

*The Agency is seeking your input regarding the following noted suggested rule changes. These suggested changes are NOT final rule changes.*

Legend: (Draft Amendments)

Single Underline = Draft new language

**[Bold, Print, and Brackets]** = Current language drafted for deletion

Regular Print = Current language

(No change.) = No changes are being considered for the designated subdivision

§289.251. Exemptions, General Licenses, and General License Acknowledgements.

(a) - (c) (No change.)

(d) Exemptions for source material.

(1) - (2) (No change.)

(3) Any person is exempt from this section and §289.252 of this title to the extent [if] that such person receives, possesses, uses, or transfers:

(A) (No change.)

(B) source material contained in the following products:

(i) glazed ceramic **[ceramics, for example]** tableware manufactured before August 27, 2013, provided that the glaze contains not more than 20% by weight source material;

(ii) glassware containing not more than 2% **[10%]** by weight source material or, for glassware manufactured before August 27, 2013, 10% by weight source material; but not including commercially manufactured glass brick, pane glass, ceramic tile, or other glass or ceramic used in construction;

(iii) - (iv) (No change.)

(C) - (D) (No change.)

(E) depleted uranium contained in counterweights installed in aircraft, rockets, projectiles, and missiles, or stored or handled in connection with installation or removal of such counterweights, provided that:

**[(i) the counterweights are manufactured in accordance with a specific license issued by the United States Nuclear Regulatory Commission (NRC) authorizing distribution by the licensee in accordance with Title 10, Code of Federal Regulations (CFR), Part 40;]**

(i) [(ii)] each counterweight has been impressed with the following legend clearly legible through any plating or other covering: "DEPLETED URANIUM" (The requirements specified in this clause need not be met by counterweights manufactured prior to December 31, 1969, provided that such counterweights were manufactured under a specific license issued by the Atomic Energy Commission and were [are] impressed with the legend, "CAUTION - RADIOACTIVE MATERIAL - URANIUM," as previously required by this chapter);

(ii) [(iii)] each counterweight is durably and legibly labeled or marked with the identification of the manufacturer and the statement: "UNAUTHORIZED ALTERATIONS PROHIBITED" (The requirements specified in this clause need not be met by counterweights manufactured prior to December 31, 1969, provided that such counterweights were manufactured under a specific license issued by the Atomic Energy Commission and were [are] impressed with the legend, "CAUTION - RADIOACTIVE MATERIAL - URANIUM," as previously required by this chapter); and

(iii) [(iv)] the exemption contained in this subparagraph shall not be deemed to authorize the chemical, physical, or metallurgical treatment or processing of any such counterweights other than repair or restoration of any plating or other [.] covering[, **or labeling**];

(F) (No change.)

(G) thorium or uranium contained in or on finished optical lenses and mirrors, provided that each lens or mirror does not contain more than 10% [30%] by weight of thorium or uranium or, for lenses manufactured before August 27, 2013, 30% [30 percent] by weight of thorium; [.] and that the exemption contained in this subparagraph shall not be deemed to authorize either:

(i) the shaping, grinding, or polishing of such lens or mirror or manufacturing processes other than the assembly of such lens or mirror into optical systems and devices without any alteration of the lens or mirror; or

(ii) the receipt, possession, use, or transfer of uranium or thorium contained in contact lenses, or in spectacles, or in eyepieces in binoculars or in other optical instruments;

(H) uranium contained in detector heads for use in fire detection units, provided that each detector head contains not more than 0.005 microcurie ( $\mu\text{Ci}$ ) (185 becquerels (Bq) of uranium; or

(I) (No change.)

(4) (No change.)

(5) No person may initially transfer for sale or distribution a product containing source material to persons exempt under subsection (d)(3) of this section, or equivalent regulations of an agreement state, unless authorized by a license issued under Title 10, CFR, §40.52, to initially transfer such products for sale or distribution.

(A) Persons initially distributing source material in products covered by the exemptions in subsection (d)(3) of this section before August 27, 2013, without specific authorization may continue such distribution for 1 year beyond this date. Initial distribution may also be continued until the agency takes final action on a pending application for license or license amendment to specifically authorize distribution submitted no later than 1 year beyond this date.

(B) Persons authorized by the agency, NRC, any agreement state, or licensing state to manufacture, process, or produce these materials or products containing source material and persons who import finished products or parts, for sale or distribution shall be authorized by a license issued under Title 10, CFR, §40.52, for distribution only. These persons are exempt from the requirements of §289.202 of this title (relating to Standards for Protection Against Radiation from Radioactive Materials) and §289.203 of this title (relating to Notices, Instructions, and Reports to Workers; Inspections) except §289.202(n) - (o) and (ww) - (yy) of this title.

(e) Exemptions for radioactive material other than source material.

(1) (No change.)

(2) Exempt quantities.

(A) - (D) (No change.)

(E) The schedule of quantities set forth in subsection (1)(2) of this section applies only to radioactive materials distributed as exempt quantities in accordance with a specific license issued by the agency, another licensing state, or the NRC [commission]. Subsection (1)(2) of this section does not apply to radioactive materials that have decayed from quantities not originally exempt and does not make such material, or the sources or devices in which the material is contained exempt [except] from the licensing requirements in this section or §289.252 of this title.

(F) (No change.)

(3) Exempt items.

(A) Certain items containing radioactive material.

(i) Except for persons who apply radioactive material to, or persons who incorporate radioactive material into the following products, any person is exempt from this chapter if that person receives, possesses, uses, transfers, or acquires the following products:

(I) timepieces, hands, or dials containing not more than the following specified quantities of radioactive material and not exceeding the following specified levels of radiation:

(-a-) (No change.)

