NOTICES OF FINAL RULEMAKING

The Administrative Procedure Act requires the publication of the final rules of the state's agencies. Final rules are those which have appeared in the *Register* first as proposed rules and have been through the formal rulemaking process including approval by the Governor's Regulatory Review Council or the Attorney General. The Secretary of State shall publish the notice along with the Preamble and the full text in the next available issue of the *Register* after the final rules have been submitted for filing and publication.

NOTICE OF FINAL RULEMAKING

TITLE 12. NATURAL RESOURCES

CHAPTER 1. RADIATION REGULATORY AGENCY

Editor's Note: The following Notice of Final Rulemaking was reviewed per Executive Order 2011-05 as issued by Governor Brewer. (See the text of the executive order on page 1926.) The Governor's Office authorized the notice to proceed through the rulemaking process on October 21, 2011.

[R12-131]

PREAMBLE

1. Article, Part, or Section Affected (as applicable) — **Rulemaking Action**

R12-1-102	Amend
R12-1-303	Amend
R12-1-305	Amend
R12-1-306	Amend
R12-1-310	Amend
R12-1-320	Amend
R12-1-710	Amend
Article 10	Amend
Exhibit A	Amend
R12-1-1501	Amend
R12-1-1509	Amend
R12-1-1510	Amend
R12-1-1513	Amend

2. Citations to the agency's statutory rulemaking authority to include the authorizing statute (general) and the implementing statute (specific):

Authorizing statute: A.R.S. § 30-654(B)(5)

Implementing statutes: A.R.S. §§ 30-651, 30-654, 30-657, 30-671(B), 30-672, 30-673, 30-681, 30-687, 30-688, and 30-689

3. The effective date of the rule:

September 10, 2012

4. Citations to all related notices published in the *Register* as specified in R1-1-409(A) that pertain to the record of the proposed rule:

Notice of Rulemaking Docket Opening: 17 A.A.R. 2345, November 18, 2011

Notice of Proposed rulemaking: 18 A.A.R. 170, January 27, 2012

5. The agency's contact person who can answer questions about the rulemaking:

Name:	Jerry W. Perkins
Address:	Arizona Radiation Regulatory Agency 4814 S. 40th St. Phoenix, AZ 85040
Telephone:	(602) 255-4845, ext. 272
Fax:	(602) 437-0705
E-mail:	jperkins@azrra.gov
Web site:	www.azrra.gov

6. An agency's justification and reason why a rule should be made, amended, repealed or renumbered, to include an explanation about the rulemaking:

This rulemaking package amends and adds several rules to ensure that Arizona radiation compliance program remains compatible with the Nuclear Regulatory Commission (NRC) regulations. This compatibility is a requirement under Arizona's agreement state status.

7. A reference to any study relevant to the rule that the agency reviewed and proposes either to rely on or not to rely on in its evaluation of or justification for the rule, where the public may obtain or review each study, all data underlying each study, and any analysis of each study and other supporting material:

None

8. A showing of good cause why the rulemaking is necessary to promote a statewide interest if the rulemaking will diminish a previous grant of authority of a political subdivision of this state:

Not applicable

9. A summary of the economic, small business, and consumer impact:

There is little or minimal economic impact from any of the proposed rules in this rulemaking. Currently all licensees and registrants pay an annual fee which covers the administrative cost and inspection fees for each facility registration number. This package has no fee increase or new requirements that would markedly change the way businesses operate with radiation safety concerns in mind. The amendments in this rulemaking catch-up Arizona with some of the federal regulations in accordance with the Agreement State document signed by the Governor on May 21, 1963.

