



PUBLIC HEALTH DIVISION
Radiation Protection Services

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February 8, 2013

Pamela J. Henderson, Deputy Director
Division Materials Safety and State Agreements
Office of Federal and State Materials and
Environmental Management Programs
U.S. Nuclear Regulatory Commission
T8-E24
Washington, D.C. 20555-0001

Dear Ms. Henderson:

Enclosed is a copy of the State of Oregon, Radiation Protections Services Section, final Administrative Rules **as filed with Oregon Secretary of State**. These final revisions are in effect

Rats ID

2004-1: IAEA Transportation Safety Standards relating to comments received through document ML092100397.

State Section: Oregon Administrative Rules (OAR) Chapter 333, Division 118

We believe that adoption of these rules satisfies the comments received from the initial review and becomes compatible with the health and safety categories established in the Office of Federal and State Materials and Environmental Management Programs (FSME) Procedure SA-200.

If you have any questions, please feel free to contact me at (971) 673-0500 or email me @ Todd.s.carpenter@state.or.us

Sincerely,

Todd S. Carpenter
Licensing Manager

Cc: Kathleen Schneider

Enclosures: Copy of final Oregon Administrative Rules
Corrected rules for final

►The Oregon Administrative Rules contain OARs filed through October 14, 2011 ◄

OREGON HEALTH AUTHORITY,
PUBLIC HEALTH DIVISION

DIVISION 118

TRANSPORTATION OF RADIOACTIVE MATERIAL

333-118-0010

Purpose and Scope

The rules in this division apply to any licensee authorized by specific or general license to receive, possess, use, or transfer licensed material, if the licensee delivers that material to a carrier for transport, transports the material outside the site of usage as specified in the license, or transports that material on public highways. No provision of this part authorizes possession of licensed material.

Stat. Auth.: ORS 453.635

Stats. Implemented: ORS 453.605 - 453.807

Hist.: HD 1-1991, f. & cert. ef. 1-8-91; PH 4-2007, f. & cert. ef. 3-1-07; PH 14-2008, f. & cert. ef. 9-15-08

333-118-0020

Definitions

As used in this division, the following definitions apply:

(1) "A1" means the maximum activity of special form radioactive material permitted in a Type A package. This value is either listed in Appendix A to 10 CFR Part 71, Table A-1, or may be derived in accordance with the procedures prescribed in Appendix A to 10 CFR Part 71.

(2) "A2" means the maximum activity of radioactive material, other than special form material, LSA, and SCO material, permitted in a Type A package. This value is either listed in **Appendix A** to 10 CFR Part 71, **Table A-1**, or may be derived in accordance with the procedures prescribed in Appendix A to 10 CFR Part 71.

(3) "Carrier" means a person engaged in the transportation of passengers or property by land or water as a common, contract, or private carrier, or by civil aircraft.

(4) "Closed transport vehicle" means a transport vehicle equipped with a securely attached exterior enclosure that during normal transportation restricts the access of unauthorized persons to the cargo space containing the radioactive material. The enclosure may be either temporary or permanent but shall limit access from top, sides, and ends. In the case of packaged materials, it may be of the "see-through" type.

(5) "Consignment" means each shipment of a package or groups of packages or load of radioactive material offered by a shipper for transport.

(6) "Conveyance" means for transport by public highway or rail any transport vehicle or large freight container; or for transport by water any vessel, or any hold, compartment, or defined deck area of a vessel including any transport vehicle on board the vessel; or for transport by aircraft.

(7) "Criticality Safety Index (CSI)" means the dimensionless number (rounded up to the next tenth) assigned to and placed on the label of a fissile material package, to designate the degree of control of accumulation of packages containing fissile material during transportation. Determination of criticality safety index is described in 10 CFR 71.22, 71.23, and 71.59.

(8) "Deuterium" means for the purposes of 10 CFR Parts 71.15 and 71.22, deuterium and any deuterium compounds, including heavy water, in which the ratio of deuterium atoms to hydrogen atoms exceeds 1:5000.

(9) "Exclusive use" means the sole use of a conveyance by a single consignor and for which all initial, intermediate, and final loading and unloading are carried out in accordance with the direction of the consignor or consignee. The consignor and the carrier must ensure that any loading or unloading is performed by personnel having radiological training and resources appropriate for safe handling of the consignment. The consignor must issue specific instructions, in writing, for maintenance of exclusive use shipment controls, and include them with the shipping paper information provided to the carrier by the consignor.

NOTE: The term "exclusive use" is used interchangeably with the terms "sole use" or "full load" in other regulations, such as Title 49 of the Code of Federal Regulations.

(10) "Fissile material" means the radionuclides plutonium-239, plutonium-241, uranium-233, and uranium-235, or any combination of these radionuclides. Fissile material means the fissile nuclides themselves, not material containing fissile nuclides. Unirradiated natural uranium and depleted uranium, and natural uranium or depleted uranium that has been irradiated in thermal reactors only, are not included in this definition. Certain exclusions from fissile material controls are provided in 10 CFR 71.15. **NOTE:** Authority jurisdiction is limited to special nuclear material in quantities not sufficient to form a critical mass as defined in division 100 of this chapter.

(11) "Fissile material package" means a fissile material packaging together with its fissile material contents.

(12) "Graphite" means for the purposes of 10 CFR 71.15 and 71.22 and graphite with a boron equivalent content less than five parts per million and density greater than 1.5 grams per cubic centimeter.

(13) "Licensed material" means radioactive or special nuclear material received, possessed, used, or transferred under a general or specific license issued by the Authority.

NOTE: The definition of licensed material in this division is used in the same way as in 49 CFR 173.403.

(14) "Low specific activity (LSA) material" means radioactive material with limited specific activity that is nonfissile or is excepted under 10 CFR 71.15, and that satisfies the descriptions and limits set forth below. Shielding materials surrounding the LSA material may not be considered in determining the estimated average specific activity of the package contents. LSA material must be in one of three groups:

(a) LSA-I:

(A) Ores containing only naturally occurring radionuclides (e.g., uranium, thorium) that are not intended to be processed for the use of these radionuclides;

(B) Solid unirradiated natural uranium, depleted uranium, natural thorium, or their solid or liquid compounds or mixtures;

(C) Radioactive material, other than fissile material, for which the A2 value is unlimited; or

(D) Other radioactive material in which the activity is distributed throughout and the estimated average specific activity does not exceed 30 times the value for exempt material activity concentration determined in accordance with 10 CFR 71, Appendix A.

(b) LSA-II:

(A) Water with tritium concentration up to 0.8 TBq/liter (20.0 Ci/liter); or

(B) Material in which the radioactive material is distributed throughout, and the average specific activity does not exceed 10^{-4} A2/g for solids and gases, and 10^{-5} A2/g for liquids.

(c) LSA-III. Solids (e.g., consolidated wastes, activated materials) in which:

(A) The radioactive material is distributed throughout a solid or a collection of solid objects, or is essentially uniformly distributed in a solid compact binding agent (such as concrete, bitumen, ceramic, etc.);

(B) The radioactive material is relatively insoluble, or it is intrinsically contained in a relatively insoluble material, so that, even under loss of packaging, the loss of radioactive material per package by leaching, when placed in water for seven days, would not exceed $1E-1 A_2$; and

(C) The estimated average specific activity of the solid does not exceed $2E-3 A_2$ per gram.

(15) "Low toxicity alpha emitters" means natural uranium, depleted uranium, natural thorium; uranium-235, uranium-238, thorium-232, thorium-228 or thorium-230 when contained in ores or physical or chemical concentrates or tailings; or alpha emitters with a half-life of less than 10 days.

(16) "Natural thorium" means thorium with the naturally occurring distribution of thorium isotopes (essentially 100 weight percent thorium-232).

(17) "Normal form radioactive material" means radioactive material that has not been demonstrated to qualify as "special form radioactive material".

(18) "Package" means the packaging together with its radioactive contents as presented for transport.

(a) Fissile material package or Type AF package, Type BF package, Type B(U)F package, or Type B(M)F package means a fissile material packaging together with its fissile material contents.