(-b-) 5 mCi (185 MBq) of tritium per hand;

(-c-) 15 mCi (555 MBq) of tritium per dial (bezels when used shall be considered as part of the dial);

(-d-) 100  $\mu$ Ci (3.7 MBq) of promethium-147 per watch or 200  $\mu$ Ci of promethium-147 per any other timepiece;

(-e-) 20  $\mu$ Ci (0.74 MBq) of promethium-147 per watch hand or 40  $\mu$ Ci of promethium-147 per other timepiece hand;

(-f-) 60  $\mu$ Ci (2.22 MBq) of promethium-147 per watch dial or 120  $\mu$ Ci of promethium-147 per other timepiece dial (bezels when used shall be considered as part of the dial);

(-g-) the levels of radiation from hands and dials containing promethium-147 shall [will] not exceed, when measured through 50 milligrams per square centimeter ( $\text{mg}/\text{cm}^2$ ) of absorber:

(-1-) - (-3-) (No change.)

(-h-) (No change.)

(II) - (X) (No change.)

(ii) (No change.)

(iii) Any person who desires to apply radioactive material to, or to incorporate radioactive material into, the products exempted in clause (i) of this subparagraph, or who desires to initially transfer for sale or distribution such products containing radioactive material, shall apply for a specific license in accordance with Title 10, CFR, §32.14, which license states that the product may be distributed by the licensee to persons exempt from the regulations in accordance with [pursuant to] clause (i) of this subparagraph.

(B) - (D) (No change.)

(4) Exemption for capsules containing carbon-14 urea for "in vivo" diagnostic use in humans.

(A) Except as provided in subparagraphs (B) and (C) of this paragraph, a person is exempt from the requirements of this section and §289.256 of this title provided that such person receives, possesses, uses, transfers, owns, or acquires capsules containing 1  $\mu\text{Ci}$  (37 kBq [kilobecquerels]) or less of carbon-14 urea each (allowing for nominal variation that may occur during the manufacturing process), for "in vivo" diagnostic use in humans.

(B) - (D) (No change.)

(f) General licenses. In addition to the requirements of this section, all general licenses, unless otherwise specified, are subject to the requirements of §289.201 of this title (relating to General Provisions for Radioactive Material), §289.202(ww) and (xx) of this title [**(relating to Standards for Protection Against Radiation from Radioactive Materials)**], §289.204 of this title (relating to Fees for Certificates of Registration, Radioactive Material Licenses, Emergency Planning and Implementation, and Other Regulatory Services), §289.205 of this title (relating to Hearing and Enforcement Procedures), and §289.257 of this title (relating to Packaging and Transportation of Radioactive Material).

(1) In making a determination whether to revoke, suspend, or restrict a general license, the agency may consider the technical competence and compliance history of a general licensee. After an opportunity for a hearing, the agency may revoke, suspend, or restrict a general license if the general licensee's compliance history reveals that at least three agency actions have been issued against the general licensee, within the previous 6 [six] years, that assess administrative or civil penalties against the general licensee, or that revoke or suspend the general license.

(2) (No change.)

(3) General licenses for source material.

(A) General license for small quantities of source material.

(i) [(A)] A general license is hereby issued authorizing commercial and industrial firms, research, educational and medical institutions, and federal, state and local government agencies to receive, possess, use, and transfer uranium and thorium, in their natural isotopic concentrations and in the form of depleted uranium, [not more than 15 pounds of source material at any one time] for research, development, educational, commercial, or operational purposes in the following forms and quantities: [.]

(I) no more than 1.5 kg (3.3 lb) of uranium and thorium in dispersible forms (e.g., gaseous, liquid, powder, etc.) at any one time.

(-a-) Any material processed by the general licensee that alters the chemical or physical form of the material containing source material must be accounted for as a dispersible form.

(-b-) A person authorized to possess, use, and transfer source material under this paragraph may not receive more than a total of 7 kg (15.4 lb) of uranium and thorium in any one calendar year.

(-c-) Persons possessing source material in excess of these limits as the effective date of this rule, may continue to possess up to 7 kg (15.4 lb) of uranium and thorium at any one time for 1 year beyond this date, or until the NRC, any agreement state, or licensing state, takes final action on a pending application submitted on or before 1 year after the effective date of this rule, for a specific license for such material; and receive up to 70 kg (154 lb) of uranium or thorium in any one calendar year until December 31, 2014, or until the NRC, any agreement state, or licensing state, takes final action on a pending application submitted on or before August 27, 2014, for a specific license for such material; and

(II) no more than a total of 7 kg (15.4 lb) of uranium and thorium at any one time.

(-a-) A person authorized to possess, use, and transfer source material under this paragraph may not receive more than a total of 70 kg (154 lb) of uranium and thorium in any one calendar year.

(-b-) A person may not alter the chemical or physical form of the source material possessed under this subparagraph unless it is accounted for under the limits of clause (i)(I) of this subparagraph; or

(III) no more than 7 kg (15.4 lb) of uranium, removed during the treatment of drinking water, at any one time. A person may not remove more than 70 kg (154 lb) of uranium from drinking water during a calendar year under this subparagraph; or

(IV) no more than 7 kg (15.4 lb) of uranium and thorium at laboratories for the purpose of determining the concentration of uranium and thorium contained within the material being analyzed at any one time. A person authorized to possess, use, and transfer source material under this paragraph may not receive more than a total of 70 kg (154 lb) of source material in any one calendar year.

**[(i) A person authorized to use or transfer source material, in accordance with this general license, may not possess more than a total of 150 pounds of source material in any one calendar year.]**

(ii) Any person who receives, possesses, uses, or transfers [Persons who receive, possess, use, or transfer] source material in accordance with the general license in clause (i) of this subparagraph;

(I) is [are] prohibited from administering source material, or the radiation therefrom, either externally or internally, to human beings [humans] except as may be authorized by the agency in a specific license; [.]

(II) shall not abandon such source material. Source material may be disposed of as follows:

(-a-) a cumulative total of 0.5 kg (1.1 lb) of source material in a solid, non-dispersible form may be transferred each calendar year, by a person authorized to receive, possess, use, and transfer source material under this general license to persons receiving the material for permanent disposal. The recipient of source material transferred under the provisions of this paragraph is exempt from the requirements to obtain a license under subsection (f)(3) of this section to the extent the source material is permanently disposed. This provision does not apply to any person who is in possession of source material under a specific license issued under this chapter; or

(-b-) in accordance with §289.202(ff) of this title;

(III) is subject to the provisions in subsection (f)(2) of this section and §§289.201(d) - (f); 289.202 (xx) - (yy); 289.252(w)(2), (x)(2) - (3), and (cc); and 289.257(b)(1) of this title; and

(IV) shall not export such source material except in accordance with Title 10, CFR, Part 110.