10. A description of any changes between the proposed rulemaking, to include supplemental notices, and the final rulemaking:

Several grammatical, clarifying, and formatting changes were made to the proposed rules following the suggestions of the Office of the Secretary of State as well as staff from the Governor's Regulatory Review Council. Verbiage that was listed but not changed was modified to read "No change" for the final notice. Corrections to cross referenced rules were made to R12-1-303(A)(1), R12-1-303(A)(3), R12-1-303(A)(4), R12-1-303(C)(1), and R12-1-303(C)(7). The proposed new verbiage for R12-1-1510 was moved from subsection (A) to (C). An unnecessary word "byproduct" was removed from R12-1-306(B)(1). R12-1-303(A)(4) had a reference to incorporated material corrected to 10 CFR 32.11. The definition of Certificate of Compliance was modified to use the more appropriate term "authorizes" instead of "approves."

11. An agency's summary of the public or stakeholder comments made about the rulemaking and the agencies response to the comments:

Comments were offered to the agency by the Nuclear Regulatory Commission (NRC) in an e-mail dated March 2, 2012 with attachment dated February 28, 2012. Seven comments were offered by the NRC in response to the proposed rulemaking package that was noticed. The first comment related to the request that Arizona eliminate the practice of providing a limited license to local cardiologists to possess nuclear medicine that directly pertains to their scope of practice. The NRC would like to require cardiologists to meet the same training requirements that other practitioners must follow to be authorized for a wider range of nuclear material. However, Arizona believes that this would provide a medical hardship to residents of this state that may not have adequate cardiological care due to this increased restriction on this specialty. The agency believes that its existing practice best serves the public while ensuring that health and safety issues are still met. No action was taken based upon this comment.

The second comment the NRC offered was based upon a request to have Arizona allow an exemption for physicians to transport nuclear material within the state without meeting the packaging and transportation requirements. This exemption was thought to put the public health and safety of the citizens of Arizona as well as first responders that may be involved in an accident in significant risk. The exemption would make it possible for material to be transported in an unshielded or uncontained format and in the event of an accident the responders would be unaware of the danger due in part to lack of appropriate notification on the vehicle transporting the material. The agency continues to disagree with the NRC and believes that the health and safety of the citizens of Arizona are best served by requiring all that transport licensable quantities of nuclear material to meet all rules related to the safe transport of said material. No action was taken based upon this comment.

The third comment by the NRC appeared at first to be more substantial than it was. The comment referred to which subsection additional verbiage should have been listed in rule R12-1-1510. The recommended changes were moved from subsection (A) to (C) in the same rule in order to enhance clarity of the rule.

The fourth comment referred to a rule cross reference. As the rule was changed to add additional subsections, the cross reference needed to reflect this change. The cross reference was changed from (A)(2) to (A)(3) and (A)(4) as suggested by the comment. In addition, a correction as to which section of the federal rules listed a license condition was mentioned and R12-1-303(A)(4) was corrected as suggested. Finally this comment mentioned that the Arizona rules needed to reference a concentration in Exhibit A rather than a quantity in Exhibit B and this clarification was made to R12-1-303(A)(3).

The fifth comment was a recommendation to add an additional cross reference to R12-1-303(C)(1) to include the new subsection of (C)(7). This change was made. An additional clarification to use the Arizona term "exhibit" rather than the federal term "schedule" to remain consistent with Arizona's current rules.

The sixth comment related to an extra word, "byproduct," in rule R12-1-306(B)(1) following the verbiage of the incorporated material. The additional word caused confusion in the rule as it was not needed. The term "byproduct" was removed from the new language portion of the rule.

The seventh comment was a repeat comment of a portion of the fourth comment in the same letter and was addressed as stated previously.

The public hearing which included the Radiation Hearing Board meeting was conducted on March 2nd at 9:00 a.m. No members of the general public attended or made comments and the board approved adoption of the rules subject to the modifications recommended by the NRC.

