



UNITED STATES
NUCLEAR REGULATORY COMMISSION

WASHINGTON, D.C. 20555-0001

June 10, 1997

Mr. Robert Quillin, Director
Laboratory and Radiation Services Division
Department of Public Health and Environment
8100 Lowry Boulevard
Denver, CO 80220-6928

Dear Mr. Quillin:

We have completed our review of the proposed Colorado regulations sent to the Office of State Programs on April 2, 1997 as follows:

1. Expiration, Termination, and Timely Decommissioning of Licenses, RH 3.16, dated July 1, 1995. The proposed regulation was reviewed by comparison to the equivalent NRC regulations 10 CFR 30.36, 40.42, and 70.51. As a result of our review, we have one comment as enclosed.
2. Transportation of Radioactive Material, RH Part 17, dated January 1, 1997. The proposed regulations were reviewed by comparison with equivalent NRC regulations in 10 CFR 71. As a result of our review, we have eleven comments as enclosed.

Please note that we are providing comments only on issues that appear to conflict with Divisions 1 or 2 compatibility requirements. Also, please be aware that under our current procedure, a finding that a regulation meets the compatibility requirements may only be made based on a review of the final text of the regulation. However, we have determined that if the proposed regulations we reviewed were adopted incorporating our comments, and without other significant change, they would be compatible.

We request that when the proposed regulations are adopted and published as final regulations, a copy of the "as published" regulations be provided to us for review. As requested in our All Agreement States Letter SP-96-027, "Request to Highlight Changes to Agreement State Regulations Submitted to NRC for Compatibility Review" (March 1, 1996), please highlight the final changes and send one copy in a computer readable format, if possible.

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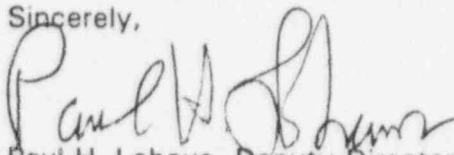
Mr. Robert Quillin

-2-

JUN 10 1997

If you have any questions regarding the comments, the compatibility criteria, or the NRC regulation used in the review, please contact me or Lance Rakovan of my staff at (301) 415-2589, or INTERNET: LJR2@NRC.GOV.

Sincerely,

A handwritten signature in black ink, appearing to read "Paul H. Lohaus", written over the typed name.

Paul H. Lohaus, Deputy Director
Office of State Programs

Enclosure:
As stated

COMMENTS ON PROPOSED COLORADO REGULATIONS

Note: All comments must be resolved to assure compatibility with NRC regulations.

<u>Div.</u>	<u>State Regulation</u>	<u>NRC Regulation</u>	<u>Subject and Comments</u>
2	--	30.36(j)(4)	In regard to decommissioning plans, there is no requirement in your regulations stating that records required by regulations similar to 10 CFR 30.51(d) and (f) must be received. The State must have such requirements for the purposes of compatibility.
1	RH 17.2	71.4	There is no definition for "state" in RH 17. Such a definition is needed for compatibility.
1	RH 17.2	71.4	The definition of "transport index" only includes non-fissile material packages. The State needs to have a definition for the transport index involving fissile material packages.
1	--	71.10	A section corresponding to 10 CFR 71.10, Exemption of low-level material, is not present in the regulations, yet is necessary for compatibility.
2	RH 17.8.2.1	71.13(b)(1)	RH 17.8.2.1 states that: "Fabrication of the package is satisfactory completed by April 1, 1996..." 10 CFR Part 71 states that fabrication should be completed by April 1, 1999.
2	RH 17.15.8	71.87(i)	No upper limit for non-fixed radioactive contamination is specified in RH 17.15.8. You need to add the phrase "...and within the limits specified in DOT regulations in 49 CFR 173.443" at the end of RH 17.15.8 to assure that licensees are aware of these DOT regulations.
2	--	71.89	A section corresponding to 10 CFR 71.89, "Opening instructions," is not present in the regulations, yet is necessary for compatibility.
2	RH 17.19.2	71.97(b)(3)	The phrase "the least of the following" should be added to RH 17.19.2.3 so that it reads: "The quantity of licensed material in a single package exceeds <u>the least of the following...</u> "

<u>Div.</u>	<u>State Regulation</u>	<u>NRC Regulation</u>	<u>Subject and Comments</u>
2	RH 17.19.4	71.97(c)(4)	NRC regulations specify that advanced notifications of transportation of nuclear waste must be retained by the licensee for 3 years. The 1 year specified by RH 17.19.4 is not sufficient.
2	RH 17.19.5	71.97(d)	NRC regulations specify that the name of the individual notified of any changes to schedule information must be retained by the licensee for 3 years. The 1 year specified by RH 17.19.5 is not sufficient.
2	RH 17.19.6	71.97(e)	NRC regulations specify that advanced notifications of nuclear waste shipment cancellations must be retained by the licensee for 3 years. The 1 year specified by RH 17.19.6 is not sufficient.
1	RH 17 App. A	71 App. A	The value for the specific activity of Cm-244 in Table A-1 should be $8.1\text{E}+01$ Ci/g, not $8.1\text{E}+05$ Ci/g.

Mr. Robert Quillin

-2-

If you have any questions regarding the comments, the compatibility criteria, or the NRC regulation used in the review, please contact me or Lance Rakovan of my staff at (301) 415-2589, or INTERNET: LJR2@NRC.GOV.

Sincerely,

Paul H. Lohaus, Deputy Director
Office of State Programs

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COMMENTS ON PROPOSED COLORADO REGULATIONS

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2	--	30.36(j)(4)	In regards to decommissioning plans, there is no requirement in your regulations stating that records required by regulations similar to 10CFR 30.51(d) and (f) must be received. You need to include regulations specifying the necessity of these records. <i>The State must have such requirements for the purposes of compatibility</i>
1	RH 17.2	71.4	There is no definition for "state" in RH 17. This definition must be present in the regulations. <i>Such a definition is needed for compatibility</i>
1	RH 17.2	71.4	The definition of "transport index" only includes non-fissile material packages. A definition for the transport index involving fissile material packages must be present in the regulations. <i>The State needs to have a</i>
1	--	71.10	A section corresponding to 10 CFR 71.10, Exemption of low-level material, is not present in the regulations, yet is necessary for compatibility. You need to add a section detailing exemption of low-level material.
2	RH 17.8.2.1	71.13(b)(1)	RH 17.8.2.1 states that: "Fabrication of the package is satisfactory completed by April 1, 1996..." 10 CFR Part 71 states that fabrication should be completed by April 1, 1999. You need to alter this date in your regulations. <i>when was rule required for compatibility? This date may reflect the 3 year grace period. - Ask Kathy.</i>
2	RH 17.15.8	71.87(i)	No upper limit for non-fixed radioactive contamination is specified in RH 17.15.8. You need to add the phrase "...and within the limits specified in DOT regulations in 49 CFR 173.443" at the end of RH 17.15.8 to assure that licensees meet these regulations. <i>are aware of DOT</i>
2	--	71.89	A section corresponding to 10 CFR 71.89, Opening instructions, is not present in the regulations. You need to add a section detailing opening instructions.
2	RH 17.19.2	71.97(b)(3)	You need to add the phrase "the least of the following" <i>should be added</i> to RH 17.19.2.3 so that it reads: "The quantity of licensed material in a single package exceeds <u>the least of the following</u> ..."

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Mr. Robert Quillin

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Sincerely,

Paul H. Lohaus, Deputy Director
Office of State Programs

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Sincerely,

Original Signed By:
PAUL H. LOHAUS

Paul H. Lohaus, Deputy Director
Office of State Programs

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MAIL CTRL. - 1997

TASK STARTED - 04/07/97

TASK DUE - 05/14/97

TASK COMPLETED - / /

TASK DESCRIPTION - COLORADO REGS. - TRANSPORTATION PART 71

REQUESTING OFF. - COL

REQUESTER - QUILLIN

WITS - 0 FYP - N

PROG. - LJR

PERSON -

STAFF LEAD - LJR

PROG. AREA -

PROJECT STATUS -

OSP DUE DATE: 5/15/97

PLANNED ACC. - N

LEVEL CODE - 1

PART 17

TRANSPORTATION OF RADIOACTIVE MATERIAL

RH 17.1 Purpose and Scope. The regulations in this part establish requirements for packaging, preparation for shipment, and transportation of radioactive material and apply to any person who transports radioactive material or delivers radioactive material to a carrier for transport.

RH 17.2 Definitions. As used in this part, the following definitions apply:

"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.

"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.

"Exclusive use" means the sole use by a single consignor of a conveyance 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.