(iii) Any person who receives, possesses, uses, or transfers source material in accordance with subparagraph (A) of this paragraph shall conduct activities so as to minimize contamination of the facility and the environment. When activities involving such source material are permanently ceased at any site, if evidence of significant contamination is identified, the general licensee shall notify the agency about such contamination and may consult with the agency as to the appropriateness of sampling and restoration activities to ensure that any contamination or residual source material remaining at the site where source material was used under this general license is not likely to result in exposures that exceed the limits in §289.202(ddd)(2)(A) of this title.

(iv) Any person who receives, possesses, uses, or transfers source material in accordance with the general license granted in subparagraph (A) of this paragraph is exempt from the provisions of §§289.202, 289.203 and 289.205 of this title to the extent that such receipt, possession, use, and transfer are within the terms of this general license, except that such person shall comply with the provisions of §289.202(ff), (n) - (o), (ww) - (yy), and (ddd)(2)(A) of this title to the extent necessary to meet the provisions of clauses (ii) and (iii) of

this subparagraph. However, this exemption does not apply to any person who also holds a specific license issued under this chapter.

(v) No person may initially transfer or distribute source material to persons generally licensed under clause (i)(I) or (II) of this subparagraph, or equivalent regulations of an agreement state, unless authorized by a specific license issued in accordance with §289.252(cc)(6)(A) of this title or equivalent provisions of the NRC, an agreement state, or a licensing state. This prohibition does not apply to analytical laboratories returning processed samples to the client who initially provided the sample. Initial distribution of source material to persons generally licensed by subparagraph (A) of this paragraph before the effective date of this rule, without specific authorization may continue for 1 year beyond this date. Distribution may also be continued until the agency takes final action on a pending application for license or license amendment to specifically authorize distribution submitted on or before 1 year after the effective date of this rule.

(B) - (C) (No change.)

(D) A general license is issued to receive, acquire, possess, use, or transfer depleted uranium contained in products or devices for the purpose of providing shielding, including beam shaping and collimation, in accordance with the provisions of clauses (i) - (iv) of this subparagraph.

(i) - (iv) (No change.)

(v) Any person receiving, acquiring, possessing, using, or transferring depleted uranium in accordance with the general license in this paragraph is exempt from the requirements of §289.202 of this title and §289.203 of this title **[(relating to Notices, Instructions, and Reports to Workers; Inspections)]** with respect to the depleted uranium covered by that general license.

(4) General licenses for radioactive material other than source material.

(A) General licenses for static elimination devices and ion generating tubes. A general license is issued to transfer, receive, acquire, possess, and use radioactive material incorporated in the devices or equipment specified in the following clauses (i) and (ii) of this paragraph that have been manufactured, tested, and labeled by the manufacturer in accordance with a specific license issued to the manufacturer by the NRC. In addition to the provisions of subsection (f) of this section, this general license is subject to the provisions of subsection (e)(1)(B) of this section and §289.252(cc) of this title:

(i) static elimination devices designed for use as static eliminators that contain, as a sealed source or sources, radioactive material totaling not more than 500  $\mu\text{Ci}$  (18.5 MBq) of polonium-210 per device; or

(ii) ion generating tubes designed for ionization of air that contain, as a sealed source or sources, radioactive material totaling not more than 500  $\mu\text{Ci}$  (18.5 MBq) of polonium-10 per device or a total of not more than 50 mCi (1.85 GBq) of tritium per device.

(B) General license for luminous safety devices for aircraft.

(i) A general license is issued to receive, acquire, possess, and use tritium or promethium-147 contained in luminous safety devices for use in aircraft, provided:

(I) each device contains not more than 10 curies (Ci) (370 GBq) of tritium or 300 mCi (11.1 GBq) of promethium-47; and

(II) (No change.)

(ii) - (iii) (No change.)

(C) (No change.)

(D) General license for calibration, stabilization, and reference sources.

(i) - (ii) (No change.)

(iii) Persons who own, receive, acquire, possess, use, or transfer one or more calibration or reference sources in accordance with these general licenses:

(I) shall not possess at any one time, at any one location of storage or use, more than 5  $\mu\text{Ci}$  (185 kBq) each of americium-241, plutonium-238, plutonium-239, and radium-226 in such sources;

(II) - (V) (No change.)

(iv) (No change.)

(E) General license for ice detection devices.

(i) A general license is issued to own, receive, acquire, possess, use, and transfer strontium-90 contained in ice detection devices, provided each device contains not more than 50  $\mu\text{Ci}$  (1.85 MBq) of strontium-90 and each device has been manufactured or initially transferred in accordance with a specific license issued by the NRC or each device has been manufactured in accordance with the authorizations contained in a specific license issued by the agency or any agreement state to the manufacturer of such device in accordance with licensing requirements equivalent to those in Title 10, CFR, §32.61.

(ii) - (iii) (No change.)

(F) General license for intrastate transportation of radioactive material.

(i) A general license is issued to any common or contract carrier to transport and store radioactive material in the regular course of their carriage for another or storage incident to transport, provided the transportation and storage is in accordance with the applicable requirements of §289.257 of this title insofar as such requirements relate to the loading and storage of packages, placarding of the transporting vehicle, and incident reporting. Any notification of incidents referred to in those requirements shall be filed with the agency and the United States Department of Transportation (DOT). Persons who transport and store radioactive material in accordance with the general license in this paragraph are exempt from the requirements of §§289.202 and 289.203 of this title except for §289.202(w) - (y) of this title.