12. All agencies shall list other matters prescribed by statute applicable to the specific agency or to any specific rule or class of rules. Additionally, an agency subject to Council review under A.R.S. §§ 41-1052 and 41-1055 shall respond to the following questions:

a. Whether the rule requires a permit, whether a general permit is used and if not, the reasons why a general permit is not used:

The rules refer to permits both general and specific. The general permit applies to exempt levels of radioactive material, and specific permits are issued by rule for quantities and uses that are specific to the user and his or her training or scope of practice in accordance with A.R.S. § 30-671.

b. Whether a federal law is applicable to the subject of the rule, whether the rule is more stringent than federal law and if so, citation to the statutory authority to exceed the requirements of federal law:

The rule amendments are compatible with existing federal regulations and are not more stringent.

c. Whether a person submitted an analysis to the agency that compares the rule's impact of the competitiveness of business in this state to the impact on business in other states:

No analysis has been submitted.

13. A list of any incorporated by reference material as specified in A.R.S. § 41-1028 and its location in the rules:

Rule	Incorporated Material
R12-1-102	
"Certificate of Compliance"	10 CFR 71 Subpart D
"Radiation Safety Officer"	10 CFR 35.50(a) or (c)(1) and 10 CFR 35.59
R12-1-306(B)(1)	10 CFR 31.5(b), (c), and (d)
R12-1-306(B)(4)(g)	10 CFR 110
R12-1-306(D)(1)	10 CFR 32.57 or 10 CFR 70.39
R12-1-306(E)(3)	10 CFR 32.21
R12-1-1509(A)	49 CFR 173.417(a)
R12-1-1510(B)(1)(a)	10 CFR 71.85(c)
R12-1-1510(B)(1)(b)	49 CFR 173.403
R12-1-1510(B)(2)(a)	10 CFR 71.85(c)
R12-1-1510(B)(2)(b)	49 CFR 173.403
R12-1-1510(B)(3)(a)	10 CFR 71.71 and 71.73
R12-1-1510(B)(3)(b)	10 CFR 71.71 and 71.73
R12-1-1510(B)(5)	10 CFR 71.4
R12-1-1510(C)	49 CFR 173 and 178
R12-1-1510(C)(2)(b)	10 CFR 71, Subparts A, G, and H
R12-1-1510(C)(3)	49 CFR 173.403
R12-1-1510(C)(6)(c)	10 CFR 71.22
R12-1-1510(D)(1)	49 CFR 171.12

R12-1-1510 (D)(3)(b)(ii)	10 CFR 71, Subparts A, G, and H
R12-1-1510 (F)(8)	10 CFR 71.45
R12-1-1510 (F)(9)	49 CFR 173.443
R12-1-1510 (F)(10)	10 CFR 71.47
R12-1-1510 (F)(11)	10 CFR 71.43(g)
R12-1-1513	10 CFR 20.1906(e)

14. Whether the rule was previously made, amended or repealed as an emergency rule. If so, cite the notice published in the *Register* as specified in R1-1-409(A). Also, the agency shall state where the text was changed between the emergency and the final rulemaking packages:

Not applicable

15. The full text of the rules follows:

TITLE 12. NATURAL RESOURCES

CHAPTER 1. RADIATION REGULATORY AGENCY

ARTICLE 1. GENERAL PROVISIONS

Section
R12-1-102. Definitions

ARTICLE 3. RADIOACTIVE MATERIAL LICENSING

Section
R12-1-303. Radioactive Material Other Than Source Material: Exemptions
R12-1-305. General Licenses – Source Material
R12-1-306. General License – Radioactive Material Other Than Source Material
R12-1-310. Special Requirements for Issuance of Specific Broad Scope Licenses
R12-1-320. Reciprocal Recognition of Licenses

ARTICLE 7. MEDICAL USES OF RADIOACTIVE MATERIAL

Section
R12-1-710. Radiation Safety Officer Training

ARTICLE 10. NOTICES, INSTRUCTIONS, AND REPORTS TO ~~IONIZING~~ RADIATION WORKERS; INSPECTIONS

Section
Exhibit A. Form ARRA-6 (~~1993~~ 2012) Notice to Employees

ARTICLE 15. TRANSPORTATION

Section
R12-1-1501. Requirement for License
R12-1-1509. ~~Reserved~~ General License: Plutonium-Beryllium Special Form Material
R12-1-1510. Packaging
R12-1-1513. ~~Reserved~~ Opening Instructions

ARTICLE 1. GENERAL PROVISIONS

R12-1-102. Definitions

Terms defined in A.R.S. § 30-651 have the same meanings when used in this Chapter unless the context otherwise requires. Additional subject-specific definitions are used in other Articles.