"Fissile material" means plutonium-238, plutonium-239, plutonium-241, uranium-233, and uranium-235, or any combination of these radionuclides. 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.¹

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

¹Department jurisdiction extends only to "special nuclear material in quantities not sufficient to form a critical mass" as defined in Part 1 of these regulations.

"Low specific activity (LSA) material" means radioactive material 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:

(1) LSA-I.

- i. Ores containing only naturally occurring radionuclides (e.g., uranium, thorium) and uranium or thorium concentrates of such ores; or
- ii. Solid unirradiated natural uranium, depleted uranium, natural thorium, or their solid or liquid compounds or mixtures; or
- iii. Radioactive material, other than fissile material, for which the A_2 value is unlimited; or
- iv. Mill tailings, contaminated earth, concrete, rubble, other bulk debris, and activated material in which the radioactive material is essentially uniformly distributed, and the average specific activity does not exceed $10^{-6} A_2/g$.

(2) LSA-II.

- i. Water with tritium concentration up to 0.8 TBq/liter (20.0 Ci/liter); or
- ii. Material in which the radioactive material is distributed throughout, and the average specific activity does not exceed $10^{-4} A_2/g$ for solids and gases, and $10^{-5} A_2/g$ for liquids.

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

- i. 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.); and
- ii. 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 7 days, would not exceed $0.1 A_2$; and
- iii. The average specific activity of the solid does not exceed $2 \times 10^{-3} A_2/g$.

"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 alpha emitters with a half-life of less than 10 days.

"Packaging" means the assembly of components necessary to ensure compliance with the packaging requirements 49 CFR Part 173 Subpart I. 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.

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

"Regulations of the U.S. Nuclear Regulatory Commission" means the regulations in 10 CFR 71 for purposes of this Part.

"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.

"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:

- I. 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;
- II. 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
- iii. 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:
- I. 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 400 Bq/cm² (10⁻² microcurie/cm²) for beta, gamma and low toxicity alpha emitters or 40 Bq/cm² (10⁻³ microcurie/cm²) for all other alpha emitters;
 - II. 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 8x10⁵ Bq/cm² (20 microcuries/cm²) for beta, gamma and low toxicity alpha emitters, or 8x10⁴ Bq/cm² (2 microcuries/cm²) for all other alpha emitters; and
 - III. 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 8x10⁵ Bq/cm² (20 microcuries/cm²) for beta, gamma and low toxicity alpha emitters, or 8x10⁴ Bq/cm² (2 microcuries/cm²) for all other alpha emitters.

"Transport index" means the dimensionless number, rounded up 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 expressing the maximum radiation level at 1 meter (3.3 feet) from the external surface of the package in millisievert (mSv) per hour multiplied by 100 (equivalent to the maximum radiation level in millirem per hour at 1 meter).

"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 Appendix A of this Part 17 or may be determined by procedures described in Appendix A of this Part 17.

"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.

"Type B package" means a Type B packaging together with its radioactive contents.²

"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 10 CFR Part 71.

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

General Regulatory Provisions

- RH 17.3 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 Department or as exempted in RH 17.4.
- RH 17.4 Exemptions.
- 17.4.1 Common and contract carriers, freight forwarders, and warehouse workers which 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 Postal Service Manual (Domestic Mail Manual), are exempt from the requirements of this part 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 RH 17.3 and other applicable requirements of these regulations.
- 17.4.2 Any licensee is exempt from the requirements of this part to the extent that the licensee delivers to a carrier for transport a package containing radioactive material having a specific activity not greater than 70 Bq/g (0.002 microcurie per gram).
- RH 17.5 Transportation of Licensed Material.
- 17.5.1 Each licensee who transports licensed material outside the site of usage, as specified in the Department license, or where transport is on public highways, or who delivers licensed material to a carrier for transport, shall:

²A 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 RH 17.8.

17.5.1.1

Comply with the applicable requirements, appropriate to the mode of transport, of the regulations of the U.S. Department of Transportation, particularly the regulations of U.S. Department of transportation in the following areas:

- (1) Packaging - 49 CFR Part 173: Subparts A and B and I.
- (2) Marking and labeling - 49 CFR Part 172: Subpart D, §§ 172.400 through 172.407, §§ 172.436 through 172.440, and Subpart E.
- (3) Placarding - 49 CFR Part 172: Subpart F, especially §§ 172.500 through 172.519, 172.556, and Appendices B and C.
- (4) Accident reporting - 49 CFR Part 171: §§ 171.15 and 171.16.
- (5) Shipping papers and emergency information - 49 CFR Part 172: Subparts C and G.
- (6) Hazardous material employee training - 49 CFR Part 172: Subpart H.
- (7) Hazardous material shipper/carrier registration - 49 CFR Part 107: Subpart G.

17.5.1.2

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

- (1) Rail - 49 CFR Part 174: Subparts A through D and K.
- (2) Air - 49 CFR Part 175.
- (3) Vessel - 49 CFR Part 176: Subparts A through F and M.
- (4) Public highway - 49 CFR Part 177 and Parts 390 through 397.

17.5.1.3

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

17.5.2

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 to the same extent as if the shipment was subject to the regulations.

General Licenses

RH 17.6 General Licenses for Carriers.

- 17.6.1 A general license is hereby issued to any common or contract carrier not exempt under RH 17.4 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.³
- 17.6.2 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
- 17.6.3 Persons who transport radioactive material pursuant to the general licenses in RH 17.6.1 or 17.6.2 are exempt from the requirements of Parts 4 and 10 of these regulations to the extent that they transport radioactive material.

RH 17.7 General License: Nuclear Regulatory Commission-Approved Packages.

- 17.7.1 A general license is hereby issued to any licensee of the Department to transport, or to deliver to a carrier for transport, licensed material in a package for which a license, certificate of compliance, or other approval has been issued by the Nuclear Regulatory Commission.
- 17.7.2 This general license applies only to a licensee who:
- 17.7.2.1 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 action to be taken prior to shipment;
- 17.7.2.2 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 this Part 17;

³Notification of an incident shall be filed with, or made to, the Department as prescribed in 49 CFR, regardless of and in addition to the notification made to the U.S. Department of Transportation or other agencies.

- 17.7.2.3 Prior to the licensee's first use of the package, has registered with the Nuclear Regulatory Commission; and
- 17.7.2.4 Has a quality assurance program required by RH 17.20.
- 17.7.3 The general license in RH 17.7.1 applies only when the package approval authorizes use of the package under this general license.
- 17.7.4 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 RH 17.8.
- RH 17.8 General License: Previously Approved Type B Packages.
- 17.8.1 A Type B package previously approved by the Nuclear Regulatory Commission, but not designated as B(U) or B(M) in the Nuclear Regulatory Commission certificate of compliance, may be used under the general license of RH 17.7 with the following additional conditions:
- 17.8.1.1 Fabrication of the packaging was satisfactorily completed before August 31, 1986, as demonstrated by application of its model number in accordance with Nuclear Regulatory Commission regulations at 10 CFR 71.85(c);
- 17.8.1.2 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
- 17.8.1.3 A serial number which uniquely identifies each packaging which conforms to the approved design is assigned to, and legibly and durably marked on, the outside of each packaging.
- 17.8.2 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 RH 17.7 with the following additional conditions:
- 17.8.2.1 Fabrication of the package is satisfactorily completed by April 1, 1996, as demonstrated by application of its model number in accordance with Nuclear Regulatory Commission regulations at 10 CFR 71.85(c);
- 17.8.2.2 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

- 17.8.2.3 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.
- RH 17.9 General License: U.S. Department of Transportation Specification Container.
- 17.9.1 A general license is issued to any licensee of the Department to transport, or to deliver to a carrier for transport, licensed material in a specification container for fissile material or for a Type B quantity of radioactive material as specified in 49 CFR Parts 173 and 178.
- 17.9.2 This general license applies only to a licensee who:
- 17.9.2.1 Has a copy of the specification;
- 17.9.2.2 Complies with the terms and conditions of the specification and the applicable requirements of this Part 17; and
- 17.9.2.3 Has a quality assurance program required by 17.20.
- 17.9.3 The general license in RH 17.9.1 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.
- RH 17.10 General License: Use of Foreign Approved Package.
- 17.10.1 A general license is issued to any licensee of the Department 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 and revalidated by the U.S. Department of Transportation as meeting the applicable requirements of 49 CFR 171.12.
- 17.10.2 This general license applies only to international shipments.
- 17.10.3 This general license applies only to a licensee who:
- 17.10.3.1 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;
- 17.10.3.2 Complies with the terms and conditions of the certificate and revalidation, and with the applicable requirements of this Part 17; and
- 17.10.3.3 Has a quality assurance program approved by the Nuclear Regulatory Commission.