(ii) A general license is 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 DOT insofar as such requirements relate to the loading and storage of packages, placarding of the transporting vehicle, and incident reporting. Any notification of incidents referred to in those requirements shall be filed with the DOT, and with the agency in accordance with 289.202(w) - (y) of this title [and the DOT].

(G) General license for the use of radioactive material for certain *in vitro* clinical or laboratory testing, not to include research and development. (The New Drug provisions of the Federal Food, Drug, and Cosmetic Act also govern the availability and use of any specific diagnostic drugs in interstate commerce.)

(i) A general license is issued to any physician, veterinarian, clinical laboratory, or hospital to receive, acquire, possess, transfer, or use, for any of the following stated tests, in accordance with the provisions of clauses (ii) - (iii) of this subparagraph, the following radioactive materials in prepackaged units:

(I) iodine-125, in units not exceeding 10  $\mu\text{Ci}$  (0.37 MBq) each for use in *in vitro* clinical or laboratory tests not involving internal or external administration of radioactive material, or the radiation therefrom, to humans or animals;

(II) iodine-131, in units not exceeding 10  $\mu\text{Ci}$  (0.37 MBq) each for use in *in vitro* clinical or laboratory tests not involving internal or external administration of radioactive material, or the radiation therefrom, to humans or animals;

(III) carbon-14, in units not exceeding 10  $\mu\text{Ci}$  (0.37 MBq) each for use in *in vitro* clinical or laboratory tests not involving internal or external administration of radioactive material, or the radiation therefrom, to humans or animals;

(IV) hydrogen-3 (tritium), in units not exceeding 50  $\mu\text{Ci}$  (1.85 MBq) each for use in *in vitro* clinical or laboratory tests not involving internal or external administration of radioactive material, or the radiation therefrom, to humans or animals;

(V) iron-59, in units not exceeding 20  $\mu\text{Ci}$  (0.74 MBq) each for use in *in vitro* clinical or laboratory tests not involving internal or external administration of radioactive material, or the radiation therefrom, to humans or animals;

(VI) selenium-75, in units not to exceed 10  $\mu\text{Ci}$  (0.37 MBq) each for use in *in vitro* clinical or laboratory tests not involving internal or external administration of radioactive material, or the radiation therefrom, to humans or animals;

(VII) mock iodine-125 reference or calibration sources, in units not exceeding 0.05  $\mu\text{Ci}$  (1850 Bq) of iodine-129 and 0.005  $\mu\text{Ci}$  of americium-241 each for use in *in vitro* clinical or laboratory tests not involving internal or external administration of radioactive material, or the radiation therefrom, to humans or animals; or

(VIII) cobalt-57, in units not exceeding 10  $\mu\text{Ci}$  (0.37 MBq) each for use in *in vitro* clinical or laboratory tests not involving internal or external administration of radioactive material, or the radiation therefrom, to humans or animals.

(ii) A person who receives, acquires, possesses, or uses radioactive material in accordance with the general license in clause (i) of this subparagraph shall comply with the following.

(I) The general licensee shall not possess at any one time, at any one location of storage or use, a total amount of iodine-125, iodine-131, selenium-75, iron-59, and/or cobalt-57 in excess of 200  $\mu\text{Ci}$  (7.4 MBq).

(II) - (V) (No change.)

(iii) - (iv) (No change.)

(H) General license for certain detecting, measuring, gauging, or controlling devices and certain devices for producing light or an ionized atmosphere.

(i) - (iii) (No change.)

(iv) Any person who receives, acquires, possesses, uses, or transfers radioactive material in a device in accordance with the general license in this subparagraph shall do the following:

(I) (No change.)

(II) assure that the device is tested for leakage of radioactive material and proper operation of the "on-off" mechanism and indicator, if any, at no longer than 6-month [**six-month**] intervals or at such other intervals as specified in the label; however:

(-a-) (No change.)

(-b-) devices containing only tritium or not more than 100  $\mu\text{Ci}$  (3.7 MBq) of other beta and/or gamma emitting material or 10  $\mu\text{Ci}$  (3.7 MBq) of alpha emitting material and devices held in storage in the original shipping container prior to initial installation need not be tested for any purpose, provided that each source is tested for leakage within 6 [six] months prior to being used or transferred;

(III) (No change.)

(IV) maintain records for inspection by the agency showing compliance with the requirements of subclauses (II) and (III) of this clause. The records shall show the test results. The records also shall identify the device tested by manufacturer, model and serial number of the device, serial number of the sealed source, and show the dates of performance of and the names of persons performing testing, installation, servicing, and removal from location of installation, of the radioactive material, its shielding or containment. Retention shall be as follows:

(-a-) records for tests for leakage of radioactive material required by subclause (II) of this clause shall be kept for 3 [three] years after the next required leak test is performed or until the sealed source is transferred or disposed of;

(-b-) records of the test of the on-off mechanism and indicator required by subclause (II) of this clause shall be kept for 3 [three] years after the next required test of the on-off mechanism and indicator is performed or until the sealed source is transferred or disposed of; and

(-c-) records of the testing, installation (removal of the manufacturer's lock and initial alignment of the radiation beam), servicing, and removal from location of installation involving the radioactive materials, its shielding or containment required by subclause (III) of this clause shall be kept for 3 [three] years from the date of the recorded event or until the device is transferred or disposed of;

(V) - (VI) (No change.)

(VII) immediately suspend operation of the device if there is a failure of, or damage to, or any indication of a possible failure of or damage to, the shielding of the radioactive material or the "on-off" mechanism, or indicator, or upon the detection of 185 Bq [becquerels] (0.005  $\mu\text{Ci}$ ) or more of removable radioactive material. The device shall not be operated until it has been repaired by the manufacturer or other person holding a specific license from the agency, the NRC, an agreement state, or a licensing state to repair such devices. The device and any radioactive material from the device may only be disposed of by transfer to a person authorized by a specific license to receive the radioactive material in the device. A report, prepared in accordance with §289.202(xx) and (yy) of this title, containing a brief description of the event and the remedial action taken and in the case of detection of 185 Bq

**[becquerels]** (0.005  $\mu\text{Ci}$ ) or more removable radioactive material or failure of, or damage to a source likely to result in contamination of the premises or the environs, a plan for ensuring that the premises and environs are acceptable for unrestricted use shall be furnished to the agency within 30 days. Under these circumstances, the requirements in §289.202(ddd) of this title may be applicable, as determined by the agency on a case-by-case basis;

(VIII) - (IX) (No change.)