(b) Type A package means a Type A packaging together with its radioactive contents. A Type A package is defined and must comply with the DOT regulations in 49 CFR part 173.

(c) Type B package means a Type B packaging together with its radioactive contents. On approval, a Type B package design is designated by NRC as B(U) unless the package has a maximum normal operating pressure of more than 700 kPa (100 lbs/in²) gauge or a pressure relief device that would allow the release of radioactive material to the environment under the tests specified in 10 CFR 71.73 (hypothetical accident conditions), in which case it will receive a designation B(M). B(U) refers to the need for unilateral approval of international shipments; B(M) refers to the need for multilateral approval of international shipments. There is no distinction made in how packages with these designations may be used in domestic transportation. To determine their distinction for international transportation, see DOT regulations in 49 CFR Part 173. A Type B package approved before September 6, 1983, was designated only as Type B. Limitations on its use are specified in 10 CFR 71.19.

(19) "Packaging" means the assembly of components necessary to ensure compliance with the packaging requirements of 10 CFR Part 71.4. It may consist of one or more receptacles, absorbent materials, spacing structures, thermal insulation, radiation shielding, and devices for cooling or absorbing mechanical shocks. The vehicle, tie-down system, and auxiliary equipment may be designated as part of the packaging.

(20) "Regulations of the U.S. Department of Transportation" means the regulations in 49 CFR Parts 100-189 and Parts 390-397.

(21) "Regulations of the U.S. Nuclear Regulatory Commission" means the regulations in 10 CFR 71.

(22) "Special form radioactive material" means radioactive material that satisfies the following conditions:

(a) It is either a single solid piece or is contained in a sealed capsule that can be opened only by destroying the capsule;

(b) The piece or capsule has at least one dimension not less than five millimeters (0.2 inch.); and

(c) It satisfies the requirements of 10 CFR Part 71.75. A special form encapsulation designed in accordance with the requirements of 10 CFR Part 71.4 in effect on June 30, 1983 (see 10 CFR Part 71, revised as of January 1, 1983), and constructed before July 1, 1985 and a special form encapsulation designed in accordance with the requirements of 10 CFR Part 71.4 in effect on March 31, 1996 (see 10 CFR Part 71, revised as of January 1, 1983), and constructed before April 1, 1998, may continue to be used. Any other special form encapsulation must meet the specifications of this definition.

(23) "Specific activity" of a radionuclide means the radioactivity of a radionuclide per unit mass of that nuclide. The specific activity of a material in which the radionuclide is essentially uniformly distributed is the radioactivity per unit mass of the material.

(24) "State" means a state of the United States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands.

(25) "Surface contaminated object" (SCO) means a solid object that is not itself classed as radioactive material, but which has radioactive material distributed on any of its surfaces. SCO must be in one of two groups with surface activity not exceeding the following limits:

(a) SCO-I: a solid object on which:

(A) The non-fixed contamination on the accessible surface averaged over 300 cm² (or the area of the surface if less than 300 cm²) does not exceed 4 Bq/cm² (10⁻⁴

microcurie/cm²) for beta, gamma and low toxicity alpha emitters, or 0.4 Bq/cm² (10⁻⁵ microcurie/cm²) for all other alpha emitters;

(B) The fixed contamination on the accessible surface averaged over 300 cm² (or the area of the surface if less than 300 cm²) does not exceed 4x10⁴ Bq/cm² (1.0 microcurie/cm²) for beta, gamma and low toxicity alpha emitters, or 4x10³ Bq/cm² (0.1 microcurie/cm²) for all other alpha emitters; and

(C) The non-fixed contamination plus the fixed contamination on the inaccessible surface averaged over 300 cm² (or the area of the surface if less than 300 cm²) does not exceed 4x10⁴ Bq/cm² (1 microcurie/cm²) for beta, gamma and low toxicity alpha emitters, or 4x10³ Bq/cm² (0.1 microcurie/cm²) for all other alpha emitters.

(b) SCO-II: a solid object on which the limits for SCO-I are exceeded and on which:

(A) The nonfixed contamination on the accessible surface averaged over 300 cm² (or the area of the surface if less than 300 cm²) does not exceed 400 Bq/cm² (10⁻² microcurie/cm²) for beta and gamma and low toxicity alpha emitters or 40 Bq/cm² (10⁻³ microcurie/cm²) for all other alpha emitters;

(B) The fixed contamination on the accessible surface averaged over 300 cm² (or the area of the surface if less than 300 cm²) does not exceed 8 x 10⁵ Bq/cm² (20 microcuries/cm²) for beta and gamma and low toxicity alpha emitters, or 8 x 10⁴ Bq/cm² (2 microcuries/cm²) for all other alpha emitters; and

(C) The nonfixed contamination plus the fixed contamination on the inaccessible surface averaged over 300 cm² (or the area of the surface if less than 300 cm²) does not exceed 8 x 10⁵ Bq/cm² (20 microcuries/cm²) for beta and gamma and low toxicity alpha emitters, or 8 x 10⁴ Bq/cm² (2 microcuries/cm²) for all other alpha emitters.

(26) "Transport index (TI)" means the dimensionless number, (rounded up to the next tenth) placed on the label of a package to designate the degree of control to be exercised by the carrier during transportation. The transport index is the number determined by multiplying the maximum radiation level in millisievert (mSv) per hour at one meter (3.3 ft) from the external surface of the package by 100 (equivalent to the maximum radiation level in millirem per hour at one meter (3.3 ft)).

(27) "Type A quantity" means a quantity of radioactive material, the aggregate radioactivity of which does not exceed A1 for special form radioactive material or A2 for normal form radioactive material, where A1 and A2 are given in 10 CFR Part 71 Appendix A or may be determined by procedures described in 10 CFR Part 71 Appendix A.

(28) "Type A package" means a packaging that, together with its radioactive contents limited to A1 or A2 as appropriate, meets the requirements of 49 CFR 173.410 and 173.412 and is designed to retain the integrity of containment and shielding under normal

conditions of transport as demonstrated by the tests set forth in 173.465 or 173.466, as appropriate.

(29) "Type B package" means a Type B packaging together with its radioactive contents.

NOTE: A type B package design is designated as B(U) or B(M). B(U) refers to the need for unilateral approval of international shipments; B(M) refers to the need for multilateral approval. There is no distinction made in how packages with these designations may be used in domestic transportation. To determine their distinction for international transportation, refer to 49 CFR Part 173. A Type B package approved prior to September 6, 1983, was designated only as Type B. Limitations on its use are specified in OAR 333-118-0035.

(30) "Type B packaging" means a packaging designed to retain the integrity of containment and shielding when subjected to the normal conditions of transport and hypothetical accident test conditions set forth in 10 CFR Part 71.

(31) "Type B quantity" means a quantity of radioactive material greater than Type A quantity.

NOTE: 10 CFR Part 71 Appendix A referred to or incorporated by reference in this rule is attached to this division or available from the Authority.

(32) "Unirradiated uranium" means uranium containing not more than $2E+3$ Bq of plutonium per gram of uranium-235, not more than $9E+6$ Bq of fission products per gram of uranium-235, and not more than $5E-3$ g of uranium-236 per gram of uranium-235.

(33) "Uranium — natural, depleted, enriched":

(a) "Natural uranium" means uranium isotopes with the naturally occurring distribution of uranium, isotopes (which is approximately 0.711 weight percent uranium-235, and the remainder by weight essentially uranium-238).

(b) "Depleted uranium" means uranium containing less uranium-235 than the naturally occurring distribution of uranium isotopes.

(c) "Enriched uranium" means uranium containing more uranium-235 than the naturally occurring distribution of uranium isotopes.

[ED. NOTE: Appendices referenced are available from the agency.]