- RH 17.11 General License: Fissile Material, Limited Quantity per Package.
- 17.11.1 A general license is hereby issued to any licensee to transport fissile material, or to deliver fissile material to a carrier for transport, if the material is shipped in accordance with this section.
- 17.11.2 This general license applies only when a package contains no more than a Type A quantity of radioactive material, including only one of the following:
- 17.11.2.1 Up to 40 grams of uranium-235; or
- 17.11.2.2 Up to 30 grams of uranium-233; or
- 17.11.2.3 Up to 25 grams of the fissile radionuclides of plutonium, except that for encapsulated plutonium-beryllium neutron sources in special form, an A₁ quantity of plutonium may be present; or
- 17.11.2.4 A combination of fissile radionuclides in which the sum of the ratios of the amount of each radionuclide to the corresponding maximum amount in RH 17.11.2.1, 17.11.2.2, and 17.11.2.3 does not exceed unity.
- 17.11.3 Except as specified in RH 17.11.3.2, this general license applies:
- 17.11.3.1 only when a package containing more than 15 grams of fissile radionuclides is labeled with a transport index not less than the number given by the following equation:
- Minimum Transport Index =
(0.40x + 0.67y + z) (1 - 15/(x+y+z))
- where the package contains x grams of uranium-235, y grams of uranium-233, and z grams of the fissile radionuclides of plutonium;
- 17.11.3.2 For a package in which the only fissile material is in the form of encapsulated plutonium-beryllium neutron sources in special form, the transport index based on criticality considerations may be taken as 0.026 times the number of grams of the fissile radionuclides of plutonium in excess of 15 grams.
- 17.11.3.3 In all cases, the transport index must be rounded up to one decimal place and shall not exceed 10.0.
- RH 17.12 General License: Fissile Material, Limited Moderator per Package.
- 17.12.1 A general license is hereby issued to any licensee to transport fissile material, or to deliver fissile material to a carrier for transport, if the material is shipped in accordance with this section.
- 17.12.2 This general license applies only when all of the following requirements are met.

- 17.12.2.1 The package contains no more than a Type A quantity of radioactive material.
- 17.12.2.2 Neither beryllium nor hydrogenous material enriched in deuterium is present.
- 17.12.2.3 The total mass of graphite present does not exceed 7.7 times the total mass of uranium-235 plus plutonium.
- 17.12.2.4 Substances having a higher hydrogen density than water, for example certain hydrocarbon oils, are not present, except that polyethylene may be used for packing or wrapping.
- 17.12.2.5 Uranium-233 is not present, and the amount of plutonium does not exceed 1 percent of the amount of uranium-235.
- 17.12.2.6 The amount of uranium-235 is limited as follows:
- 17.12.2.6.1 If the fissile radionuclides are not uniformly distributed, the maximum amount of uranium-235 per package may not exceed the value given in the following Table 1:
- 17.12.2.6.2 If the fissile radionuclides are distributed uniformly, for example, cannot form a lattice arrangement within the packaging, the maximum amount of uranium-235 per package may not exceed the value given in the following Table 2:
- 17.12.2.7 The transport index of each package based on criticality considerations is taken as 10 times the number of grams of uranium-235 in the package divided by the maximum allowable number of grams per package in accordance with Table 1 or 2 of this section as applicable.

TABLE 1: PERMISSIBLE MASS OF URANIUM-235 PER FISSILE MATERIAL PACKAGE
[NONUNIFORM DISTRIBUTION]

<u>Uranium enrichment in weight percent of uranium-235 not exceeding</u>	<u>Permissible maximum grams of uranium-235 per package</u>
24	40
20	42
15	45
11	48
10	51
9.5	52
9	54
8.5	55
8	57
7.5	59
7	60
6.5	62
6	65
5.5	68
5	72
4.5	76
4	80
3.5	88
3	100
2.5	120
2	164
1.5	272
1.35	320
1	680*
0.92	1200*

TABLE 2: PERMISSIBLE MASS OF URANIUM-235 PER FISSILE MATERIAL PACKAGE
[UNIFORM DISTRIBUTION]

<u>Uranium enrichment in weight percent of uranium-235 not exceeding</u>	<u>Permissible maximum grams of uranium-235 per package</u>
4	84
3.5	92
3	112
2.5	148
2	240
1.5	560*
1.35	800*

* Pursuant to the Department's agreement with the Nuclear Regulatory Commission, jurisdiction extends only to 350 grams of uranium-235.

Operating Controls and Procedures

- RH 17.13 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.
- RH 17.24 Preliminary Determinations. Prior to the first use of any packaging for the shipment of radioactive material:
- 17.14.1 The licensee shall ascertain that there are no defects which could significantly reduce the effectiveness of the packaging;
 - 17.14.2 Where the maximum normal operating pressure will exceed 35 kilopascal (5 pounds per square inch) gauge, the licensee shall test the containment systems at an internal pressure at least 50 percent higher than the maximum normal operating pressure to verify the capability of that system to maintain its structural integrity at that pressure;
 - 17.14.3 The licensee shall determine that the packaging has been fabricated in accordance with the design approved by the Nuclear Regulatory Commission; and
 - 17.14.4 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 Nuclear Regulatory Commission.
- RH 17.15 Routine Determinations. Prior to each shipment of licensed material, the licensee shall determine that:
- 17.15.1 The package is proper for the contents to be shipped;
 - 17.15.2 The package is in unimpaired physical condition except for superficial defects such as marks or dents;
 - 17.15.3 Each closure device of the packaging, including any required gasket, is properly installed and secured and free of defects;
 - 17.15.4 Any system for containing liquid is adequately sealed and has adequate space or other specified provision for expansion of the liquid;
 - 17.15.5 Any pressure relief device is operable and set in accordance with written procedures;
 - 17.15.6 The package has been loaded and closed in accordance with written procedures;
 - 17.15.7 Any structural part of the package which could be used to lift or tie down the package during transport is rendered inoperable for the purpose unless it satisfies design requirements specified in 10 CFR 71.45;

- 17.15.8 The level of non-fixed (removable) radioactive contamination on the external surfaces of each package offered for shipment is as low as reasonably achievable.
- 17.15.8.1 The level of non-fixed (removable) radioactive contamination may be determined by wiping an area of 300 square centimeters of the surface concerned with an absorbent material, using moderate pressure, and measuring the activity on the wiping material. Sufficient measurements must be taken in the most appropriate locations to yield a representative assessment of the removable contamination levels. Except as provided in RH 17.15.8.2, the amount of radioactivity measured on any single wiping material, when averaged over the surface wiped, must not exceed the limits given in Table 3 below at any time during transport. Other methods of assessment of equal or greater efficiency may be used. When other methods are used, the detection efficiency of the method used must be taken in account and in no case may the removable contamination on the external surfaces of the package exceed 10 times the limits listed in Table 3.
- 17.15.8.2 In the case of packages transported as exclusive use shipments by rail or highway only, the non-fixed (removable) radioactive contamination at any time during transport must not exceed 10 times the levels prescribed in RH 17.15.8.1. The levels at the beginning of transport must not exceed the levels in RH 17.15.8.1.
- 17.15.9 External radiation levels around the package and around the vehicle, if applicable will not exceed 2 mSv/h (200 millirems per hour) at any point on the external surface of the package at any time during transportation. The transport index shall not exceed 10.0;

TABLE 3: NON-FIXED (REMOVABLE) EXTERNAL RADIOACTIVE CONTAMINATION WIPE LIMITS

Contaminant	Maximum Permissible Limits		
	Bq/cm ²	uCi/cm ²	dpm/cm ²
Beta and gamma emitters and low toxicity alpha emitters	0.4	10 ⁻⁵	22
All other alpha emitting radionuclides	0.04	10 ⁻⁶	2.2

- 17.15.10 For a package transported in exclusive use by rail, highway or water, radiation levels external to the package may exceed the limits specified in RH 17.15.9 but shall not exceed any of the following:

- 17.15.10.1 2 mSv/h (200 millirems per hour) on the accessible external surface of the package unless the following conditions are met, in which case the limit is 10 mSv/h (1000 millirems per hour);
- 17.15.10.1.1 The shipment is made in a closed transport vehicle,
- 17.15.10.1.2 Provisions are made to secure the package so that its position within the vehicle remains fixed during transportation, and
- 17.15.10.1.3 There are no loading or unloading operations between the beginning and end of the transportation.
- 17.15.10.2 2 mSv/h (200 millirems per hour) at any point on the outer surface of the vehicle, including the upper and lower surfaces, or, in the case of a flat-bed style vehicle, with a personnel barrier*, at any point on the vertical planes projected from the outer edges of the vehicle, on the upper surface of the load (or enclosure, if used), and on the lower external surface of the vehicle;
- 17.15.10.3 0.1 mSv/h (10 millirems per hour) at any point 2 meters from the vertical planes represented by the outer lateral surfaces of the vehicle, or, in the case of a flat-bed style vehicle, at any point 2 meters from the vertical planes projected from the outer edges of the vehicle; and
- 17.15.10.4 0.02 mSv/h (2 millirems per hour) in any normally occupied positions of the vehicle, except that this provision does not apply to private motor carriers when persons occupying these positions are provided with special health supervision, personnel radiation exposure monitoring devices, and training in accordance with RH 10.3 of these regulations; and
- 17.15.11 A package must be prepared for transport so that in still air at 100 degrees Fahrenheit (38 degrees Celsius) and in the shade, no accessible surface of a package would have a temperature exceeding 122 degrees Fahrenheit (50 degrees Celsius) in a nonexclusive use shipment or 180 degrees Fahrenheit (82 degrees Celsius) in an exclusive use shipment. Accessible package surface temperatures shall not exceed these limits at any time during transportation.
- 17.15.12 A package may not incorporate a feature intended to allow continuous venting during transport.