(X) furnish a report to the agency within 30 days after the transfer or export of a device to a specific licensee. The report must contain the following:

(-a-) - (-b-) (No change.)

(-c-) date of the transfer; [.]

(XI) obtain written agency approval before transferring the device to any other specific licensee not specifically identified in subclause (IX) of this clause; however, a holder of a specific license may transfer a device for possession and use under its own specific license without prior approval, if, the holder:

(-a-) - (-c-) (No change.)

(-d-) reports the transfer under subclause (X) of this clause; [.]

(XII) transfer the device to another general licensee only if:

(-a-) (No change.)

(-b-) the device is held in storage by an intermediate person in the original shipping container at its intended location of use prior to initial use by a general licensee; [.]

(XIII) - (XIV) (No change.)

(XV) not hold devices that are not in use for longer than 2 **[two]** years following the last principal activity use.

(-a-) If devices with shutters are not being used, the shutter shall be locked in the closed position. The testing required by clause (iv) of this subparagraph need not be performed during the period of storage only. However, when devices are put back into service or transferred to another person, and have not been tested within the required test interval, they shall be tested for leakage before use or transfer and the shutter tested before use.

(-b-) Devices kept in standby for future use are excluded from the 2-year [**two-year**] time limit if the Radiation Safety Licensing Branch approves a plan for future use submitted by the licensee. Licensees shall submit plans at least 30 days prior to the end of the 2 years of nonuse.

(-c-) The [**the**] general licensee shall perform [**performs**] quarterly physical inventories of these devices while they are in standby. The licensee shall make and maintain, for intervals of 5 [**five**] years, records of the quarterly physical inventories for inspection by the agency;

(XVI) - (XIX) (No change.)

(I) - (K) (No change.)

(g) - (k) (No change.)

(l) Appendices.

(1) Exempt concentrations.

Figure: 25 TAC §289.251(l)(1) [**Figure: 25 TAC §289.251(l)(1)**]

(2) Exempt quantities.

Figure: 25 TAC §289.251(l)(2) [**Figure: 25 TAC §289.251(l)(2)**]

**THIS PORTION OF THE PAGE LEFT INTENTIONALLY BLANK**

		Column I	Column II
Element (atomic number)	Isotope	Gas Concentration $\mu\text{Ci/ml}^*$	Liquid and Solid Concentration $\mu\text{Ci/ml}^{**}$
Antimony (51)	Sb-122		$3 \times 10^{-4}$
	Sb-124		$2 \times 10^{-4}$
	Sb-125		$1 \times 10^{-3}$
Argon (18)	Ar-37	$1 \times 10^{-3}$	
	Ar-41	$1 \times 10^{-7}$	
Arsenic (33)	As-73		$5 \times 10^{-3}$
	As-74		$5 \times 10^{-4}$
	As-76		$2 \times 10^{-4}$
	As-77		$8 \times 10^{-4}$
Barium (56)	Ba-131		$2 \times 10^{-3}$
	Ba-140		$3 \times 10^{-4}$
Beryllium (4)	Be-7		$2 \times 10^{-2}$
Bismuth (83)	Bi-206		$4 \times 10^{-4}$
Bromine (35)	Br-82	$4 \times 10^{-7}$	$3 \times 10^{-3}$
Cadmium (48)	Cd-109		$2 \times 10^{-3}$
	Cd-115m		$3 \times 10^{-4}$
	Cd-115		$3 \times 10^{-4}$
Calcium (20)	Ca-45		$9 \times 10^{-5}$
	Ca-47		$5 \times 10^{-4}$
Carbon (6)	C-14	$1 \times 10^{-6}$	$8 \times 10^{-3}$
Cerium (58)	Ce-141		$9 \times 10^{-4}$
	Ce-143		$4 \times 10^{-4}$
	Ce-144		$1 \times 10^{-4}$
Cesium (55)	Cs-131		$2 \times 10^{-2}$
	Cs-134m		$6 \times 10^{-2}$
	Cs-134		$9 \times 10^{-5}$
Chlorine (17)	Cl-138	$9 \times 10^{-7}$	$4 \times 10^{-3}$
Chromium (24)	Cr-51		$2 \times 10^{-2}$
Cobalt (27)	Co-57		$5 \times 10^{-3}$
	Co-58		$1 \times 10^{-3}$
	Co-60		$5 \times 10^{-4}$
Copper (29)	Cu-64		$3 \times 10^{-3}$

\* Values are given in Column I only for those materials normally used in gases.