Stat. Auth.: ORS 453.635

Stats. Implemented: ORS 453.605 - 453.807

Hist.: HD 1-1991, f. & cert. ef. 1-8-91; PH 3-2003, f. & cert. ef. 3-27-03; PH 31-

2004(Temp), f. & cert. ef. 10-8-04 thru 4-5-05; PH 36-2004, f. & cert. ef. 12-1-04; PH 4-

2007, f. & cert. ef. 3-1-07; PH 14-2008, f. & cert. ef. 9-15-08; PH 4-2010, f. & cert. ef. 2-16-10

General Regulatory Provisions

333-118-0030

Requirement for License

No person shall transport radioactive material or deliver radioactive material to a carrier for transport except as authorized in a general or specific license issued by the Authority or as exempted in OAR 333-118-0040.

Stat. Auth.: ORS 453.635

Stats. Implemented: ORS 453.605 - 453.807

Hist.: HD 1-1991, f. & cert. ef. 1-8-91; PH 4-2007, f. & cert. ef. 3-1-07

333-118-0040

Exemptions

(1) Common and contract carriers, freight forwarders, and warehouse workers that are subject to the requirements of the U.S. Department of Transportation in 49 CFR 170 through 189 or the U.S. Postal Service in the U.S. Postal Service Manual Domestic Mail Manual, (DMM), section C-023.9.0 are exempt from the rules in chapter 333, divisions 102, 105, 113, 115, 116, 117, and 121 and the requirements for a license to the extent that they transport or store radioactive material in the regular course of their carriage for others or storage incident thereto. Common and contract carriers who are not subject to the requirements of the U.S. Department of Transportation or U.S. Postal Service are subject to OAR 333-118-0030 and other applicable requirements of these rules.

(2) Any licensee is exempt from the requirements of this division to the extent that the licensee delivers to a carrier for transport a package containing radioactive material having a specific activity not greater than (0.002 microcurie per gram 70 Becquerels per gram (Bq/g)).

Stat. Auth.: ORS 453.635

Stats. Implemented: ORS 453.605 - 453.807

Hist.: HD 1-1991, f. & cert. ef. 1-8-91; PH 3-2003, f. & cert. ef. 3-27-03; PH 31-2004(Temp), f. & cert. ef. 10-8-04 thru 4-5-05; PH 36-2004, f. & cert. ef. 12-1-04; PH 4-2007, f. & cert. ef. 3-1-07

333-118-0050

Transportation of Licensed Material

(1) Each licensee who transports licensed material outside the site of usage, as specified in the Authority license, or where transport is on public highways, or who delivers licensed material to a carrier for transport shall:

(a) Comply with the applicable requirements, appropriate to the mode of transport, of the regulations of the U.S. Department of Transportation in 49 CFR Parts 107, 171-180, and 390-397, appropriate to the mode of transportation. The licensee shall particularly note the regulations of U.S. Department of Transportation in the following areas:

(A) Packaging -- 49 CFR Part 173: Subparts A, B and I.

(B) Marking and labeling -- 49 CFR Part 172: Subpart D, 172.400 through 172.407, and 172.436 through 172.441 of Subpart E.

(C) Placarding -- 49 CFR Part 172: Subpart F, especially 172.500 through 172.519, and 172.556, and Appendices B and C.

(D) Accident reporting -- 49 CFR Part 171: 171.15 and 171.16.

(E) Shipping papers and emergency information -- 49 CFR Part 172: Subparts C and G.

(F) Hazardous material employee training -- 49 CFR Part 172: Subpart H.

(G) Security plans -- 49 CFR Part 172: Subpart I

(H) Hazardous material shipper/carrier registration -- 49 CFR Part 107: Subpart G.

(b) The licensee also shall comply with applicable U.S. Department of Transportation regulations pertaining to the following modes of transportation:

(A) Rail -- 49 CFR Part 174: Subparts A through D and K.

(B) Air -- 49 CFR Part 175.

(C) Vessel -- 49 CFR Part 176: Subparts A through F and M.

(D) Public highway -- 49 CFR Part 177 and Parts 390 through 397.

(c) Assure that any special instructions needed to safely open the package are sent to or have been made available to the consignee.

(2) If, for any reason, the regulations of the U.S. Department of Transportation are not applicable to a shipment of licensed material, the licensee shall conform to the standards and requirements of 49 CFR Parts 170 through 189 appropriate to the mode of transport and to the same extent as if the shipment were subject to the regulations.

Stat. Auth.: ORS 453.635

Stats. Implemented: ORS 453.605 - 453.807

Hist.: HD 1-1991, f. & cert. ef. 1-8-91; PH 3-2003, f. & cert. ef. 3-27-03; PH 31-2004(Temp), f. & cert. ef. 10-8-04 thru 4-5-05; PH 36-2004, f. & cert. ef. 12-1-04; PH 4-2007, f. & cert. ef. 3-1-07; PH 14-2008, f. & cert. ef. 9-15-08; PH 4-2010, f. & cert. ef. 2-16-10

333-118-0051

Deliberate Misconduct

(1) This rule applies to any:

(a) Licensee;

(b) Certificate holder;

(c) Quality assurance program approval holder;

(d) Applicant for a license, certificate, or quality assurance program approval;

(e) Contractor (including a supplier or consultant) or subcontractor, to any person identified in subsection (1)(d) of this section; or

(f) Employees of any person identified in subsections (1)(a) through (e) of this rule.

(2) A person identified in subsections (1)(a) through (f) of this rule who knowingly provides to an entity any components, materials, or other goods or services that relate to a licensee's, certificate holder's, quality assurance program approval holder's, or applicant's activities subject to this rule may not:

(a) Engage in deliberate misconduct that causes or would have caused, if not detected, a licensee, certificate holder, quality assurance program approval holder, or any applicant to be in violation of any rule, regulation, or order; or any term, condition or limitation of any license, certificate, or approval issued by the Authority; or

(b) Submit to the Authority, a licensee, a certificate holder, quality assurance program approval holder, an applicant for a license, certificate or quality assurance program approval, or a licensee's, applicant's, certificate holder's, or quality assurance program approval holder's contractor or subcontractor, information that the person knows to be incomplete or inaccurate.

(3) A person who violates section (2) of this rule may be subject to enforcement action by the Authority.

(4) For the purposes of section (2) of this rule, deliberate misconduct means an intentional act or omission that the person knows:

(a) Would cause a licensee, certificate holder, quality assurance program approval holder, or applicant for a license, certificate, or quality assurance program approval to be in violation of any rule, regulation, or order; or any term, condition, or limitation of any license or certificate issued by the Authority; or

(b) Constitutes a violation of a requirement, procedure, instruction, contract, purchase order, or policy of a licensee, certificate holder, quality assurance program approval holder, applicant, or the contractor or subcontractor of any of them.

Stat. Auth.: ORS 453.635

Stats. Implemented: ORS 453.605 - 453.807

Hist.: PH 4-2010, f. & cert. ef. 2-16-10

333-118-0052

Exemption for Low Level Materials

A licensee is exempt from all the requirements of division 118 with respect to shipment or carriage of the following low-level materials:

(1) Natural material and ores containing naturally occurring radionuclides that are not intended to be processed for use of these radionuclides, provided the activity concentration of the material does not exceed 10 times the values specified in 10 CFR Parts 71, Appendix A, Table A-2.

(2) Materials for which the activity concentration is not greater than the activity concentration values specified in 10 CFR Parts 71, Appendix A, Table A-2, or for which the consignment activity is not greater than the limit for an exempt consignment found in 10 CFR Parts 71, Appendix A, Table A-2.

Stat. Auth.: ORS 453.635

Stats. Implemented: ORS 453.605 - 453.807

Hist.: PH 4-2010, f. & cert. ef. 2-16-10

333-118-0053

Exemption from Classification as Fissile Material

Fissile material meeting the requirements of at least one section of this rule are exempt from classification as fissile material and from the fissile material package standards of 10 CFR Parts 71.55 and 71.59, but are subject to all other requirements of this rule, except as noted.