* A flat-bed style vehicle with a personnel barrier shall have radiation levels determined at vertical planes. If no personnel barrier is in place, the package cannot exceed 2 mSv/h (200 millirems per hour) at any accessible surface.

- RH 17.16 Air Transport of Plutonium. Notwithstanding the provisions of any general licenses and notwithstanding any exemptions stated directly in this part or included indirectly by citation of the U.S. Department of Transportation regulations, 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:
- 17.16.1 The plutonium is contained in a medical device designed for individual human application; or
 - 17.16.2 The plutonium is contained in a material in which the specific activity is not greater than 70 Bq/g (0.002 microcuries per gram) of material and in which the radioactivity is essentially uniformly distributed; or
 - 17.16.3 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 RH 17.5; or
 - 17.16.4 The plutonium is shipped in a package specifically authorized (in the certificate of compliance issued by the Nuclear Regulatory Commission for that package) for the shipment of plutonium by air and the licensee requires, through special arrangement with the carrier, compliance with 49 CFR 175.704, the U.S. Department of Transportation regulations applicable to the air transport of plutonium.
- RH 17.17 Shipment Records. Each licensee shall maintain, for a period of 2 years after shipment, a record of each shipment of licensed material not exempt under RH 17.4 showing, where applicable:
- 17.17.1 Identification of the packaging by model number and serial number;
 - 17.17.2 Verification that the packaging, as shipped, had no significant defect;
 - 17.17.3 Volume and identification of coolant;
 - 17.17.4 Type and quantity of licensed material in each package, and the total quantity of each shipment;
 - 17.17.5 Date of the shipment;
 - 17.17.6 Name and address of the transferee;
 - 17.17.7 Address to which the shipment was made; and
 - 17.17.8 Results of the determinations required by RH 17.15 and by the conditions of the package approval.
- RH 17.18 Reports. The licensee shall report to the Department within 30 days:
- 17.18.1 Any instance in which there is significant reduction in the effectiveness of any packaging during use; and

- 17.18.2 Details of any defects with safety significance in the packaging after first use, with the means employed to repair the defects and prevent their recurrence; or
- 17.18.3 Instances in which the conditions of approval in the certificate of compliance were not observed in making a shipment.
- RH 17.19 Advance Notification of Transport of Nuclear Waste.
- 17.19.1 Prior to the transport of any nuclear waste outside of the confines of the licensee's facility or other place of use or storage, or prior to the delivery of any nuclear waste to a carrier for transport, each licensee shall provide advance notification of such transport to the governor, or governor's designee, of each state through which the waste will be transported.
- 17.19.2 Advance notification is required only when:
- 17.19.2.1 The nuclear waste is required to be in Type B packaging for transportation;
- 17.19.2.2 The nuclear waste is being transported into, within, or through, a state enroute to a disposal facility or to a collection point for transport to a disposal facility; and
- 17.19.2.3 The quantity of licensed material in a single package exceeds;
- 17.19.2.3.1 3000 times the A_1 value of the radionuclides as specified in Appendix A, Table A-1 for special form radioactive material;
- 17.19.2.3.2 3000 times the A_2 value of the radionuclides as specified in Appendix A, Table A-1 for normal form radioactive material;
- 17.19.2.3.3 1000 TBq (27,000 Ci);
- 17.19.3 Each advance notification required by RH 17.19.1 shall contain the following information:
- 17.19.3.1 The name, address, and telephone number of the shipper, carrier, and receiver of the shipment;

'A list of the mailing addresses of the governors and governors' designees is available upon request from the Director, Office of State Programs, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555. The list will be published annually in the Federal Register on or about June 30 to reflect any changes in information.

- 17.19.3.2 A description of the nuclear waste contained in the shipment as required by 49 CFR 172.202 and 172.203(d);
- 17.19.3.3 The point of origin of the shipment and the 7-day period during which departure of the shipment is estimated to occur;
- 17.19.3.4 The 7-day period during which arrival of the shipment at state boundaries is estimated to occur;
- 17.19.3.5 The destination of the shipment, and the 7-day period during which arrival of the shipment is estimated to occur; and
- 17.19.3.6 A point of contact with a telephone number for current shipment information.
- 17.19.4 The notification required by RH 17.19.1 shall be made in writing to the office of each appropriate governor, or governor's designee, and to the Department. A notification delivered by mail must be postmarked at least 7 days before the beginning of the 7-day period during which departure of the shipment is estimated to occur. A notification delivered by messenger must reach the office of the governor, or governor's designee, at least 4 days before the beginning of the 7-day period during which departure of the shipment is estimated to occur. A copy of the notification shall be retained by the licensee for 1 year.
- 17.19.5 The licensee shall notify each appropriate governor, or governor's designee, and the Department of any changes to schedule information provided pursuant to RH 17.19.1. Such notification shall be by telephone to a responsible individual in the office of the governor, or governor's designee, of the appropriate state or states. The licensee shall maintain for 1 year a record of the name of the individual contacted.
- 17.19.6 Each licensee who cancels a nuclear waste shipment, for which advance notification has been sent, shall send a cancellation notice to the governor, or governor's designee, of each appropriate state and to the Department. A copy of the notice shall be retained by the licensee for 1 year.

Quality Assurance

- RH 17.20 Quality Assurance Requirements.
- 17.20.1 Unless otherwise authorized by the agency, each licensee shall establish, maintain, and execute a quality assurance program to verify by procedures such as checking, auditing, and inspection that deficiencies, deviations, and defective material and equipment relating to the shipment of packages containing radioactive material are promptly identified and corrected.
- 17.20.2 The licensee shall identify the material and components to be covered by the quality assurance program.

- 17.20.3 Each licensee shall document the quality assurance program by written procedures or instructions and shall carry out the program in accordance with those procedures throughout the period during which packaging is used.
- 17.20.4 Prior to the use of any package for the shipment of radioactive material, each licensee shall obtain approval by the Department of its quality assurance program.
- 17.20.5 The licensee shall maintain sufficient written records to demonstrate compliance with the quality assurance program. Records of quality assurance pertaining to the use of a package for shipment of radioactive material shall be maintained for a period of 3 years after shipment.
- 17.21 Referenced Materials
- 17.21.1 This Part 17 of these regulations 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 control division. 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:
- Director, Radiation Control Division (RCD-DO-B1)
Colorado Department of Public Health and Environment
4300 Cherry Creek Drive South
Denver, Colorado 80222-1530
- 17.21.2 Any material that has been incorporated by reference may be examined in any state publications depository library. Copies of the incorporated materials have been sent to the state publications depository and distribution center, and are available for interlibrary loan.
- 17.21.3 Material referenced in this Part 17 of the regulations does not include amendments to or revised editions of the material published later than the effective date of the relevant section.

Appendix A to Part 17 - Determination of A_1 and A_2

- I. Values of A_1 and A_2 for individual radionuclides, which are the bases for many activity limits elsewhere in these regulations are given in Table A-1. The curie (Ci) values specified are obtained by converting from the Terabecquerel (TBq) figure. The curie values are expressed to three significant figures to assure that the difference in the TBq and Ci quantities is one tenth of one percent or less. Where values of A_1 or A_2 are unlimited, it is for radiation control purposes only. For nuclear criticality safety, some materials are subject to controls placed on fissile material.
- II. For individual radionuclides whose identities are known, but which are not listed in Table A-1, the determination of the values of A_1 and A_2 requires Department approval, except that the values of A_1 and A_2 in Table A-2 may be used without obtaining Agency approval.
- III. In the calculations of A_1 and A_2 for a radionuclide not in Table A-1, a single radioactive decay chain, in which radionuclides are present in their naturally occurring proportions, and in which no daughter nuclide has a half-life either longer than 10 days, or longer than that of the parent nuclide, shall be considered as a single radionuclide, and the activity to be taken into account, and the A_1 or A_2 value to be applied shall be those corresponding to the parent nuclide of that chain. In the case of radioactive decay chains in which any daughter nuclide has a half-life either longer than 10 days, or greater than that of the parent nuclide, the parent and those daughter nuclides shall be considered as mixtures of different nuclides.
- IV. For mixtures of radionuclides whose identities and respective activities are known, the following conditions apply:
 - (a) For special form radioactive material, the maximum quantity transported in a Type A package:

$$\sum_I \frac{B(i)}{A_1(i)} \text{ less than or equal to } 1$$
 - (b) For normal form radioactive material, the maximum quantity transported in a Type A package:

$$\sum_I \frac{B(i)}{A_2(i)} \text{ less than or equal to } 1$$

where $B(i)$ is the activity of radionuclide I and $A_1(i)$ and $A_2(i)$ are the A_1 and A_2 values for radionuclide respectively.