\*\*  $\mu\text{Ci/gm}$  for solids

		Column I	Column II
Element (atomic number)	Isotope	Gas Concentration $\mu\text{Ci/ml}^*$	Liquid and Solid Concentration $\mu\text{Ci/ml}^{**}$
Dysprosium (66)	Dy-165		$4 \times 10^{-3}$
	Dy-166		$4 \times 10^{-4}$
Erbium (68)	Er-169		$9 \times 10^{-4}$
	Er-171		$1 \times 10^{-3}$
Europium (63)	Eu-152 (T/2=9.2 h)		$6 \times 10^{-4}$
	Eu-155		$2 \times 10^{-3}$
Fluorine (9)	F-18	$2 \times 10^{-6}$	$8 \times 10^{-3}$
Gadolinium (64)	Gd-153		$2 \times 10^{-3}$
	Gd-159		$8 \times 10^{-4}$
Gallium (31)	Ga-72		$4 \times 10^{-4}$
Germanium (32)	Ge-71		$2 \times 10^{-2}$
Gold (79)	Au-196		$2 \times 10^{-3}$
	Au-198		$5 \times 10^{-4}$
	Au-199		$2 \times 10^{-3}$
Hafnium (72)	Hf-181		$7 \times 10^{-4}$
Hydrogen (1)	H-3	$5 \times 10^{-6}$	$3 \times 10^{-2}$
Indium (49)	In-113m		$1 \times 10^{-2}$
	In-114m		$2 \times 10^{-4}$
Iodine (53)	I-126	$3 \times 10^{-9}$	$2 \times 10^{-5}$
	I-131	$3 \times 10^{-9}$	$2 \times 10^{-5}$
	I-132	$8 \times 10^{-8}$	$6 \times 10^{-4}$
	I-133	$1 \times 10^{-8}$	$7 \times 10^{-5}$
	I-134	$2 \times 10^{-7}$	$1 \times 10^{-3}$
Iridium (77)	Ir-190		$2 \times 10^{-3}$
	Ir-192		$4 \times 10^{-4}$
	Ir-194		$3 \times 10^{-4}$
Iron (26)	Fe-55		$8 \times 10^{-3}$
	Fe-59		$6 \times 10^{-4}$
Krypton (36)	Kr-85m	$1 \times 10^{-6}$	
	Kr-85	$3 \times 10^{-6}$	
Lanthanum (57)	La-140		$2 \times 10^{-4}$
Lead (82)	Pb-203		$4 \times 10^{-3}$

\* Values are given in Column I only for those materials normally used in gases.

\*\*  $\mu\text{Ci/gm}$  for solids

		Column I	Column II
Element (atomic number)	Isotope	Gas Concentration $\mu\text{Ci/ml}^*$	Liquid and Solid Concentration $\mu\text{Ci/ml}^{**}$
Lutetium (71)	Lu-177		$1 \times 10^{-3}$
Manganese (25)	Mn-52		$3 \times 10^{-4}$
	Mn-54		$1 \times 10^{-3}$
	Mn-56		$1 \times 10^{-3}$
Mercury (80)	Hg-197m		$2 \times 10^{-3}$
	Hg-197		$3 \times 10^{-3}$
	Hg-203		$2 \times 10^{-4}$
Molybdenum (42)	Mo-99		$2 \times 10^{-3}$
Neodymium (60)	Nd-147		$6 \times 10^{-4}$
	Nd-149		$3 \times 10^{-3}$
Nickel (28)	Ni-65		$1 \times 10^{-3}$
Niobium (Columbium) (41)	Nb-95		$1 \times 10^{-3}$
	Nb-97		$9 \times 10^{-3}$
Osmium (76)	Os-185		$7 \times 10^{-4}$
	Os-191m		$3 \times 10^{-2}$
	Os-191		$2 \times 10^{-3}$
	Os-193		$6 \times 10^{-4}$
Palladium (46)	Pd-103		$3 \times 10^{-3}$
	Pd-109		$9 \times 10^{-4}$
Phosphorus (15)	P-32		$2 \times 10^{-4}$
Platinum (78)	Pt-191		$1 \times 10^{-3}$
	Pt-193m		$1 \times 10^{-2}$
	Pt-197m		$1 \times 10^{-2}$
	Pt-197		$1 \times 10^{-3}$
<b>[Polonium (84)]</b>	<b>Po-210</b>		<b><math>7 \times 10^{-6}</math></b>
Potassium (19)	K-42		$3 \times 10^{-3}$
Praseodymium	Pr-142		$3 \times 10^{-4}$
	Pr-143		$5 \times 10^{-4}$
Promethium (61)	Pm-147		$2 \times 10^{-3}$
	Pm-149		$4 \times 10^{-4}$
<b>[Radium (88)]</b>	<b>Ra-226</b>		<b><math>1 \times 10^{-7}</math></b>
	<b>Ra-228</b>		<b><math>3 \times 10^{-7}</math></b>

\* Values are given in Column I only for those materials normally used in gases.

\*\*  $\mu\text{Ci/gm}$  for solids

		Column I	Column II
Element (atomic number)	Isotope	Gas Concentration $\mu\text{Ci/ml}^*$	Liquid and Solid Concentration $\mu\text{Ci/ml}^{**}$
Rhenium (75)	Re-183		$6 \times 10^{-3}$
	Re-186		$9 \times 10^{-4}$
	Re-188		$6 \times 10^{-4}$
Rhodium (45)	Rh-103m		$1 \times 10^{-1}$
	Rh-105		$1 \times 10^{-3}$
Rubidium (37)	Rb-86		$7 \times 10^{-4}$
Ruthenium (44)	Ru-97		$4 \times 10^{-4}$ [ $4 \times 10^{-3}$ ]
	Ru-103		$8 \times 10^{-4}$
	Ru-105		$1 \times 10^{-3}$
	Ru-106		$1 \times 10^{-4}$
Samarium (62)	Sm-153		$8 \times 10^{-4}$
Scandium (21)	Sc-46		$4 \times 10^{-4}$
	Sc-47		$9 \times 10^{-4}$
	Sc-48		$3 \times 10^{-4}$
Selenium (34)	Se-75		$3 \times 10^{-3}$
Silicon (14)	<u>Si-31</u> [ <b>Si-131</b> ]		$9 \times 10^{-3}$
Silver (47)	Ag-105		$1 \times 10^{-3}$
	Ag-110m		$3 \times 10^{-4}$
	Ag-111		$4 \times 10^{-4}$
Sodium (11)	Na-24		$2 \times 10^{-3}$
Strontium (38)	Sr-85		$1 \times 10^{-3}$
	Sr-89		$1 \times 10^{-4}$
	Sr-91		$7 \times 10^{-4}$
	Sr-92		$7 \times 10^{-4}$
Sulfur (16)	S-35	$9 \times 10^{-8}$	$6 \times 10^{-4}$
Tantalum (73)	Ta-182		$4 \times 10^{-4}$
Technetium (43)	Tc-96m		$1 \times 10^{-1}$
	Tc-96		$1 \times 10^{-3}$

\* Values are given in Column I only for those materials normally used in gases.