- (1) Individual package containing two grams or less fissile material.
- (2) Individual or bulk packaging containing 15 grams or less of fissile material provided the package has at least 200 grams of solid nonfissile material for every gram of fissile material. Lead, beryllium, graphite, and hydrogenous material enriched in deuterium may be present in the package but must not be included in determining the required mass for solid nonfissile material.
- (3) Low concentrations of solid fissile material commingled with solid nonfissile material, provided that:
 - (a) There is at least 2000 grams of solid nonfissile material for every gram of fissile material; and
 - (b) There is no more than 180 grams of fissile material distributed within 360 kg of contiguous nonfissile material.
- (4) Lead, beryllium, graphite, and hydrogenous material enriched in deuterium may be present in the package but must not be included in determining the required mass of solid nonfissile material.
- (5) Uranium enriched in uranium-235 to a maximum of one percent by weight, and with total plutonium and uranium-233 content of up to one percent of the mass of uranium-235, provided that the mass of any beryllium, graphite, and hydrogenous material enriched in deuterium constitutes less than five percent of the uranium mass.
- (6) Liquid solutions of uranyl nitrate enriched in uranium-235 to a maximum of two percent by mass, with a total plutonium and uranium-233 content not exceeding 0.002 percent of the mass of uranium, and with a minimum nitrogen to uranium atomic ratio (N/U) of two. The material must be contained in at least a DOT Type A package.
- (7) Packages containing, individually, a total plutonium mass of not more than 1000 grams, of which not more than 20 percent by mass may consist of plutonium-239, plutonium-241, or any combination of these radionuclides.

Stat. Auth.: ORS 453.635

Stats. Implemented: ORS 453.605 - 453.807

Hist.: PH 4-2010, f. & cert. ef. 2-16-10

General Licenses

333-118-0060

General Licenses for Carriers

(1) A general license is hereby issued to any common or contract carrier not exempt under OAR 333-118-0040 to receive, possess, transport, and store radioactive material in the regular course of their carriage for others or storage incident thereto, provided the transportation and storage is in accordance with the applicable requirements, appropriate to the mode of transport, of the U.S. Department of Transportation, insofar as such requirements relate to the loading and storage of packages, placarding of the transporting vehicle, and incident reporting.

NOTE: Notification of an incident shall be filed with, or made to, the Authority as prescribed in 49 CFR, regardless of and in addition to the notification made to the U.S. Department of Transportation or other agencies.

(2) A general license is hereby issued to any private carrier to transport radioactive material, provided the transportation is in accordance with the applicable requirements, appropriate to the mode of transport, of the U.S. Department of Transportation, insofar as such requirements relate to the loading and storage of packages, placarding of the transporting vehicle, and incident reporting.

(3) Persons who transport radioactive material pursuant to the general licenses in sections (1) or (2) of this rule are exempt from the requirements of divisions 111 and 120 of these rules to the extent that they transport radioactive material.

Stat. Auth.: ORS 453.635

Stats. Implemented: ORS 453.605 - 453.807

Hist.: HD 1-1991, f. & cert. ef. 1-8-91; HD 1-1995, f. & cert. ef. 4-26-95; PH 3-2003, f. & cert. ef. 3-27-03; PH 31-2004(Temp), f. & cert. ef. 10-8-04 thru 4-5-05; PH 36-2004, f. & cert. ef. 12-1-04; PH 4-2007, f. & cert. ef. 3-1-07

333-118-0070

General License: Nuclear Regulatory Commission-Approved Packages

(1) A general license is hereby issued to any licensee of the Authority to transport, or to deliver to a carrier for transport, licensed material in a package for which a license, Certificate of Compliance (CoC), or other approval has been issued by the U.S. Nuclear Regulatory Commission.

(2) This general license applies only to a licensee who:

(a) Has a quality assurance program approved by the Nuclear Regulatory Commission as satisfying the provisions of 10 CFR Part 71, Subpart H and applicable requirements in OAR 333-118-0200;

(b) Has a copy of the specific license, certificate of compliance, or other approval by the Nuclear Regulatory Commission of the package and has the drawings and other

documents referenced in the approval relating to the use and maintenance of the packaging and to the actions to be taken prior to shipment;

(c) Complies with the terms and conditions of the license, certificate, or other approval by the Nuclear Regulatory Commission, as applicable, and the applicable requirements of division 118; and

(d) Prior to the licensee's first use of the package, has registered with the U.S. Nuclear Regulatory Commission outlined in 10 CFR Part 71.17.

(3) The general license in section (1) of this rule applies only when the package approval authorizes use of the package under this general license.

(4) For previously approved Type B packages which are not designated as either B(U) or B(M) in the Certificate of Compliance, this general license is subject to additional restrictions in OAR 333-118-0080. For a Type B or fissile material package, the design of which was approved by Nuclear Regulatory Commission before April 1, 1996, the general license is subject to additional restrictions of OAR 333-118-0080.

Stat. Auth.: ORS 453.635

Stats. Implemented: ORS 453.605 - 453.807

Hist.: HD 1-1991, f. & cert. ef. 1-8-91; PH 3-2003, f. & cert. ef. 3-27-03; PH 31-2004(Temp), f. & cert. ef. 10-8-04 thru 4-5-05; PH 36-2004, f. & cert. ef. 12-1-04; PH 4-2007, f. & cert. ef. 3-1-07; PH 14-2008, f. & cert. ef. 9-15-08; PH 4-2010, f. & cert. ef. 2-16-10

333-118-0080

General License: Previously Approved Packages

(1) A Type B package previously approved by the U.S. Nuclear Regulatory Commission, but not designated as B(U) or B(M) in the Certificate of Compliance, may be used under the general license of OAR 333-118-0070 with the following additional limitations:

(a) Fabrication of the packaging was satisfactorily completed before August 31, 1986, as demonstrated by application of its model number in accordance with U.S. Nuclear Regulatory Commission regulations at 10 CFR 71.85(c); and

(b) The package may not be used for a shipment to a location outside the United States except when approved under special arrangement in accordance with 49 CFR 173.471. A package used for a shipment to a location outside the United States is subject to multilateral approval, as defined in U.S. Department of Transportation regulations at 49 CFR 173.403; and

(c) A serial number that uniquely identifies each packaging which conforms to the approved design is assigned to, and legibly and durably marked on, the outside of each packaging.

(2) A Type B(U) package, a Type B(M) package, a low specific activity (LSA) material package or a fissile material package, previously approved by the Nuclear Regulatory Commission but without the designation "-85" in the identification number of the Nuclear Regulatory Commission certificate of compliance, may be used under the general license of OAR 333-118-0070 with the following additional conditions:

(a) Fabrication of the package is satisfactorily completed by April 1, 1999, as demonstrated by application of its model number in accordance with Nuclear Regulatory Commission regulations at 10 CFR 71.85(c);

(b) A package used for a shipment to a location outside the United States is subject to multilateral approval except approved under special arrangement in accordance with U.S. Department of Transportation regulations at 49 CFR 173.403; and

(c) A serial number that uniquely identifies each packaging which conforms to the approved design is assigned to, and legibly and durably marked on, the outside of each packaging.

Stat. Auth.: ORS 453.635

Stats. Implemented: ORS 453.605 - 453.807

Hist.: HD 1-1991, f. & cert. ef. 1-8-91; PH 3-2003, f. & cert. ef. 3-27-03; PH 31-2004(Temp), f. & cert. ef. 10-8-04 thru 4-5-05; PH 36-2004, f. & cert. ef. 12-1-04; PH 4-2007, f. & cert. ef. 3-1-07; PH 14-2008, f. & cert. ef. 9-15-08

333-118-0090

General License: U.S. Department of Transportation Specification Container

(1) A general license is issued to any licensee of the Agency to transport, or to deliver to a carrier for transport, licensed material in a specification container containing a fissile material or a Type B quantity of radioactive material as specified in 49 CFR Parts 173 and 178.

(2) This general license applies only to a licensee who has a quality assurance program required by OAR 333-118-0200 and approved by the Authority.

(a) Has a copy of the specification;

(b) Complies with the terms and conditions of the specification and the applicable requirements of division 118; and

(c) Has a quality assurance program required by OAR 333-118-0200.

(3) The general license in this rule is subject to the limitation that the specification container may not be used for a shipment to a location outside the United States except by multilateral approval as defined in 49 CFR 173.403.