Alternatively, an A_1 value for mixtures of special form material may be determined as follows:

$$A_1 \text{ for mixture} = \frac{1}{\sum_I \frac{f(i)}{A_1(i)}}$$

where $f(i)$ is the fraction of activity of nuclide I in the mixture and $A_1(i)$ is the appropriate A_1 value for nuclide I .

An A_2 value for mixtures of normal form material may be determined as follows:

$$A_2 \text{ for mixture} = \frac{1}{\sum_I \frac{f(i)}{A_2(i)}}$$

where $f(i)$ is the fraction of activity of nuclide I in the mixture and $A_2(i)$ is the appropriate A_2 value for nuclide I .

- V. When the identity of each radionuclide is known, but the individual activities of some of the radionuclides are not known, the radionuclides may be grouped and the lowest A_1 or A_2 value, as appropriate, for the radionuclides in each group may be used in applying the formulas in paragraph IV. Groups may be based on the total alpha activity and the total beta/gamma activity when these are known, using the lowest A_1 or A_2 values for the alpha emitters and beta/gamma emitters.

Table A-1: A_1 and A_2 Values for Radionuclides

Symbol of Radionuclide	Element and Atomic No.	A_1 (TBq)	A_1 (Ci)	A_2 (TBq)	A_2 (Ci)	Specific Activity (TBq/g)	Specific Activity (Ci/g)
Ac-225	Actinium(89)	0.6	16.2	1×10^{-2}	0.270	2.1×10^3	5.8×10^4
Ac-227		40	1080	2×10^{-5}	5.41×10^{-4}	2.7	7.2×10^1
Ac-228		0.6	16.2	0.4	10.8	8.4×10^4	2.2×10^6
Ag-105	Silver(47)	2	54.1	2	54.1	1.1×10^3	3.0×10^4
Ag-108m		0.6	16.2	0.6	16.2	9.7×10^{-1}	2.6×10^1
Ag-110m	Aluminum(13)	0.4	10.8	0.4	10.8	1.8×10^2	4.7×10^3
Ag-111		0.6	16.2	0.5	13.5	5.8×10^3	1.6×10^5
Al-26		0.4	10.8	0.4	10.8	7.0×10^{-4}	1.9×10^{-2}
Am-241		2	54.1	2×10^{-4}	5.41×10^{-3}	1.3×10^{-1}	3.4
Am-242m		2	54.1	2×10^{-4}	5.41×10^{-3}	3.6×10^{-1}	1.0×10^1
Am-243	Argon(18)	2	54.1	2×10^{-4}	5.41×10^{-3}	7.4×10^{-3}	2.0×10^{-1}
Ar-37		40	1080	40	1080	3.7×10^3	9.9×10^4
Ar-39		20	54.1	20	54.1	1.3	3.4×10^1
Ar-41		0.6	16.2	0.6	16.2	1.5×10^6	4.2×10^7
Ar-42		0.2	5.41	0.2	5.41	9.6	2.6×10^2
As-72	Arsenic(33)	0.2	5.41	0.2	5.41	6.2×10^4	1.7×10^6
As-73		40	1080	40	1080	8.2×10^2	2.2×10^4
As-74		1	27.0	0.5	13.5	3.7×10^3	9.9×10^4
As-76		0.2	5.41	0.2	5.41	5.8×10^4	1.6×10^6
As-77		20	54.1	0.5	13.5	3.9×10^4	1.0×10^6
At-211	Astatine(85)	30	81.1	2	54.1	7.6×10^4	2.1×10^6
Au-193	Gold(79)	6	162	6	162	3.4×10^4	9.2×10^5
Au-194		1	27.0	1	27.0	1.5×10^4	4.1×10^5
Au-195		10	270	10	270	1.4×10^2	3.7×10^3
Au-196		2	54.1	2	54.1	4.0×10^3	1.1×10^5
Au-198	Barium(56)	3	81.1	0.5	13.5	9.0×10^3	2.4×10^5
Au-199		10	270	0.9	24.3	7.7×10^3	2.1×10^5
Ba-131		2	54.1	2	54.1	3.1×10^3	8.4×10^4
Ba-133m		10	270	0.9	24.3	2.2×10^4	6.1×10^5
Ba-133		3	81.1	3	81.1	9.4	2.6×10^2
Ba-140	Beryllium(4)	0.4	10.8	0.4	10.8	2.7×10^3	7.3×10^4
Be-7		20	54.1	20	54.1	1.3×10^4	3.5×10^5
Be-10		20	54.1	0.5	13.5	8.3×10^{-4}	2.2×10^{-2}
Bi-204	Bismuth(83)	0.6	16.2	0.6	16.2	1.5×10^3	4.2×10^4
Bi-206		0.3	8.11	0.3	8.11	3.8×10^3	1.0×10^5
Bi-207	Berkelium(97)	0.7	18.9	0.7	18.9	1.9	5.2×10^1
Bi-210m		0.3	8.11	3×10^{-2}	0.811	2.1×10^{-5}	5.7×10^{-4}
Bi-210		0.6	16.2	0.5	13.5	4.6×10^3	1.2×10^5
Bi-212		0.3	8.11	0.3	8.11	5.4×10^5	1.5×10^7
Bk-247		2	54.1	2×10^{-4}	5.41×10^{-3}	3.8×10^{-2}	1.0

Table A-1 (Cont.)