\*\*  $\mu\text{Ci/gm}$  for solids

		Column I	Column II
Element (atomic number)	Isotope	Gas Concentration $\mu\text{Ci/ml}^*$	Liquid and Solid Concentration $\mu\text{Ci/ml}^{**}$
Tellurium (52)	Te-125m		$2 \times 10^{-3}$
	Te-127m		$6 \times 10^{-4}$
	Te-127		$3 \times 10^{-3}$
	Te-129m		$3 \times 10^{-4}$
	Te-131m		$6 \times 10^{-4}$
	Te-132		$3 \times 10^{-4}$
Terbium (65)	Tb-160		$4 \times 10^{-4}$
Thallium (81)	Tl-200		$4 \times 10^{-3}$
	Tl-201		$3 \times 10^{-3}$
	Tl-202		$1 \times 10^{-3}$
	Tl-204		$1 \times 10^{-3}$
Thulium (69)	Tm-170		$5 \times 10^{-4}$
	Tm-171		$5 \times 10^{-3}$
Tin (50)	Sn-113		$9 \times 10^{-4}$
	Sn-125		$2 \times 10^{-4}$
Tungsten (Wolfram ) (74)	W-181		$4 \times 10^{-3}$
	W-187		$7 \times 10^{-4}$
Vanadium (23)	V-48		$3 \times 10^{-4}$
Xenon (54)	Xe-131m	$4 \times 10^{-6}$	
	Xe-133	$3 \times 10^{-6}$	
	Xe-135	$1 \times 10^{-6}$	
Ytterbium (70)	Yb-175		$1 \times 10^{-3}$
Yttrium (39)	Y-90		$2 \times 10^{-4}$
	Y-91m		$3 \times 10^{-2}$
	Y-91		$3 \times 10^{-4}$
	Y-92		$6 \times 10^{-4}$
	Y-93		$3 \times 10^{-4}$
Zinc (30)	Zn-65		$1 \times 10^{-3}$
	Zn-69m		$7 \times 10^{-4}$
	Zn-69		$2 \times 10^{-2}$

\* Values are given in Column I only for those materials normally used in gases.

\*\*  $\mu\text{Ci/gm}$  for solids

		Column I	Column II
Element (atomic number)	Isotope	Gas Concentration μCi/ml*	Liquid and Solid Concentration μCi/ml**
Zirconium (40)	Zr-95		$6 \times 10^{-4}$
	Zr-97		$2 \times 10^{-4}$
Beta and/or gamma emitting radioactive material not listed above with half-life less than 3 years		$1 \times 10^{-10}$	$1 \times 10^{-6}$

NOTE 1: Many radioisotopes disintegrate into isotopes that are also radioactive. In expressing the concentrations in this paragraph, the activity stated is that of the parent isotope and takes into account the daughters.

NOTE 2: For purposes of subsection (d) of this section where a combination of isotopes is involved, the limit for the combination should be derived as follows: Determine for each isotope in the product the ratio between the concentration present in the product and the exempt concentration established in this paragraph for the specific isotope when not in combination. The sum of such ratios may not exceed "1" (for example, unity).

EXAMPLE:

$$\frac{\text{Concentration of Isotope A in Product}}{\text{Exempt Concentration of Isotope A}} +$$

$$\frac{\text{Concentration of Isotope B in Product}}{\text{Exempt Concentration of Isotope B}} \leq 1$$

---

\* Values are given in Column I only for those materials normally used in gases.  
 \*\* μCi/gm for solids

<u>Radioactive Material</u>	<u>Microcuries</u>
Antimony-122 (Sb-122)	100
Antimony-124 (Sb-124)	10
Antimony-125 (Sb-125)	10
Arsenic-73 (As-73)	100
Arsenic-74 (As-74)	10
Arsenic-76 (As-76)	10
Arsenic-77 (As-77)	100
Barium-131 (Ba-131)	10
Barium-133 (Ba-133)	10
Barium-140 (Ba-140)	10
<b>[Beryllium-7 (Be-7)]</b>	<b>100]</b>
Bismuth-210 (Bi-210)	1
Bromine-82 (Br-82)	10
Cadmium-109 (Cd-109)	10
Cadmium-115m (Cd-115m)	10
Cadmium-115 (Cd-115)	100
Calcium-45 (Ca-45)	10
Calcium-47 (Ca-47)	10
Carbon-14 (C-14)	100
Cerium-141 (Ce-141)	100
Cerium-143 (Ce-143)	100
Cerium-144 (Ce-144)	1
Cesium-129 (Cs-129)	100
Cesium-131 (Cs-131)	1,000
Cesium-134m (Cs-134m)	100
Cesium-134 (Cs-134)	1
Cesium-135 (Cs-135)	10
Cesium-136 (Cs-136)	10
Cesium-137 (Cs-137)	10
Chlorine-36 (Cl-36)	10
Chlorine-38 (Cl-38)	10
Chromium-51 (Cr-51)	1,000
Cobalt-57 (Co-57)	100
Cobalt-58m (Co-58m)	10
Cobalt-58 (Co-58)	10
Cobalt-60 (Co-60)	1
Copper-64 (Cu-64)	100
Dysprosium-165 (Dy-165)	10
Dysprosium-166 (Dy-166)	100