"A_1" No change

"A_2" No change

"Absorbed dose" No change

"Accelerator" No change

"Accelerator produced material" No change

"Act" No change

"Activity" No change
"Adult" No change
"Agency" or "ARRA" No change
"Agreement State" No change
"Airborne radioactive material" No change
"Airborne radioactivity area" No change
"ALARA" No change
"Analytical x-ray equipment" No change
"Analytical x-ray system" No change
"Annual" No change
"Background radiation" No change
"Becquerel" No change
"Bioassay" No change
"Brachytherapy" No change
"By-product material" No change
"Calendar quarter" No change
"Calibration" No change
"Certifiable cabinet x-ray system" No change
"Certified cabinet x-ray system" No change
"Certificate holder" means a person who has been issued a certificate of compliance or other package approval by the Agency or NRC.
"Certificate of Compliance" (CoC) means the certificate issued by the NRC under 10 CFR 71, Subpart D, (Revised January 1, 2010, incorporated by reference, and available under R12-1-101. This incorporated material contains no future editions or amendments.), which authorizes the design of a package for the transportation of radioactive material.
"CFR" No change
"Chelating agent" No change
"Civil penalty" No change
"Collective dose" No change
"Committed dose equivalent" No change
"Committed effective dose equivalent" No change
"Curie" No change
"Current license or registration" No change
"Deep-dose equivalent" No change
"Depleted uranium" No change
"Dose" No change
"Dose equivalent" No change
"Dose limits" No change
"Dosimeter" No change
"Effective dose equivalent" No change
"Effluent release" No change
"Embryo/fetus" No change
"Enclosed beam x-ray system" No change
"Enclosed radiography" No change
    "Cabinet radiography" No change
    "Shielded room radiography" No change
"Entrance or access point" No change
"Exhibit" No change

"Explosive material" No change
"Exposure" No change
"Exposure rate" No change
"External dose" No change
"Extremity" No change
"Fail-safe characteristics" No change
"Field radiography" No change
"Field station" No change
"Former U.S. Atomic Energy Commission (AEC) or U.S. Nuclear Regulatory Commission (NRC) licensed facilities" No change
"Generally applicable environmental radiation standards" No change
"Gray" No change
"Hazardous waste" No change
"Healing arts" No change
"Health care institution" No change
"High radiation area" No change
"Human use" No change
"Impound" No change
"Individual" No change
"Individual monitoring" No change
"Individual monitoring device" No change
"Individual monitoring equipment" No change
"Industrial radiography" No change
"Injection tool" No change
"Inspection" No change
"Interlock" No change
"Internal dose" No change
"Irradiate" No change
"Laser" No change
"Lens dose equivalent" No change
"License" No change
"Licensed material" No change
"Licensed practitioner" No change
"Licensee" No change
"Licensing State" No change
"Limits" No change
"Local components" No change
"Logging supervisor" No change
"Logging tool" No change
"Lost or missing licensed or registered source of radiation" No change
"Low-level waste" No change
"Major processor" No change
"Medical dose" No change
"Member of the public" No change
"MeV" No change
"Mineral logging" No change
"Minor" No change

"Monitoring" No change

"Multiplier" No change

"NARM" No change

"Normal operating procedures" No change

"Natural radioactivity" No change

"NRC" No change

"Nuclear waste" No change

"Occupational dose" No change

"Open beam system" No change

"Package" No change

"Particle accelerator" No change

"Permanent radiographic installation" No change

"Personnel dosimeter" No change

"Personnel monitoring equipment" No change

"Personal supervision" No change

"Pharmacist" No change

"Physician" No change

"Preceptor" means an individual who provides, directs, or verifies training and experience required for an individual to become an authorized user, an authorized medical physicist, an authorized nuclear pharmacist, or a Radiation Safety Officer.

