uranium, or
- (c) natural thorium,

may be transported as an excepted package if (but only if) the outer surface of the uranium or thorium is enclosed in an inactive sheath made of metal or some other substantial material.

Transport of empty packagings

42. An empty packaging that has previously contained radioactive material may be transported as an excepted package if (but only if)—

- (a) it is in a well maintained condition and is securely closed;
- (b) the outer surface of any uranium or thorium in its structure is covered with an inactive sheath made of metal or of some other substantial material;
- (c) the level of internal non-fixed contamination does not exceed 100 times the levels that are specified in paragraph (2)(a) of regulation 37 (requirements and controls for contamination and for leaking packages); and
- (d) any labels that may have been displayed on it in conformity with the labelling requirements of regulation 48 (responsibilities of consignors) are no longer visible.

Requirements and controls for the transport of LSA material and SCO in industrial packages or unpackaged

43.—(1) This regulation has effect for the purpose of imposing the requirements for, and the controls with respect to, the transport of LSA material or SCO in a single—

- (a) industrial package Type 1;
- (b) industrial package Type 2; or
- (c) industrial package Type 3.

(2) The quantity of the material described in paragraph (1), or (as the case may be) of an object or collection of objects, must be so restricted that the external radiation level at 3 m from the unshielded material or object or collection of objects does not exceed 10 mSv/h.

(3) LSA material and SCO in groups LSA-I and SCO-I may be transported unpackaged under the following conditions—

- (a) all unpackaged material (other than ores containing only naturally occurring radionuclides) must be transported in such manner that under routine conditions of transport there will—
 - (i) be no escape of the radioactive contents from the conveyance, nor
 - (ii) any loss of shielding;
- (b) each conveyance must be under exclusive use (except if it is transporting only SCO-I in which the contamination on the accessible and inaccessible surfaces does not exceed 10 times the applicable level specified in the definition of “contamination” in regulation 2(2)); and
- (c) in the case of SCO-I, where it is suspected that non-fixed contamination exists on inaccessible surfaces that exceeds the values specified in (a)(i) of the definition of “SCO” in regulation 2(2), measures must be taken so as to ensure that the radioactive material is not released into the conveyance.

(4) Except as provided in paragraph (3), LSA material and SCO must be packaged in accordance with Table IV in Schedule 1.

(5) The total activity in a conveyance for the carriage of LSA material or SCO in Type IP-1, Type IP-2, Type IP-3 or unpackaged must not exceed the limits specified in Table V of Schedule 1.

Determination of transport index (TI)

44. The transport index for—

- (a) a package,

- (b) an overpack,
- (c) a freight container, or
- (d) unpackaged LSA-I or SCO-I,

shall be the number derived in accordance with the procedure set out in paragraphs 1 and 2 of Schedule 5.

Determination of criticality safety index (CSI)

45. The criticality safety index for packages containing fissile material shall be determined in accordance with paragraphs 3 and 4 of Schedule 5.

Limits on TI, CSI and radiation levels for packages and overpacks

46.—(1) Except for consignments under exclusive use—

- (a) the TI of any package or overpack must not exceed 10, and
- (b) the CSI of any package or overpack must not exceed 50.

(2) Except for packages or overpacks transported under exclusive use by road under the conditions specified in regulation 20 (transport of consignments under exclusive use), the maximum radiation level at any point on any external surface of a package or overpack must not exceed 2 mSv/h.

(3) The maximum radiation level at any point on the external surface of a package under exclusive use must not exceed 10 mSv/h.

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Changes and effects yet to be applied to :

- Regulations revoked by [S.I. 2007/1573 Sch. 9](#)

Changes and effects yet to be applied to the whole Instrument associated Parts and Chapters:

Whole provisions yet to be inserted into this Instrument (including any effects on those provisions):

- reg. 68(2A) inserted by [S.I. 2005/525 Sch. para. 6\(b\)](#)