Symbol of Radionuclide	Element and Atomic No.	A ₁ (TBq)	A ₁ (Ci)	A ₂ (TBq)	A ₂ (Ci)	Specific Activity (TBq/g)	Specific Activity (Ci/g)
Bk-249	Bromine(35)	40	1080	8x10 ⁻²	2.16	6.1x10 ¹	1.6x10 ³
Br-76		0.3	8.11	0.3	8.11	9.4x10 ⁴	2.5x10 ⁶
Br-77		3	81.1	3	81.1	2.6x10 ⁴	7.1x10 ⁵
Br-82		0.4	10.8	0.4	10.8	4.0x10 ⁴	1.1x10 ⁶
C-11	Carbon(6)	1	27	0.5	13.5	3.1x10 ⁷	8.4x10 ⁸
C-14		40	1080	2	54.1	1.6x10 ⁻¹	4.5
Ca-41		40	1080	40	1080	3.1x10 ⁻³	8.5x10 ⁻²
Ca-45		40	1080	0.9	24.3	6.6x10 ⁻²	1.8x10 ⁻⁴
Ca-47	Cadmium(48)	0.9	24.3	0.5	13.5	2.3x10 ⁻⁴	6.1x10 ⁻⁵
Cd-109		40	1080	1	27.0	9.6x10 ⁻¹	2.6x10 ⁻³
Cd-113m		20	541	9x10 ⁻²	2.43	8.3x10 ⁻⁴	2.2x10 ⁻²
Cd-115m		0.3	8.11	0.3	8.11	9.4x10 ⁻²	2.5x10 ⁻⁴
Cd-115	Cerium(58)	4	108	0.5	13.5	1.9x10 ⁻⁴	5.1x10 ⁻⁵
Ce-139		6	162	6	162	2.5x10 ⁻²	6.8x10 ⁻³
Ce-141		10	270	0.5	13.5	1.1x10 ⁻³	2.8x10 ⁻⁴
Ce-143		0.6	16.2	0.5	13.5	2.5x10 ⁻⁴	6.6x10 ⁻⁵
Ce-144	Californium(98)	0.2	5.41	0.2	5.41	1.2x10 ⁻²	3.2x10 ⁻³
Cf-248		30	811	3x10 ⁻³	8.11x10 ⁻²	5.8x10 ⁻¹	1.6x10 ⁻¹
Cf-249		2	54.1	2x10 ⁻⁴	5.41x10 ⁻³	1.5x10 ⁻¹	4.1
Cf-250		5	135	5x10 ⁻⁴	1.35x10 ⁻²	4.0	1.1x10 ⁻²
Cf-251	Chlorine(17)	2	54.1	2x10 ⁻⁴	5.41x10 ⁻³	5.9x10 ⁻²	1.6
Cf-252		0.1	2.70	1x10 ⁻³	2.70x10 ⁻²	2.0x10 ⁻¹	5.4x10 ⁻²
Cf-253		40	1080	6x10 ⁻²	1.62	1.1x10 ⁻³	2.9x10 ⁻⁴
Cf-254		3x10 ⁻³	8.11x10 ⁻²	6x10 ⁻⁴	1.62x10 ⁻²	3.1x10 ⁻²	8.5x10 ⁻³
Cl-36	Curium(96)	20	541	0.5	13.5	1.2x10 ⁻³	3.3x10 ⁻²
Cl-38		0.2	5.41	0.2	5.41	4.9x10 ⁻⁶	1.3x10 ⁻⁸
Cm-240		40	1080	2x10 ⁻²	0.541	7.5x10 ⁻²	2.0x10 ⁻⁴
Cm-241		2	54.1	0.9	24.3	6.1x10 ⁻³	1.7x10 ⁻⁴
Cm-242	Cobalt(27)	40	1080	1x10 ⁻²	0.270	1.2x10 ⁻²	3.3x10 ⁻³
Cm-243		3	81.1	3x10 ⁻⁴	8.11x10 ⁻³	1.9	5.2x10 ⁻¹
Cm-244		4	108	4x10 ⁻⁴	1.08x10 ⁻²	3.0	8.1x10 ⁻⁵
Cm-245		2	54.1	2x10 ⁻⁴	5.41x10 ⁻³	6.4x10 ⁻³	1.7x10 ⁻¹
Cm-246	Cobalt(27)	2	54.1	2x10 ⁻⁴	5.41x10 ⁻³	1.1x10 ⁻²	3.1x10 ⁻¹
Cm-247		2	54.1	2x10 ⁻⁴	5.41x10 ⁻³	3.4x10 ⁻⁶	9.3x10 ⁻⁵
Cm-248		4x10 ⁻²	1.08	5x10 ⁻⁵	1.35x10 ⁻³	1.6x10 ⁻⁴	4.2x10 ⁻³
Co-55		0.5	13.5	0.5	13.5	1.1x10 ⁻⁵	3.1x10 ⁻⁶
Co-56	Chromium(24)	0.3	8.11	0.3	8.11	1.1x10 ⁻³	3.0x10 ⁻⁴
Co-57		8	216	8	216	3.1x10 ⁻²	8.4x10 ⁻³
Co-58m		40	1080	40	1080	2.2x10 ⁻⁵	5.9x10 ⁻⁶
Co-58		1	27.0	1	27.0	1.2x10 ⁻³	3.2x10 ⁻⁴
Co-60	Cesium(55)	0.4	10.8	0.4	10.8	4.2x10 ⁻¹	1.1x10 ⁻³
Cr-51		30	811	30	811	3.4x10 ⁻³	9.2x10 ⁻⁴
Cs-129		4	108	4	108	2.8x10 ⁻⁴	7.6x10 ⁻⁵

Table A-1 (Cont.)

Symbol of Radionuclide	Element and Atomic No.	A ₁ (TBq)	A ₁ (Ci)	A ₂ (TBq)	A ₂ (Ci)	Specific Activity (TBq/g)	Specific Activity (Ci/g)
Cs-131		40	1080	40	1080	3.8x10 ³	1.0x10 ⁵
Cs-132		1	27.0	1	27.0	5.7x10 ³	1.5x10 ⁵
Cs-134m		40	1080	9	243	3.0x10 ⁵	8.0x10 ⁶
Cs-134		0.6	16.2	0.5	13.5	4.8x10 ¹	1.3x10 ³
Cs-135		40	1080	0.9	24.3	4.3x10 ⁻⁵	1.2x10 ⁻³
Cs-136		0.5	13.5	0.5	13.5	2.7x10 ³	7.3x10 ⁴
Cs-137		2	54.1	0.5	13.5	3.2	8.7x10 ¹
Cu-64	Copper(29)	5	135	0.9	24.3	1.4x10 ⁵	3.9x10 ⁶
Cu-67		9	243	0.9	24.3	2.8x10 ⁴	7.6x10 ⁵
Dy-159	Dysprosium(66)	20	541	20	541	2.1x10 ²	5.7x10 ³
Dy-165		0.6	16.2	0.5	13.5	3.0x10 ⁵	8.2x10 ⁶
Dy-166		0.3	8.11	0.3	8.11	8.6x10 ³	2.3x10 ⁵
Er-169	Erbium(68)	40	1080	0.9	24.3	3.1x10 ³	8.3x10 ⁴
Er-171		0.6	16.2	0.5	13.5	9.0x10 ⁴	2.4x10 ⁶
Es-253	Einsteinium(99)*	200	5400	2.1x10 ⁻²	5.4x10 ⁻¹	--	--
Es-254		30	811	3x10 ⁻³	8.11x10 ⁻²	--	--
Es-254m		0.6	16.2	0.4	10.8	--	--
Es-255		--	--	--	--	--	--
Eu-147	Europium(63)	2	54.1	2	54.1	1.4x10 ³	3.7x10 ⁴
Eu-148		0.5	13.5	0.5	13.5	6.0x10 ²	1.6x10 ⁴
Eu-149		20	541	20	541	3.5x10 ²	9.4x10 ³
Eu-150		0.7	18.9	0.7	18.9	6.1x10 ⁴	1.6x10 ⁶
Eu-152m		0.6	16.2	0.5	13.5	8.2x10 ⁴	2.2x10 ⁶
Eu-152		0.9	24.3	0.9	24.3	6.5	1.8x10 ²
Eu-154		0.8	21.6	0.5	13.5	9.8	2.6x10 ²
Eu-155		20	541	2	54.1	1.8x10 ¹	4.9x10 ²
Eu-156		0.6	16.2	0.5	13.5	2.0x10 ³	5.5x10 ⁴
F-18	Fluorine(9)	1	27.0	0.5	13.5	3.5x10 ⁶	9.5x10 ⁷
Fe-52	Iron(26)	0.2	5.41	0.2	5.41	2.7x10 ⁵	7.3x10 ⁶
Fe-55		40	1080	40	1080	8.8x10 ¹	2.4x10 ³
Fe-59		0.8	21.6	0.8	21.6	1.8x10 ³	5.0x10 ⁴
Fe-60		40	1080	0.2	5.41	7.4x10 ⁻⁴	2.0x10 ⁻²

*International shipments of Einsteinium require multilateral approval of A₁ and A₂ values.

Table A-1 (Cont.)

Symbol of Radionuclide	Element and Atomic No.	A_1 (TBq)	A_1 (Ci)	A_2 (TBq)	A_2 (Ci)	Specific Activity (TBq/g)	Specific Activity (Ci/g)
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Table A-2: General Values for A_1 and A_2

Contents	A_1		A_2	
	(TBq)	(Ci)	(TBq)	(Ci)
Only beta- or gamma-emitting nuclides are known to be present.	0.2	5	0.02	0.5
Alpha-emitting nuclides are known to be present, or no relevant data are available.	0.10	2.70	2×10^{-5}	5.41×10^{-4}

Table A-3: Activity-mass Relationships for Uranium

Uranium Enrichment*
wt % U-235 present

Specific Activity

TBq/g

Ci/g

0.45	1.8×10^{-8}	5.0×10^{-7}
0.72	2.6×10^{-8}	7.1×10^{-7}
1.0	2.8×10^{-8}	7.6×10^{-7}
1.5	3.7×10^{-8}	1.0×10^{-6}
5.0	1.0×10^{-7}	2.7×10^{-6}
10.0	1.8×10^{-7}	4.8×10^{-6}
20.0	3.7×10^{-7}	1.0×10^{-5}
35.0	7.4×10^{-7}	2.0×10^{-5}
50.0	9.3×10^{-7}	2.5×10^{-5}
90.0	2.2×10^{-6}	5.8×10^{-5}
93.0	2.6×10^{-6}	7.0×10^{-5}
95.0	3.4×10^{-6}	9.2×10^{-5}

*The figures for uranium include representative values for the activity of the uranium-235 which is concentrated during the enrichment process.

EXECUTIVE TASK MANAGEMENT SYSTEM

<<< PRINT SCREEN UPDATE FORM >>>

TASK # - 7S-89

DATE- 04/07/97

MAIL CTRL. - 1997

TASK STARTED - 04/07/97

TASK DUE - 05/14/97

TASK COMPLETED - / /

TASK DESCRIPTION - COLORADO REGS. TIMELINESS IN DECOMMISSIONING, PARTS 30,
40 & 70

REQUESTING OFF. - COL.