"Primary beam" No change

"Public dose" No change

"Pyrophoric liquid" No change

"Pyrophoric solid" No change

"Qualified expert" No change

"Quality Factor" No change

"Quarter" No change

"Rad" No change

"Radiation" No change

"Radiation area" No change

"Radiation dose" No change

"Radiation machine" No change

"Radiation Safety Officer ~~safety officer~~" (RSO) means the individual and who for license conditions:

Meets the requirements in 10 CFR 35.50(a) or (c)(1) and 10 CFR 35.59, (revised January 1, 2010, incorporated by reference, and available under R12-1-101. This incorporated material contains no future editions or amendments.); or is identified as a Radiation Safety Officer on a specific medical use license issued by the NRC or an Agreement State; or a medical use permit issued by a NRC master material licensee;

Or, who, for registration conditions, is designated by the ~~licensee or~~ registrant as the individual who has the knowledge, authority, and responsibility to apply appropriate radiation protection principles to ensure radiation safety and compliance with the Act, this Chapter and any ~~license, or~~ registration conditions.

"Radioactive marker" No change

"Radioactive material" No change

"Radioactivity" No change

"Radiographer" No change

"Radiographer's assistant" No change

"Registrant" No change

"Registration" No change

"Regulations of the U.S. Department of Transportation" No change

"Rem" No change
"Research and Development" No change
"Restricted area" No change
"Roentgen" No change
"Safety system" No change
"Sealed source" No change
"Sealed Source and Device Registry" No change
"Shallow-dose equivalent" No change
"Shielded position" No change
"Sievert" No change
"Site boundary" No change
"Source changer" No change
"Source holder" No change
"Source material" No change
"Source material milling" No change
"Source of radiation" or "source" No change
"Special form radioactive material" No change
"Special nuclear material in quantities not sufficient to form a critical mass" No change
"Storage area" No change
"Storage container" No change
"Subsurface tracer study" No change
"Survey" No change
"TEDE" No change
"Teletherapy" No change
"Temporary job site" No change
"Test" No change
"These rules" No change
"Total Effective Dose Equivalent" (TEDE) No change
"Total Organ Dose Equivalent" (TODE) No change
"Unrefined and unprocessed ore" No change
"Unrestricted area" No change
"U.S. Department of Energy" No change
"Very high radiation area" No change
"Waste" No change
"Waste handling licensees" No change
"Week" No change
"Well-bore" No change
"Well-logging" No change
"Whole body" No change
"Wireline" No change
"Wireline service operation" No change
"Worker" No change
"WL" No change
"WLM" No change
"Workload" No change
"Year" No change

ARTICLE 3. RADIOACTIVE MATERIAL LICENSING

R12-1-303. Radioactive Material Other Than Source Material; Exemptions

A. No change

1. Except as provided in ~~subsection (A)(2)~~ subsections (A)(3) and (4), any person is exempt from this Article if the person receives, possesses, uses, transfers, owns, or acquires products or materials containing radioactive material in concentrations not in excess of those listed in Exhibit A.
2. This Section shall not be deemed to authorize the import of byproduct material or products containing byproduct material.
3. A manufacturer, processor, or producer of a product or material is exempt from the requirements for a license issued under R12-1-311(A) or the requirements of this Article to the extent that this person transfers byproduct material contained in a product or material in concentrations not in excess of those specified in Exhibit A of this Article and introduced into the product or material by a licensee holding a specific license issued by the Commission expressly authorizing such introduction. This exemption does not apply to the transfer of byproduct material contained in any food, beverage, cosmetic, drug, or other commodity or product designed for ingestion or inhalation by, or application to, a human being.