Stat. Auth.: ORS 453.635

Stats. Implemented: ORS 453.605 - 453.807

Hist.: HD 1-1991, f. & cert. ef. 1-8-91; PH 3-2003, f. & cert. ef. 3-27-03; PH 31-2004(Temp), f. & cert. ef. 10-8-04 thru 4-5-05; PH 36-2004, f. & cert. ef. 12-1-04; PH 4-2007, f. & cert. ef. 3-1-07

333-118-0100

General License: Use of Foreign Approved Package

(1) A general license is issued to any licensee of the Authority to transport, or to deliver to a carrier for transport, licensed material in a package the design of which has been approved in a foreign national competent authority certificate which has been revalidated by the U.S. Department of Transportation as meeting the applicable requirements of 49 CFR 171.12.

(2) This general license applies only to international shipments.

(3) This general license applies only to a licensee who:

(a) Has a copy of the applicable certificate, the revalidation, and the drawings and other documents referenced in the certificate relating to the use and maintenance of the packaging and to the actions to be taken prior to shipment;

(b) Complies with the terms and conditions of the certificate and revalidation and with the applicable requirements of this division.

(c) Has a quality assurance program approved by the Nuclear Regulatory Commission.

Stat. Auth.: ORS 453.635

Stats. Implemented: ORS 453.605 - 453.807

Hist.: HD 1-1991, f. & cert. ef. 1-8-91; PH 3-2003, f. & cert. ef. 3-27-03; PH 31-2004(Temp), f. & cert. ef. 10-8-04 thru 4-5-05; PH 36-2004, f. & cert. ef. 12-1-04; PH 4-2007, f. & cert. ef. 3-1-07

333-118-0110

General License: Fissile Material

A general license is issued to any licensee of the Authority to transport fissile material, or to deliver fissile material to a carrier for transport, if the material is shipped in accordance with 10 CFR Part 71.22.

Stat. Auth.: ORS 453.635

Stats. Implemented: ORS 453.605 - 453.807

Hist.: HD 1-1991, f. & cert. ef. 1-8-91; PH 3-2003, f. & cert. ef. 3-27-03; PH 31-2004(Temp), f. & cert. ef. 10-8-04 thru 4-5-05; PH 36-2004, f. & cert. ef. 12-1-04; PH 4-2007, f. & cert. ef. 3-1-07; PH 14-2008, f. & cert. ef. 9-15-08; PH 4-2010, f. & cert. ef. 2-16-10

333-118-0120

General License: Plutonium Beryllium Special Form Material

A general license is issued to any licensee of the Authority to transport fissile material in the form of plutonium-beryllium (Pu-Be) special form sealed sources, or to deliver Pu-Be sealed sources to a carrier for transport, if the material is shipped in accordance with 10 CFR Part 71.23.

Stat. Auth.: ORS 453.635

Stats. Implemented: ORS 453.605 - 453.807

Hist.: HD 1-1991, f. & cert. ef. 1-8-91; HD 1-1995, f. & cert. ef. 4-26-95; PH 3-2003, f. & cert. ef. 3-27-03; PH 31-2004(Temp), f. & cert. ef. 10-8-04 thru 4-5-05; PH 36-2004, f. & cert. ef. 12-1-04; PH 4-2007, f. & cert. ef. 3-1-07; PH 4-2010, f. & cert. ef. 2-16-10

333-118-0125

External Radiation Standards for All Packages

Each package of radioactive materials offered for transportation must be designed and prepared for shipment so that under conditions normally incident to transportation the radiation level does not exceed 2 mSv/h (200 mrem/h) at any point on the external surface of the package, and the transport index does not exceed 10. A package that exceeds the radiation level must be transported by exclusive use shipment only, and the radiation levels for such shipment must be in accordance with 10 CFR Part 71.47.

Stat. Auth.: ORS 453.635

Stats. Implemented: ORS 453.605 – 453.807

Hist.: PH 4-2010, f. & cert. ef. 2-16-10

Operating Controls and Procedures

333-118-0130

Fissile Material: Assumptions as to Unknown Properties of Fissile Material

When the isotopic abundance, mass, concentration, degree of irradiation, degree of moderation, or other pertinent property of fissile material in any package is not known,

the licensee shall package the fissile material as if the unknown properties had credible values that would cause the maximum neutron multiplication.

Stat. Auth.: ORS 453.635

Stats. Implemented: ORS 453.605 - 453.807

Hist.: HD 1-1991, f. & cert. ef. 1-8-91; PH 3-2003, f. & cert. ef. 3-27-03; PH 31-2004(Temp), f. & cert. ef. 10-8-04 thru 4-5-05; PH 36-2004, f. & cert. ef. 12-1-04; PH 4-2007, f. & cert. ef. 3-1-07

333-118-0140

Preliminary Determinations

Prior to the first use of any packaging for the shipment of radioactive material:

- (1) The licensee shall show that there are no cracks, pinholes, uncontrolled voids, or other defects that could significantly reduce the effectiveness of the packaging;
- (2) Where the maximum normal operating pressure will exceed 35 kilopascals (five pounds per square inch (psi)) gauge, the licensee shall test the containment system at an internal pressure at least 50 percent higher than the maximum normal operating pressure to show that the system will maintain its structural integrity at that pressure;
- (3) The licensee shall determine that the packaging meets 10 CFR Part 71.85(b); and
- (4) The licensee shall conspicuously and durably mark the packaging with its model number, serial number, gross weight, and a package identification number as assigned by the U.S. Nuclear Regulatory Commission.

Stat. Auth.: ORS 453.635

Stats. Implemented: ORS 453.605 - 453.807

Hist.: HD 1-1991, f. & cert. ef. 1-8-91; PH 3-2003, f. & cert. ef. 3-27-03; PH 31-2004(Temp), f. & cert. ef. 10-8-04 thru 4-5-05; PH 36-2004, f. & cert. ef. 12-1-04; PH 4-2007, f. & cert. ef. 3-1-07; PH 4-2010, f. & cert. ef. 2-16-10

333-118-0150

Routine Determinations

Prior to each shipment of licensed material, the licensee shall ensure that the package with its contents satisfies the applicable requirements of this division and of the license. The licensee shall determine that:

- (1) The package is proper for the contents to be shipped.

- (2) The package is in unimpaired physical condition except superficial defects such as marks or dents.
- (3) Each closure device of the packaging, including any required gasket, is properly installed and secured and free of defects.
- (4) Any system for containing liquid is adequately sealed and has adequate space or other specified provision for expansion of the liquid.
- (5) Any pressure relief device is operable and set in accordance with written procedures.
- (6) The package has been loaded and closed in accordance with written procedures.
- (7) Any structural part of the package which could be used to lift or tie down the package during transport is rendered inoperable for that purpose unless it satisfies design requirements specified in 10 CFR 71.45.
- (8) For fissile material, any moderator or neutron absorber, if required, is present and in proper condition.
- (9) The level of non-fixed (removable) radioactive contamination on the external surfaces of each package offered for shipment is as low as reasonably achievable and within the limits specified in Department of Transportation regulations outlined in 49 CFR Part 173.443.
 - (a) External radiation levels around the package and around the vehicle, if applicable, will not exceed the limits specified in 10 CFR Part 71.47 at anytime during transportation; and
 - (b) Accessible package surface temperatures will not exceed the limits specified in 10 CFR Part 71.43(g) at any time during transportation.

(10) External radiation levels around the package and around the vehicle, if applicable, will not exceed the limit specified in 10 CFR Part 71.45 at any time during transport

(11) Accessible package surfaces temperatures will not exceed the limits specified in 10 CFR Part 71.43.