REQUESTER - QUILLIN

WITS -

0 FYP - N

PROG. - LJR

PERSON -

STAFF LEAD - LJR

PROG. AREA -

PROJECT STATUS -

OSP DUE DATE: 5/15/97

PLANNED ACC. - N

LEVEL CODE - 1

- 3.15.5.2 an entity (as that term is defined in 11 U.S.C. 101(14)) controlling the licensee or listing the license or licensee as property of the estate; or
- 3.15.5.3 an affiliate (as that term is defined in 11 U.S.C. 101 (2)) of the licensee.
- 3.15.6 The notification specified in RH 3.15.5 shall include the bankruptcy court in which the petition for bankruptcy was filed and the date of the filing of the petition.
- RH 3.16 Expiration, Termination, and Timely Decommissioning of Licenses.
- 3.16.1 Definition:
- As used in this regulation, "principal activities" means activities authorized by the license which are essential to achieving the purpose(s) for which the license was issued or amended. Storage during which no licensed material is accessed for use or disposal and activities incidental to decontamination or decommissioning are not principal activities.
- 3.16.2 Expiration.
- 3.16.2.1 Except as provided in RH 3.17.2, each specific license shall expire at the end of the specified day in the month and year stated therein.
- 3.16.2.2 Each specific license revoked by the Department expires at the end of the day on the date of final determination to revoke the license, or on the expiration date stated in the determination, or as otherwise provided by order.
- 3.16.2.3 Each specific license continues in effect, beyond the expiration date if necessary, with respect to possession of radioactive materials until the Department notifies the licensee in writing that the license is terminated.
- 3.16.3 Each licensee shall notify the Department immediately, in writing, and request termination of the license when the licensee decides to terminate all activities involving radioactive material authorized under the license. This notification and request for termination of the license must include the reports and information specified in RH 3.16.9.1 and RH 3.16.9.2.
- 3.16.3.1 No less than 30 days before the expiration date specified in the license, the licensee shall either:
- 3.16.3.1.1 submit an application for license renewal under RH 3.17; or
- 3.16.3.1.2 notify the Department, in writing, if the licensee decides not to renew the license.
- 3.16.4 If a licensee does not submit an application for license renewal under RH 3.17, the licensee shall, on or before the expiration date specified in the license:
- 3.16.4.1 terminate use of radioactive material; and
- 3.16.4.2 meet the requirements of RH 3.16.6.

- 3.16.5 If detectable levels of residual radioactive contamination attributable to activities conducted under the license are found, the license continues in effect beyond the expiration date, if necessary, with respect to possession of residual radioactive material present as contamination until the Department notifies the licensee in writing that the license is terminated.
- 3.16.5.1 Each licensee who possesses residual radioactive material under RH 3.16.5, following the expiration date specified in the license shall:
- 3.16.5.1.1 limit actions involving radioactive material to those related to decontamination and other activities related to preparation for release for unrestricted use; and
- 3.16.5.1.2 continue to control entry to restricted areas until they are suitable for release for unrestricted use and the Department notifies the licensee in writing that the license is terminated.
- 3.16.6 Timely Decommissioning.
- 3.16.6.1 Within 60 days of the occurrence of any of the following, the licensee shall notify the Division in writing of such occurrence, and either begin decommissioning its site, or any separate building or outdoor area that contains residual radioactivity so that the building or outdoor area is suitable for release in accordance with requirements, or submit within 12 months of notification a decommissioning plan, if required by RH 3.16.6.3, and begin decommissioning upon approval of that plan if:
- 3.16.6.1.1 The license has expired pursuant to RH 3.16.2.1 or 3.16.2.2 of this section; or
- 3.16.6.1.2 The licensee has decided to permanently cease principal activities, as defined in this part, at the entire site or in any separate building or outdoor area that contains residual radioactivity such that the building or outdoor area is unsuitable for release in accordance with Department requirements; or
- 3.16.6.1.3 No principal activities under the license have been conducted for a period of 24 months; or
- 3.16.6.1.4 No principal activities have been conducted for a period of 24 months in any separate building or outdoor area that contains residual radioactivity such that the building or outdoor area is unsuitable for release in accordance with Department requirements.
- 3.16.6.2 The Department may grant a request to extend the time periods established in RH 3.16.6.1 if the Department determines that this relief is not detrimental to the public health and safety and is otherwise in the public interest. The request must be submitted no later than 30 days before notification pursuant to RH 3.16.6.1 of this section. The schedule for decommissioning set forth in RH 3.16.6.1 may not commence until the Department has made a determination on the request.

- 3.16.6.3 A decommissioning plan must be submitted if required by license condition or if the procedures and activities necessary to carry out decommissioning of the site or separate building or outdoor area have not been previously approved by the Department and these procedures could increase potential health and safety impacts to workers or to the public, such as in any of the following cases:
- 3.16.6.3.1 Procedures would involve techniques not applied routinely during cleanup or maintenance operations;
- 3.16.6.3.2 Workers would be entering areas not normally occupied where surface contamination and radiation levels are significantly higher than routinely encountered during operation;
- 3.16.6.3.3 Procedures could result in significantly greater airborne concentrations of radioactive materials than are present during operation; or
- 3.16.6.3.4 Procedures could result in significantly greater releases of radioactive material to the environment than those associated with operation.
- 3.16.6.4 The Department may approve an alternate schedule for submittal of a decommissioning plan required pursuant to RH 3.16.6.1 of this section if the Department determines that the alternative schedule is necessary to the effective conduct of decommissioning operations and present no undue risk from radiation to the public health and safety and is otherwise in the public interest.
- 3.16.6.5 Procedures such as those listed in RH 3.16.6.3 of this section with potential health and safety impacts may not be carried out prior to approval of the decommissioning plan.
- 3.16.6.6 The proposed decommissioning plan for the site or separate building or outdoor area must include:
- 3.16.6.6.1 A description of the conditions of the site or separate building or outdoor area sufficient to evaluate the acceptability of the plan;
- 3.16.6.6.2 A description of planned decommissioning activities;
- 3.16.6.6.3 A description of methods used to ensure protection of workers and the environment against radiation hazards during decommissioning;
- 3.16.6.6.4 A description of the planned final radiation survey and;
- 3.16.6.6.5 An updated detailed cost estimate for decommissioning, comparison of that estimate with present funds set aside for decommissioning, and a plan for assuring the availability of adequate funds for completion of decommissioning.
- 3.16.6.6.6 For decommissioning plans calling for completion of decommissioning later than 24 months after plan approval, the plan shall include a justification for the delay based on the criteria in RH 3.16.8 of this section.

- 3.16.6.7 The proposed decommissioning plan will be approved by the Department if the information therein demonstrates that the decommissioning will be completed as soon as practicable and that the health and safety of workers and the public will be adequately protected.
- 3.16.7 Except as provided in RH 3.16.8 of this section:
- 3.16.7.1 Licensees shall complete decommissioning of the site or separate building or outdoor area as soon as practicable but no later than 24 months following the initiation of decommissioning.
- 3.16.7.2 When decommissioning involves the entire site, the licensee shall request license termination as soon as practicable but no later than 24 months following the initiation of decommissioning.
- 3.16.8 The Department may approve a request for an alternative schedule for completion of decommissioning of the site or separate building or outdoor area, and license termination if appropriate, if the Department determines that the alternative is warranted by consideration of the following:
- 3.16.8.1 Whether it is technically feasible to complete decommissioning within the allotted 24-month period;
- 3.16.8.2 Whether sufficient waste disposal capacity is available to allow completion of decommissioning with the allotted 24-month period;
- 3.16.8.3 Whether a significant volume reduction in wastes requiring disposal will be achieved by allowing short-lived radionuclides to decay;
- 3.16.8.4 Whether a significant reduction in radiation exposure to workers can be achieved by allowing short-lived radionuclides to decay; and
- 3.16.8.5 Other site-specific factors which the Department may consider appropriate on a case-by-case basis, such as the regulatory requirements of other government agencies, lawsuits, ground-water treatment activities, monitored natural ground-water restoration, actions that could result in more environmental harm than deferred cleanup, and other factors beyond the control of the licensee.
- 3.16.9 As the final step in decommissioning, the licensee shall:
- 3.16.9.1 Certify the disposition of all licensed material, including accumulated wastes, by submitting a completed Department Form AOR-RH-23 or equivalent information; and
- 3.16.9.2 Conduct a radiation survey of the premises where the licensed activities were carried out and submit a report of the results of this survey unless the licensee demonstrates that the premises are suitable for release in some other manner. The licensee shall, as appropriate:

- 3.16.9.2.1 Report levels of gamma radiation in units of millisieverts (microrentgen) per hour at one meter from surfaces, and report levels of radioactivity, including alpha and beta, in units of megabecquerels (disintegrations per minute of microcuries) per 100 square centimeters-removable and fixed-for surfaces, megabecquerels (microcuries) per milliliter for water, and becquerels (picocuries) per gram for solids such as soils or concrete; and
- 3.16.9.2.2 Specify the survey instrument(s) used and certify that each instrument is properly calibrated and tested.
- 3.16.10 Specific licenses, including expired licenses, will be terminated by written notice to the licensee when the department determines that:
- 3.16.10.1 Radioactive materials has been properly disposed;
- 3.16.10.2 Reasonable effort has been made to eliminate residual radioactive contamination if present; and
- 3.16.10.3 A radiation survey has been performed which demonstrates;
- 3.16.10.3.1 That the premises are suitable for release in accordance with Department requirements; or
- 3.16.10.3.2 Other information submitted by the licensee is sufficient to demonstrate that the premises are suitable for release in accordance with Department requirements.