~~2.~~4. A person shall not introduce radioactive material into a product or material knowing or having reason to believe that it will be transferred to persons exempt under subsection (A)(1) or equivalent Regulations of the U.S. Nuclear Regulatory Commission or any Agreement State or Licensing State, except in accordance with ~~a general license prescribed in R12-1-320~~ a license issued under 10 CFR 32.11.

B. No change

1. No change
   a. No change
      i. 925 ~~MBq~~ megabecquerels (25 millicuries) of tritium per timepiece,
      ii. 185 ~~MBq~~ megabecquerels (5 millicuries) of tritium per hand,
      iii. 555 ~~MBq~~ megabecquerels (15 millicuries) of tritium per dial (bezels are considered part of the dial),
      iv. 3.7 ~~MBq~~ megabecquerels (100 microcuries) of promethium-147 per watch or 7.4 ~~MBq~~ megabecquerels (200 microcuries) of promethium-147 per any other timepiece,
      v. 740 kBq (20 microcuries) of promethium-147 per watch hand or 1.48 ~~MBq~~ megabecquerels (40 microcuries) of promethium-147 per other timepiece hand,
      vi. 2.22. ~~MBq~~ megabecquerels (60 microcuries) of promethium-147 per watch dial or 4.44 ~~MBq~~ megabecquerels (120 microcuries) of promethium-147 per other timepiece dial (bezels are considered part of the dial),
      vii. No change
         (1) No change
         (2) No change
         (3) No change
      viii. No change
   ~~b. Lock illuminators containing not more than 555 MBq (15 millicuries) of tritium or not more than 74 MBq megabecquerels (2 millicuries) of promethium-147 installed in automobile locks. The levels of radiation from each lock illuminator containing promethium-147 shall not exceed 10 Gy (1 millirad) per hour at 1 centimeter from any surface when measured through 50 milligrams per square centimeter of absorber;~~
   ~~c.~~b. Balances of precision containing not more than 37 megabecquerels (1 millicurie) of tritium per balance or not more than 18.5 megabecquerels (0.5 millicurie) of tritium per balance part manufactured before December 17, 2007;
   ~~d. Automobile shift quadrants containing not more than 925 MBq (25 millicuries) of tritium;~~
   ~~e.~~c. Marine compasses containing not more than 27.75 gigabecquerels (750 millicuries) of tritium gas and other marine navigational instruments containing not more than 9.25 gigabecquerels (250 millicuries) of tritium gas manufactured before December 17, 2007;
   ~~f. Thermostat dials and pointers containing not more than 925 MBq (25 millicuries) of tritium per thermostat;~~
   ~~g.~~d. Electron tubes: Provided that each tube does not contain more than one of the following specified quantities of radioactive material:
      i. 5.55 GBq (150 millicuries) of tritium per microwave receiver protector tube or 370 ~~MBq~~ megabecquerels (10 millicuries) of tritium per any other electron tube;
      ii. No change
      iii. No change
      iv. 1.11 ~~MBq~~ megabecquerels (30 microcuries) of krypton 85;
      v. No change
      vi. 1.11 ~~MBq~~ megabecquerels (30 microcuries) of promethium-147;
      vii. And provided further, that the level of radiation due to radioactive material contained in each electron tube does not exceed 10 Gy (1 millirad) per hour~~)~~ at 1 centimeter from any surface when measured through 7 mil-

ligrams per square centimeter of absorber. The term "electron tubes" includes spark gap tubes, power tubes, gas tubes, including glow lamps, receiving tubes, microwave tubes, indicator tubes, pick-up tubes, radiation detection tubes, and any other completely sealed tube that is designed to conduct or control electrical current.

h. e. Ionizing radiation measuring instruments containing, for purposes of internal calibration or standardization, one or more sources of radioactive material provided that:
   i. Each source contains no more than one exempt quantity set forth in Exhibit B of this Article; and
   ii. No change
   iii. No change
   iv. Spark gap irradiators containing not more than 37 kBq (1 microcurie) of cobalt-60 per spark gap irradiator for use in electrically ignited fuel oil burners having a firing rate of at least 3 gallons per hour (11.4 liters/hr or 0.0114 m 3 /hr).

f. Ionization chamber smoke detectors containing not more than 1 microcurie ([micro]Ci) of americium-241 per detector in the form of a foil and designed to protect life and property from fires.