Stat. Auth.: ORS 453.635

Stats. Implemented: ORS 453.605 - 453.807

Hist.: HD 1-1991, f. & cert. ef. 1-8-91; PH 3-2003, f. & cert. ef. 3-27-03; PH 31-2004(Temp), f. & cert. ef. 10-8-04 thru 4-5-05; PH 36-2004, f. & cert. ef. 12-1-04; PH 4-2007, f. & cert. ef. 3-1-07; PH 14-2008, f. & cert. ef. 9-15-08; PH 4-2010, f. & cert. ef. 2-16-10

333-118-0160

Air Transport of Plutonium

(1) Notwithstanding the provisions of any general licenses and notwithstanding any exemptions stated directly in this division or included indirectly by citation of the U.S. Department of Transportation regulations 49 CFR Chapter I, as may be applicable, the licensee shall assure that plutonium in any form is not transported by air, or delivered to a carrier for air transport, unless:

(a) The plutonium is contained in a medical device designed for individual human application;

(b) The plutonium is contained in a material in which the specific activity is less than or equal to the activity concentration values for plutonium specified in 10 CFR Part 71, Appendix A, Table A-2 and in which the radioactivity is essentially uniformly distributed;

(c) The plutonium is shipped in a single package containing no more than an A2 quantity of plutonium in any isotope or form and is shipped in accordance with OAR 333-118-0050 and 10 CFR Part 71.5; or

(d) The plutonium is shipped in a package specifically authorized for the shipment of plutonium by air in the Certificate of Compliance for that package issued by the Nuclear Regulatory Commission Part.

(2) Nothing in OAR 333-118-0160(1)(a) is to be interpreted as removing or diminishing the requirements in 10 CFR Part 73.24.

(3) For a shipment of plutonium by air, which is subject to OAR 333-118-0160(1)(d), the licensee shall, through special arrangement with the carrier, require compliance with 49 CFR 175.704, U.S. Department of Transportation regulations applicable to the air transport of plutonium.

Stat. Auth.: ORS 453.635

Stats. Implemented: ORS 453.605 - 453.807

Hist.: HD 1-1991, f. & cert. ef. 1-8-91; PH 3-2003, f. & cert. ef. 3-27-03; PH 31-2004(Temp), f. & cert. ef. 10-8-04 thru 4-5-05; PH 36-2004, f. & cert. ef. 12-1-04; PH 4-2007, f. & cert. ef. 3-1-07; PH 4-2010, f. & cert. ef. 2-16-10

333-118-0162

Opening Instructions

Before delivery of a package to a carrier for transport, the licensee shall ensure that any special instructions needed to safely open the package have been sent to, or otherwise made available to, the consignee for the consignee's use in accordance with 10 CFR 20.1906(e).

Stat. Auth.: ORS 453.635
Stats. Implemented: ORS 453.605 - 453.807
Hist.: PH 4-2010, f. & cert. ef. 2-16-10

333-118-0170

Shipment Records

Each licensee shall maintain for a period of three years after shipment, or until inspected by the Authority, a record of each shipment of licensed material not exempt under OAR 333-118-0040, showing, where applicable:

- (1) Identification of the packaging by model and serial number;
- (2) Verification that the packaging, as shipped, had no significant defects;
- (3) Volume and identification of coolant;
- (4) Type and quantity of licensed material in each package, and the total quantity of each shipment;
- (5) Date of the shipment;
- (6) Name and address of the transferee;
- (7) Address to which the shipment was made; and
- (8) Results of the determinations required by OAR 333-118-0150.

Stat. Auth.: ORS 453.635
Stats. Implemented: ORS 453.605 - 453.807
Hist.: HD 1-1991, f. & cert. ef. 1-8-91; PH 3-2003, f. & cert. ef. 3-27-03; PH 31-2004(Temp), f. & cert. ef. 10-8-04 thru 4-5-05; PH 36-2004, f. & cert. ef. 12-1-04; PH 4-2007, f. & cert. ef. 3-1-07

333-118-0180

Reports

The licensee shall report to the Authority within 30 days:

- (1) Any instance in which there is significant reduction in the effectiveness of any approved Type B or fissile packaging during use; and
- (2) Details of any defects with safety significance in the Type B or fissile packaging after first use, with the means employed to repair the defects and prevent their recurrence or

(3) Instances in which the conditions of approval in the certificate of compliance were not observed in making a shipment.

Stat. Auth.: ORS 453.635

Stats. Implemented: ORS 453.605 - 453.807

Hist.: HD 1-1991, f. & cert. ef. 1-8-91; PH 3-2003, f. & cert. ef. 3-27-03; PH 31-2004(Temp), f. & cert. ef. 10-8-04 thru 4-5-05; PH 36-2004, f. & cert. ef. 12-1-04; PH 4-2007, f. & cert. ef. 3-1-07

333-118-0190

Advance Notification of Transport of Nuclear Waste

(1) Each licensee shall provide advance notification to the Governor of the State of Oregon or designee of the shipment of licensed material through or across the boundary of the state before the transport or delivery to a carrier for transport of licensed material outside the confines of the licensee's plant or other place of storage.

NOTE: A list of the mailing addresses of the governors and governors' designees is available upon request from the Director, Office of State, Local, and Indian Tribe Programs, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555.

(2) Nuclear waste transports shall be transported as specified in 10 CFR Part 71.97.

Stat. Auth.: ORS 453.635

Stats. Implemented: ORS 453.605 - 453.807

Hist.: HD 1-1991, f. & cert. ef. 1-8-91; PH 3-2003, f. & cert. ef. 3-27-03; PH 31-2004(Temp), f. & cert. ef. 10-8-04 thru 4-5-05; PH 36-2004, f. & cert. ef. 12-1-04; PH 4-2007, f. & cert. ef. 3-1-07; PH 4-2010, f. & cert. ef. 2-16-10

Quality Assurance

333-118-0200

Quality Assurance Requirements

(1) Each licensee shall establish and maintain a Quality Assurance program specified by the Nuclear Regulatory Commission, 10 CFR, Subpart H, Parts 71.101 through 71.137.

(2) Licensees shall provide the Authority their Quality Assurance program or plans for review and approval by the Authority.

Stat. Auth.: ORS 453.635

Stats. Implemented: ORS 453.605 - 453.807

Hist.: HD 1-1991, f. & cert. ef. 1-8-91; PH 3-2003, f. & cert. ef. 3-27-03; PH 31-

2004(Temp), f. & cert. ef. 10-8-04 thru 4-5-05; PH 36-2004, f. & cert. ef. 12-1-04; PH 4-2007, f. & cert. ef. 3-1-07; PH 4-2010, f. & cert. ef. 2-16-10

333-118-0800

Referenced Materials

(1) This division of chapter 333 of the Oregon Administrative Rules incorporates by reference material originally published elsewhere. Certified copies of the complete text of incorporated materials referenced are available for public inspection during regular business hours at the Radiation Protection Services Office. Copies of referenced material will be provided at cost upon request. Information regarding how the incorporated material may be obtained or examined is available from Radioactive Materials Program, Radiation Protection Services, 800 NE Oregon Street, Portland, Oregon 97232.

(2) Material referenced in this division does not include amendments to or revised editions of the material published later than the effective date of the relevant section.

Stat. Auth.: ORS 453.635

Stats. Implemented: ORS 453.605 - 453.807

Hist.: PH 3-2003, f. & cert. ef. 3-27-03; PH 31-2004(Temp), f. & cert. ef. 10-8-04 thru 4-5-05; PH 36-2004, f. & cert. ef. 12-1-04; PH 4-2007, f. & cert. ef. 3-1-07

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333-118-0020

Definitions

As used in this division, the following definitions apply:

(1) "A1" means the maximum activity of special form radioactive material permitted in a Type A package. This value is either listed in Appendix A to 10 CFR Part 71, Table A-1, or may be derived in accordance with the procedures prescribed in Appendix A to 10 CFR Part 71.

(2) "A2" means the maximum activity of radioactive material, other than special form material, LSA, and SCO material, permitted in a Type A package. This value is either listed in **Appendix A** to 10 CFR Part 71, **Table A-1**, or may be derived in accordance with the procedures prescribed in Appendix A to 10 CFR Part 71.

(3) "Carrier" means a person engaged in the transportation of passengers or property by land or water as a common, contract, or private carrier, or by civil aircraft.