<u>Radioactive Material</u>	<u>Microcuries</u>
Erbium-169 (Er-169)	100
Erbium-171 (Er-171)	100
Europium-152 (Eu-152) 9.2h	100
Europium-152 (Eu-152) 13 yr	1
Europium-154 (Eu-154)	1
Europium-155 (Eu-155)	10
Fluorine-18 (F-18)	1,000
Gadolinium-153 (Gd-153)	10
Gadolinium-159 (Gd-159)	100
Gallium-67 (Ga-67)	100
Gallium-72 (Ga-72)	10
Germanium-68 (Ge-68)	10
Germanium-71 (Ge-71)	100
Gold-195 (Au-195)	10
Gold-198 (Au-198)	100
Gold-199 (Au-199)	100
Hafnium-181 (Hf-181)	10
Holmium-166 (Ho-166)	100
Hydrogen-3 (H-3)	1,000
Indium-111 (In-111)	100
Indium-113m (In-113m)	100
Indium-114m (In-114m)	10
Indium-115m (In-115m)	100
Indium-115 (In-115)	10
Iodine-123 (I-123)	100
Iodine-125 (I-125)	1
Iodine-126 (I-126)	1
Iodine-129 (I-129)	0.1
Iodine-131 (I-131)	1
Iodine-132 (I-132)	10
Iodine-133 (I-133)	1
Iodine-134 (I-134)	10
Iodine-135 (I-135)	10
Iridium-192 (Ir-192)	10
Iridium-194 (Ir-194)	100
Iron-52 (Fe-52)	10
Iron-55 (Fe-55)	100
Iron-59 (Fe-59)	10
Krypton-85 (Kr-85)	100

<u>Radioactive Material</u>	<u>Microcuries</u>
Krypton-87 (Kr-87)	10
Lanthanum-140 (La-140)	10
Lutetium-177 (Lu-177)	100
Manganese-52 (Mn-52)	10
Manganese-54 (Mn-54)	10
Manganese-56 (Mn-56)	10
Mercury-197m (Hg-197m)	100
Mercury-197 (Hg-197)	100
Mercury-203 (Hg-203)	10
Molybdenum-99 (Mo-99)	100
Neodymium-147 (Nd-147)	100
Neodymium-149 (Nd-149)	100
Nickel-59 (Ni-59)	100
Nickel-63 (Ni-63)	10
Nickel-65 (Ni-65)	100
Niobium-93m (Nb-93m)	10
Niobium-95 (Nb-95)	10
Niobium-97 (Nb-97)	10
Osmium-185 (Os-185)	10
Osmium-191m (Os-191m)	100
Osmium-191 (Os-191)	100
Osmium-193 (Os-193)	100
Palladium-103 (Pd-103)	100
Palladium-109 (Pd-109)	100
Phosphorus-32 (P-32)	10
Platinum-191 (Pt-191)	100
Platinum-193m (Pt-193m)	100
Platinum-193 (Pt-193)	100
Platinum-197m (Pt-197m)	100
Platinum-197 (Pt-197)	100
Polonium-210 (Po-210)	0.1
Potassium-42 (K-42)	10
Potassium-43 (K-43)	10
Praseodymium-142 (Pr-142)	100
Praseodymium-143 (Pr-143)	100
Promethium-147 (Pm-147)	10
Promethium-149 (Pm-149)	10
<b>[Radon-222 (Rn-222)]</b>	<b>100]</b>
Rhenium-186 (Re-186)	100
Rhenium-188 (Re-188)	100

<u>Radioactive Material</u>	<u>Microcuries</u>
Rhodium-103m (Rh-103m)	100
Rhodium-105 (Rh-105)	100
Rubidium-81 (Rb-81)	10
Rubidium-86 (Rb-86)	10
Rubidium-87 (Rb-87)	10
Ruthenium-97 (Ru-97)	100
Ruthenium-103 (Ru-103)	10
Ruthenium-105 (Ru-105)	10
Ruthenium-106 (Ru-106)	1
Samarium-151 (Sm-151)	10
Samarium-153 (Sm-153)	100
Scandium-46 (Sc-46)	10
Scandium-47 (Sc-47)	100
Scandium-48 (Sc-48)	10
Selenium-75 (Se-75)	10
Silicon-31 (Si-31)	100
Silver-105 (Ag-105)	10
Silver-110m (Ag-110m)	1
Silver-111 (Ag-111)	100
Sodium-22 (Na-22)	10
Sodium-24 (Na-24)	10
Strontium-85 (Sr-85)	10
<b>[Strontium-87m (Sr-87m)]</b>	<b>10]</b>
Strontium-89 (Sr-89)	1
Strontium-90 (Sr-90)	0.1
Strontium-91 (Sr-91)	10
Strontium-92 (Sr-92)	10
Sulphur-35 (S-35)	100
Tantalum-182 (Ta-182)	10
Technetium-96 (Tc-96)	10
Technetium-97m (Tc-97m)	100
Technetium-97 (Tc-97)	100
Technetium-99m (Tc-99m)	100
Technetium-99 (Tc-99)	10
Tellurium-125m (Te-125m)	10
Tellurium-127m (Te-127m)	10
Tellurium-127 (Te-127)	100
Tellurium-129m (Te-129m)	10
Tellurium-129 (Te-129)	100
Tellurium-131m (Te-131m)	10

<u>Radioactive Material</u>	<u>Microcuries</u>
Tellurium-132 (Te-132)	10
Terbium-160 (Tb-160)	10
Thallium-200 (Tl-200)	100
Thallium-201 (Tl-201)	100
Thallium-202 (Tl-202)	100
Thallium-204 (Tl-204)	10
Thulium-170 (Tm-170)	10
Thulium-171 (Tm-171)	10
Tin-113 (Sn-113)	10
Tin-125 (Sn-125)	10
Tungsten-181 (W-181)	10
Tungsten-185 (W-185)	10
Tungsten-187 (W-187)	100
Vanadium-48 (V-48)	10
Xenon-131m (Xe-131m)	1,000
Xenon-133 (Xe-133)	100
Xenon-135 (Xe-135)	100
Ytterbium-175 (Yb-175)	100
Yttrium-87 (Y-87)	10
Yttrium-88 (Y-88)	10
Yttrium-90 (Y-90)	10
Yttrium-91 (Y-91)	10
Yttrium-92 (Y-92)	100
Yttrium-93 (Y-93)	100
Zinc-65 (Zn-65)	10
Zinc-69m (Zn-69m)	100
Zinc-69 (Zn-69)	1,000
Zirconium-93 (Zr-93)	10
Zirconium-95 (Zr-95)	10
Zirconium-97 (Zr-97)	10
Any radioactive material not listed above other than alpha emitting radioactive material	0.1