RH 3.17 Renewal of Licenses.

- 3.17.1 Applications for renewal of specific licenses shall be filed in accordance with RH 3.8.
- 3.17.2 In any case in which a licensee, not less than 30 days prior to expiration of his existing license, has filed an application in proper form for renewal or for a new license authorizing the same activities, such existing license shall not expire until final action by the Department.
- RH 3.18 Amendment of Licenses at Request of Licensee. Applications for amendment of a license shall be filed in accordance with RH 3.8 and shall specify the respects in which the licensee desires the license to be amended and the grounds for such amendment.
- RH 3.19 Agency Action on Applications to Renew and Amend. In considering an application by a licensee to renew or amend the license, the Department will apply the criteria set forth in RH 3.9 and RH 3.10, RH 3.11, RH 3.12, and in Parts 5, 7, 14, 16 and 18 of these regulations, as applicable.

Licenses Held at the Time of the Effective
Date of These Regulations

- RH 3.20 Reserved.
- RH 3.21 Reserved.

Transfer of Materials

RH 3.22 Transfer of Material.

- 3.22.1 No licensee shall transfer radioactive material except as authorized pursuant to RH 3.22.
- 3.22.2 Except as otherwise provided in his license and subject to the provisions of RH 3.22.3 and RH 3.22.4, any licensee may transfer radioactive material:
- 3.22.2.1 to the Department;^{11/}
 - 3.22.2.2 to the U.S. Department of Energy;
 - 3.22.2.3 to any person exempt from the regulations in this part to the extent permitted under such exemption;
 - 3.22.2.4 to any person authorized to receive such material under terms of a general license or its equivalent, or a specific license or equivalent licensing document, issued by the Department, the U.S. Nuclear Regulatory Commission, any Agreement State or any Licensing State, or to any person otherwise authorized to receive such material by the Federal Government or any agency thereof, the Department, an Agreement State, or a Licensing State; or
 - 3.22.2.5 as otherwise authorized by the Department in writing.
- 3.22.3 Before transferring radioactive material to a specific licensee of the Department, the U.S. Nuclear Regulatory Commission, an Agreement State or a Licensing State, or to a general licensee who is required to register with the Department, the U.S. Nuclear Regulatory Commission, an Agreement State or a Licensing State prior to receipt of the radioactive material, the licensee transferring the material shall verify that the transferee's license authorizes the receipt of the type, form, and quantity of radioactive material to be transferred.
- 3.22.4 Any of the following methods for the verification required by RH 3.22.3 is acceptable:
- 3.22.4.1 The transferor may possess and read a current copy of the transferee's specific license or registration certificate.
 - 3.22.4.2 The transferor may possess a written certification by the transferee that the transferee is authorized by license or registration certificate to receive the type, form, and quantity of radioactive material to be transferred, specifying the license or registration certificate number, issuing agency, and expiration date.
 - 3.22.4.3 For emergency shipments, the transferor may accept oral certification by the transferee that the transferee is authorized by license or registration certificate to receive the type, form, and quantity of radioactive material to be transferred, specifying the license or registration certificate number, issuing agency, and expiration date; provided, that the oral certification is confirmed in writing within 10 days.

^{11/} A licensee may transfer material to the Department only after receiving prior approval from the Department.

- 3.22.4.4 The transferor may obtain other information compiled by a reporting service from official records of the Department, the U.S. Nuclear Regulatory Commission, an Agreement State, or a Licensing State regarding the identity of licensees and the scope and expiration dates of licenses and registration.
- 3.22.4.5 When none of the methods of verification described in RH 3.22.4.1 through RH 3.22.4.4 are readily available or when a transferor desires to verify that information received by one of such methods is correct or up-to-date, the transferor may obtain and record confirmation from the Department, the U.S. Nuclear Regulatory Commission, or an Agreement State, or a Licensing State that the transferee is licensed to receive the radioactive material.
- 3.22.5 Shipment and transport of radioactive material shall be in accordance with the provisions of Part 17 of these regulations.

Modification and Revocation of Licenses

RH 3.23 Modification and Revocation of Licenses.

- 3.23.1 The terms and conditions of all licenses shall be subject to amendment, revision, or modification or the license may be suspended or revoked by reason of amendments to the Act, or by reason of rules, regulations, and orders issued by the Department.
- 3.23.2 Any license may be revoked, suspended, or modified, in whole or in part, for any material false statement in the application or any statement of fact required under provisions of the Act, or because of conditions revealed by such application or statement of fact or any report, record, or inspection or other means which would warrant the Department to refuse to grant a license on an original application, or for violation of, or failure to observe any of the terms and conditions of the Act, or of the license, or of any rule, regulation, or order of the Department.
- 3.23.3 Except in cases of willfulness or those in which the public health, interest or safety requires otherwise, no license shall be modified, suspended, or revoked unless, prior to the institution of proceedings therefor, facts or conduct which may warrant such action shall have been called to the attention of the licensee in writing and the licensee shall have been accorded an opportunity to demonstrate or achieve compliance with all lawful requirements.

Reciprocity

RH 3.24 Reciprocal Recognition of Licenses.

3.24.1 Licenses of Byproduct, Source, and Special Nuclear Material in Quantities Not Sufficient to Form a Critical Mass.

- 3.24.1.1 Subject to these regulations, any person who holds a specific license from the U. S. Nuclear Regulatory Commission or an Agreement State, and issued by the agency having jurisdiction where the licensee maintains an office for directing the licensed activity and at which radiation safety records are normally maintained, is hereby granted a general license to conduct the activities authorized in such licensing document within this State for a period not in excess of 180 days in any calendar year provided that:
- 3.24.1.1.1 the licensing document does not limit the activity authorized by such document to specified installations or locations;

3.24.1.1.2

the out-of-state licensee notifies the Department in writing at least 3 days prior to engaging in such activity. Such notification shall indicate the location, period, and type of proposed possession and use within the State, and shall be accompanied by a copy of the pertinent licensing document. If, for a specific case, the 3 day period would impose an undue hardship on the out-of-state licensee, the licensee may, upon application to the Department, obtain permission to proceed sooner. The Department may waive the requirement for filing additional written notifications during the remainder of the calendar year following the receipt of the initial notification from a person engaging in activities under the general license provided in RH 3.24.1.1;

3.24.1.1.3

the out-of-state licensee complies with all applicable regulations of the Department and with all the terms and conditions of the licensing document, except any such terms and conditions which may be inconsistent with applicable regulations of the Department;

3.24.1.1.4

the out-of-state licensee supplies such other information as the Department may request; and

3.24.1.1.5

the out-of-state licensee shall not transfer or dispose of radioactive material possessed or used under the general license provided in RH 3.24.1.1 except by transfer to a person:

3.24.1.1.5.1

specifically licensed by the Department or by the U. S. Nuclear Regulatory Commission to receive such material, or

3.24.1.1.5.2

exempt from the requirements for a license for such material under RH 3.3.1.

3.24.1.2

Notwithstanding the provisions of RH 3.24.1.1, any person who holds a specific license issued by the U. S. Nuclear Regulatory Commission or an Agreement State authorizing the holder to manufacture, transfer, install, or service a device described in RH 3.6.4.1 within areas subject to the jurisdiction of the licensing body is hereby granted a general license to install, transfer, demonstrate, or service such a device in this State provided that:

3.24.1.2.1

such person shall file a report with the Department within 30 days after the end of each calendar quarter in which any device is transferred to or installed in this State. Each such report shall identify each general licensee to whom such device is transferred by name and address, the type of device transferred, and the quantity and type of radioactive material contained in the device;

3.24.1.2.2

the device has been manufactured, labeled, installed, and serviced in accordance with applicable provisions of the specific license issued to such person by the U. S. Nuclear Regulatory Commission or an Agreement State;