(4) "Closed transport vehicle" means a transport vehicle equipped with a securely attached exterior enclosure that during normal transportation restricts the access of unauthorized persons to the cargo space containing the radioactive material. The enclosure may be either temporary or permanent but shall limit access from top, sides, and ends. In the case of packaged materials, it may be of the "see-through" type.

(5) "Consignment" means each shipment of a package or groups of packages or load of radioactive material offered by a shipper for transport.

(6) "Conveyance" means for transport by public highway or rail any transport vehicle or large freight container; or for transport by water any vessel, or any hold, compartment, or defined deck area of a vessel including any transport vehicle on board the vessel; or for transport by aircraft.

(7) "Criticality Safety Index (CSI)" means the dimensionless number (rounded up to the next tenth) assigned to and placed on the label of a fissile material package, to designate the degree of control of accumulation of packages containing fissile material during transportation. Determination of criticality safety index is described in 10 CFR 71.22, 71.23, and 71.59.

(8) "Deuterium" means for the purposes of 10 CFR Parts 71.15 and 71.22, deuterium and any deuterium compounds, including heavy water, in which the ratio of deuterium atoms to hydrogen atoms exceeds 1:5000.

(9) "Exclusive use" means the sole use of a conveyance by a single consignor and for which all initial, intermediate, and final loading and unloading are carried out in accordance with the direction of the consignor or consignee. The consignor and the

carrier must ensure that any loading or unloading is performed by personnel having radiological training and resources appropriate for safe handling of the consignment. The consignor must issue specific instructions, in writing, for maintenance of exclusive use shipment controls, and include them with the shipping paper information provided to the carrier by the consignor.

NOTE: The term "exclusive use" is used interchangeably with the terms "sole use" or "full load" in other regulations, such as Title 49 of the Code of Federal Regulations.

(10) "Fissile material" means the radionuclides plutonium-239, plutonium-241, uranium-233, and uranium-235, or any combination of these radionuclides. Fissile material means the fissile nuclides themselves, not material containing fissile nuclides. Unirradiated natural uranium and depleted uranium, and natural uranium or depleted uranium that has been irradiated in thermal reactors only, are not included in this definition. Certain exclusions from fissile material controls are provided in 10 CFR 71.15. **NOTE:** Authority jurisdiction is limited to special nuclear material in quantities not sufficient to form a critical mass as defined in division 100 of this chapter.

(11) "Fissile material package" means a fissile material packaging together with its fissile material contents.

(12) "Graphite" means for the purposes of 10 CFR 71.15 and 71.22 and graphite with a boron equivalent content less than five parts per million and density greater than 1.5 grams per cubic centimeter.

(13) "Licensed material" means radioactive or special nuclear material received, possessed, used, or transferred under a general or specific license issued by the Authority.

NOTE: The definition of licensed material in this division is used in the same way as in 49 CFR 173.403.

(14) "Low specific activity (LSA) material" means radioactive material with limited specific activity that is nonfissile or is excepted under 10 CFR 71.15, and that satisfies the descriptions and limits set forth below. Shielding materials surrounding the LSA material may not be considered in determining the estimated average specific activity of the package contents. LSA material must be in one of three groups:

(a) LSA-I:

(A) Ores containing only naturally occurring radionuclides (e.g., uranium, thorium) that are not intended to be processed for the use of these radionuclides;

(B) Solid unirradiated natural uranium, depleted uranium, natural thorium, or their solid or liquid compounds or mixtures;

(C) Radioactive material, other than fissile material, for which the A2 value is unlimited;
or

(D) Other radioactive material in which the activity is distributed throughout and the estimated average specific activity does not exceed 30 times the value for exempt material activity concentration determined in accordance with 10 CFR 71, Appendix A.

(b) LSA-II:

(A) Water with tritium concentration up to 0.8 TBq/liter (20.0 Ci/liter); or

(B) Material in which the radioactive material is distributed throughout, and the average specific activity does not exceed 10^{-4} A2/g for solids and gases, and 10^{-5} A2/g for liquids.

(c) LSA-III. Solids (e.g., consolidated wastes, activated materials) in which:

(A) The radioactive material is distributed throughout a solid or a collection of solid objects, or is essentially uniformly distributed in a solid compact binding agent (such as concrete, bitumen, ceramic, etc.);

(B) The radioactive material is relatively insoluble, or it is intrinsically contained in a relatively insoluble material, so that, even under loss of packaging, the loss of radioactive material per package by leaching, when placed in water for seven days, would not exceed $1\text{E-}1$ A2; and

(C) The estimated average specific activity of the solid does not exceed $2\text{E-}3$ A2 per gram.

(15) "Low toxicity alpha emitters" means natural uranium, depleted uranium, natural thorium; uranium-235, uranium-238, thorium-232, thorium-228 or thorium-230 when contained in ores or physical or chemical concentrates or tailings; or alpha emitters with a half-life of less than 10 days.

(16) "Natural thorium" means thorium with the naturally occurring distribution of thorium isotopes (essentially 100 weight percent thorium-232).

(17) "Normal form radioactive material" means radioactive material that has not been demonstrated to qualify as "special form radioactive material".

(18) "Package" means the packaging together with its radioactive contents as presented for transport.

(a) Fissile material package or Type AF package, Type BF package, Type B(U)F package, or Type B(M)F package means a fissile material packaging together with its fissile material contents.

(b) Type A package means a Type A packaging together with its radioactive contents. A Type A package is defined and must comply with the DOT regulations in 49 CFR part 173.

(c) Type B package means a Type B packaging together with its radioactive contents. On approval, a Type B package design is designated by NRC as B(U) unless the package has a maximum normal operating pressure of more than 700 kPa (100 lbs/in²) gauge or a pressure relief device that would allow the release of radioactive material to the environment under the tests specified in 10 CFR 71.73 (hypothetical accident conditions), in which case it will receive a designation B(M). B(U) refers to the need for unilateral approval of international shipments; B(M) refers to the need for multilateral approval of international shipments. There is no distinction made in how packages with these designations may be used in domestic transportation. To determine their distinction for international transportation, see DOT regulations in 49 CFR Part 173. A Type B package approved before September 6, 1983, was designated only as Type B. Limitations on its use are specified in 10 CFR 71.19.

(19) "Packaging" means the assembly of components necessary to ensure compliance with the packaging requirements of 10 CFR Part 71.4. It may consist of one or more receptacles, absorbent materials, spacing structures, thermal insulation, radiation shielding, and devices for cooling or absorbing mechanical shocks. The vehicle, tie-down system, and auxiliary equipment may be designated as part of the packaging.

(20) "Regulations of the U.S. Department of Transportation" means the regulations in 49 CFR Parts 100-189 and Parts 390-397.

(21) "Regulations of the U.S. Nuclear Regulatory Commission" means the regulations in 10 CFR 71.

(22) "Special form radioactive material" means radioactive material that satisfies the following conditions:

(a) It is either a single solid piece or is contained in a sealed capsule that can be opened only by destroying the capsule;

(b) The piece or capsule has at least one dimension not less than five millimeters (0.2 inch.); and

(c) It satisfies the requirements of 10 CFR Part 71.75. A special form encapsulation designed in accordance with the requirements of 10 CFR Part 71.4 in effect on June 30, 1983 (see 10 CFR Part 71, revised as of January 1, 1983), and constructed before July 1, 1985 and a special form encapsulation designed in accordance with the requirements of 10 CFR Part 71.4 in effect on March 31, 1996 (see 10 CFR Part 71, revised as of January 1, 1983), and constructed before April 1, 1998, may continue to be used. Any other special form encapsulation must meet the specifications of this definition.

(23) "Specific activity" of a radionuclide means the radioactivity of a radionuclide per unit mass of that nuclide. The specific activity of a material in which the radionuclide is essentially uniformly distributed is the radioactivity per unit mass of the material.

(24) "State" means a state of the United States, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands.

(25) "Surface contaminated object" (SCO) means a solid object that is not itself classed as radioactive material, but which has radioactive material distributed on any of its surfaces. SCO must be in one of two groups with surface activity not exceeding the following limits:

(a) SCO-I: a solid object on which:

(A) The non-fixed contamination on the accessible surface averaged over 300 cm² (or the area of the surface if less than 300 cm²) does not exceed 4 Bq/cm² (10⁻⁴ microcurie/cm²) for beta, gamma and low toxicity alpha emitters, or 0.4 Bq/cm² (10⁻⁵ microcurie/cm²) for all other alpha emitters;

(B) The fixed contamination on the accessible surface averaged over 300 cm² (or the area of the surface if less than 300 cm²) does not exceed 4x10⁴ Bq/cm² (1.0 microcurie/cm²) for beta, gamma and low toxicity alpha emitters, or 4x10³ Bq/cm² (0.1 microcurie/cm²) for all other alpha emitters; and

(C) The non-fixed contamination plus the fixed contamination on the inaccessible surface averaged over 300 cm² (or the area of the surface if less than 300 cm²) does not exceed 4x10⁴ Bq/cm² (1 microcurie/cm²) for beta, gamma and low toxicity alpha emitters, or 4x10³ Bq/cm² (0.1 microcurie/cm²) for all other alpha emitters.

(b) SCO-II: a solid object on which the limits for SCO-I are exceeded and on which:

(A) The nonfixed contamination on the accessible surface averaged over 300 cm² (or the area of the surface if less than 300 cm²) does not exceed 400 Bq/cm² (10⁻² microcurie/cm²) for beta and gamma and low toxicity alpha emitters or 40 Bq/cm² (10⁻³ microcurie/cm²) for all other alpha emitters;

(B) The fixed contamination on the accessible surface averaged over 300 cm² (or the area of the surface if less than 300 cm²) does not exceed 8 x 10⁵ Bq/cm² (20 microcuries/cm²) for beta and gamma and low toxicity alpha emitters, or 8 x 10⁴ Bq/cm² (2 microcuries/cm²) for all other alpha emitters; and

(C) The nonfixed contamination plus the fixed contamination on the inaccessible surface averaged over 300 cm² (or the area of the surface if less than 300 cm²) does not exceed 8 x 10⁵ Bq/cm² (20 microcuries/cm²) for beta and gamma and low toxicity alpha emitters, or 8 x 10⁴ Bq/cm² (2 microcuries/cm²) for all other alpha emitters.

(26) "Transport index (TI)" means the dimensionless number, (rounded up to the next tenth) placed on the label of a package to designate the degree of control to be exercised by the carrier during transportation. The transport index is the number determined by multiplying the maximum radiation level in millisievert (mSv) per hour at one meter (3.3 ft) from the external surface of the package by 100 (equivalent to the maximum radiation level in millirem per hour at one meter (3.3 ft)).

(27) "Type A quantity" means a quantity of radioactive material, the aggregate radioactivity of which does not exceed A1 for special form radioactive material or A2 for normal form radioactive material, where A1 and A2 are given in 10 CFR Part 71 Appendix A or may be determined by procedures described in 10 CFR Part 71 Appendix A.

(28) "Type A package" means a packaging that, together with its radioactive contents limited to A1 or A2 as appropriate, meets the requirements of 49 CFR 173.410 and 173.412 and is designed to retain the integrity of containment and shielding under normal conditions of transport as demonstrated by the tests set forth in 173.465 or 173.466, as appropriate.

(29) "Type B package" means a Type B packaging together with its radioactive contents.

NOTE: A type B package design is designated as B(U) or B(M). B(U) refers to the need for unilateral approval of international shipments; B(M) refers to the need for multilateral approval. There is no distinction made in how packages with these designations may be used in domestic transportation. To determine their distinction for international transportation, refer to 49 CFR Part 173. A Type B package approved prior to September 6, 1983, was designated only as Type B. Limitations on its use are specified in OAR 333-118-0035.

(30) "Type B packaging" means a packaging designed to retain the integrity of containment and shielding when subjected to the normal conditions of transport and hypothetical accident test conditions set forth in 10 CFR Part 71.

(31) "Type B quantity" means a quantity of radioactive material greater than Type A quantity.

NOTE: 10 CFR Part 71 Appendix A referred to or incorporated by reference in this rule is attached to this division or available from the Authority.

(32) "Unirradiated uranium" means uranium containing not more than $2E+3$ Bq of plutonium per gram of uranium-235, not more than $9E+6$ Bq of fission products per gram of uranium-235, and not more than $5E-3$ g of uranium-236 per gram of uranium-235.

(33) "Uranium — natural, depleted, enriched":

(a) "Natural uranium" means uranium isotopes with the naturally occurring distribution of uranium, isotopes (which is approximately 0.711 weight percent uranium-235, and the remainder by weight essentially uranium-238).

(b) "Depleted uranium" means uranium containing less uranium-235 than the naturally occurring distribution of uranium isotopes.

(c) "Enriched uranium" means uranium containing more uranium-235 than the naturally occurring distribution of uranium isotopes.

[ED. NOTE: Appendices referenced are available from the agency.]

Stat. Auth.: ORS 453.635

Stats. Implemented: ORS 453.605 - 453.807

Hist.: HD 1-1991, f. & cert. ef. 1-8-91; PH 3-2003, f. & cert. ef. 3-27-03; PH 31-2004(Temp), f. & cert. ef. 10-8-04 thru 4-5-05; PH 36-2004, f. & cert. ef. 12-1-04; PH 4-2007, f. & cert. ef. 3-1-07; PH 14-2008, f. & cert. ef. 9-15-08; PH 4-2010, f. & cert. ef. 2-16-10

333-118-0050

Transportation of Licensed Material

(1) Each licensee who transports licensed material outside the site of usage, as specified in the Authority license, or where transport is on public highways, or who delivers licensed material to a carrier for transport shall:

(a) Comply with the applicable requirements, appropriate to the mode of transport, of the regulations of the U.S. Department of Transportation in 49 CFR Parts 107, 171-180, and 390-397, appropriate to the mode of transportation. The licensee shall particularly note the regulations of U.S. Department of Transportation in the following areas:

(A) Packaging -- 49 CFR Part 173: Subparts A, B and I.

(B) Marking and labeling -- 49 CFR Part 172: Subpart D, 172.400 through 172.407, and 172.436 through 172.441 of Subpart E.

(C) Placarding -- 49 CFR Part 172: Subpart F, especially 172.500 through 172.519, and 172.556, and Appendices B and C.

(D) Accident reporting -- 49 CFR Part 171: 171.15 and 171.16.

(E) Shipping papers and emergency information -- 49 CFR Part 172: Subparts C and G.

(F) Hazardous material employee training -- 49 CFR Part 172: Subpart H.

(G) Security plans -- 49 CFR Part 172: Subpart I

(H) Hazardous material shipper/carrier registration -- 49 CFR Part 107: Subpart G.

(b) The licensee also shall comply with applicable U.S. Department of Transportation regulations pertaining to the following modes of transportation:

(A) Rail -- 49 CFR Part 174: Subparts A through D and K.

(B) Air -- 49 CFR Part 175.

(C) Vessel -- 49 CFR Part 176: Subparts A through F and M.

(D) Public highway -- 49 CFR Part 177 and Parts 390 through 397.

(c) Assure that any special instructions needed to safely open the package are sent to or have been made available to the consignee.

(2) If, for any reason, the regulations of the U.S. Department of Transportation are not applicable to a shipment of licensed material, the licensee shall conform to the standards and requirements of 49 CFR Parts 170 through 189 appropriate to the mode of transport and to the same extent as if the shipment were subject to the regulations.

Stat. Auth.: ORS 453.635

Stats. Implemented: ORS 453.605 - 453.807

Hist.: HD 1-1991, f. & cert. ef. 1-8-91; PH 3-2003, f. & cert. ef. 3-27-03; PH 31-2004(Temp), f. & cert. ef. 10-8-04 thru 4-5-05; PH 36-2004, f. & cert. ef. 12-1-04; PH 4-2007, f. & cert. ef. 3-1-07; PH 14-2008, f. & cert. ef. 9-15-08; PH 4-2010, f. & cert. ef. 2-16-10