2. Resins containing scandium-46 and designed for sand consolidation in oil wells. A person is exempt from this Chapter if the person receives, possesses, uses, transfers, owns, or acquires synthetic plastic resins containing scandium-46 which are designed for sand consolidation in oil wells. The described resins shall be manufactured, initially transferred for sale or distribution, or imported according to a specific license issued by the U.S. Nuclear Regulatory Commission, or shall be manufactured according to the specifications contained in a specific license issued by the Agency or any Agreement State to the manufacturer of the described resins according to licensing requirements equivalent to those in 10 CFR 32.16 of the U.S. Nuclear Regulatory Commission. This exemption does not authorize the manufacture, or initially transferred for sale or distribution, of any resins containing scandium-46.

3. 2. Self-luminous products
   a. No change
   b. No change

4. 3. Gas and aerosol detectors containing radioactive material
   a. No change
   b. No change

C. No change
1. Except as provided in subsections (C)(2), and (3), and (7), a person is exempt from this Chapter if the person receives, possesses, uses, transfers, owns, or acquires radioactive material in individual quantities each of which does not exceed the applicable quantity set forth in Exhibit B of this Article.
2. No change
3. No change
4. No change
5. No change
6. Any person, who possesses byproduct material received or acquired before September 25, 1971, under the general license issued under R12-1-311(A) of this Article or similar general license of an Agreement State or the NRC, is exempt from the requirements for a license issued under R12-1-311(A) of this Article to the extent that this person possesses, uses, transfers, or owns byproduct material.
7. No person may, for purposes of producing an increased radiation level, combine quantities of byproduct material covered by the exemption described in subsection (C)(6) so that the aggregate quantity exceeds the limits set forth in Exhibit B, except for byproduct material combined within a device placed in use before May 3, 1999, or as otherwise permitted by the rules in this Section.

R12-1-305. General Licenses –Source Material

A. This subsection grants a general license that authorizes a person such as commercial and industrial firms; research, educational, and medical institutions; and state and local government agencies to use, and transfer not more than 6.8 kg (15 pounds) of source material at any one time for research, development, educational, commercial, or operational purposes. A person authorized under this subsection shall not receive more than 68.2 kg (150 pounds) of source material in one calendar year.

B. No change

C. No change
1. No change
2. No change
3. No change

D. No change
1. No change
2. No change
3. No change

4. No change
5. No change

E. No change

R12-1-306. General License – Radioactive Material Other Than Source Material

A. This subsection grants a general license that authorizes ~~a person such as~~ a commercial or industrial firm, to transfer, receive, acquire, own, possess, and use radioactive material incorporated in the following devices or equipment manufactured, tested, and labeled by the manufacturer in accordance with a specific license issued to the manufacturer by the U.S. Nuclear Regulatory Commission under 10 CFR 31.3. The devices regulated by this subsection include:

1. No change
2. No change

B. Certain detecting, measuring, gauging or controlling devices.

1. This subsection grants a general license that authorizes ~~a person such as~~ a commercial or industrial firm; a research, educational or medical institution; an individual conducting business; or a state or local government agency to receive, acquire, possess, use, or transfer radioactive material according to the provisions of 10 CFR 31.5(b), (c), and (d), (Revised ~~revised~~ January 1, ~~2008,~~ 2010, incorporated by reference, and available under R12-1-101. The incorporated material contains no future editions or amendments.); contained in devices designed and manufactured for the purpose of detecting, measuring, gauging or controlling thickness, density, level, interface location, radiation, leakage, qualitative or quantitative chemical composition, or for producing light or an ionized atmosphere.
2. No change
3. No change
   a. No change
   b. No change
4. No change
   a. No change
   b. No change
      i. No change
      ii. No change
   c. No change
      i. No change
      ii. No change
   d. No change
   e. No change
      i. No change
      ii. No change
      iii. No change
   f. No change
   g. Not export a device that contains radioactive material except in accordance with 10 CFR 110, ~~January 1, 2005, which is incorporated by reference, published by the Office of the Federal Register National Archives and Records Administration, Washington, D.C. 20408, and on file with the Agency. The material incorporated by reference contains no future editions or amendments.~~ revised January 1, 2010, incorporated by reference, and available under R12-1-101. The incorporated material contains no future editions or amendments.
   h. No change
   i. No change
      i. No change
      ii. No change
      iii. No change
   j. No change
   k. No change
      i. No change
      ii. No change
   l. No change
   m. No change
   n. No change
   o. No change
   p. No change
   q. No change
      i. No change
      ii. No change
      iii. No change

iv. No change
v. No change
vi. No change
r. No change
s. No change
5. No change
6. No change
7. The general license in subsection (B)(1) of this Section does not authorize the manufacture or import of devices containing byproduct material.

C. No change
1. No change
2. No change
a. No change
b. No change
c. No change
d. No change
e. No change

D. No change
1. This subsection grants a general license for calibration or reference sources that have been manufactured according to the specifications contained in a specific license issued to the manufacturer or importer of the sources by the U.S. Nuclear Regulatory Commission under 10 CFR 32.57 or 10 CFR 70.39. This general license also governs calibration or reference sources that have been manufactured according to specifications contained in a specific license issued to the manufacturer by the Agency, an Agreement State, or a Licensing State, according to licensing requirements equivalent to those contained in 10 CFR 32.57 or 10 CFR 70.39, ~~as applicable, January 1, 2004, which are incorporated by reference, published by the Office of the Federal Register, National Archives and Records Administration, Washington D.C. 20408, and on file with the Agency. The material incorporated by reference contains no future editions or amendments.~~ revised January 1, 2010, incorporated by reference, and available under R12-1-101. The incorporated material contains no future editions or amendments.
2. No change
a. No change
b. No change
i. No change
ii. No change
c. No change
d. No change
e. No change
3. No change
4. No change

E. This subsection grants a general license that authorizes a person to receive, possess, use, transfer, own, or acquire carbon-14 urea capsules, which contain one microcurie of carbon-14 urea for "in vivo" human diagnostic use.
~~Receipt, possession, use, transfer, ownership or acquisition of carbon-14 urea capsules containing 1 microcurie of carbon-14 urea for "in vivo" human diagnostic use:~~
1. No change
2. No change
3. A physician who desires to manufacture, prepare, process, produce, package, repackage, or transfer carbon-14 urea capsules for commercial distribution shall obtain a specific license from the Agency, issued according to the requirements in 10 CFR 32.21, (Revised ~~revised~~ January 1, ~~2008~~ 2010, incorporated by reference, and available under R12-1-101. This incorporated material contains no future editions or amendments.)
4. No change

F. This subsection grants a general license that authorizes any physician, clinical laboratory, or hospital to use radioactive material for certain ~~in vitro~~ "in vitro" clinical or laboratory testing.
1. No change
a. Iodine-125, in units not exceeding 370 ~~kBq~~ kilobecquerel (10 microcuries) each for use in ~~in vitro~~ "in vitro" clinical or laboratory tests not involving internal or external administration of radioactive material, or radiation from such material, to human beings or animals.
b. Iodine-131, in units not exceeding 370 ~~kBq~~ kilobecquerel (10 microcuries) each for use in ~~in vitro~~ "in vitro" clinical or laboratory tests not involving internal or external administration of radioactive material, or the radiation from such material, to human beings or animals.
c. Carbon-14, in units not exceeding 370 ~~kBq~~ kilobecquerel (10 microcuries) each for use in ~~in vitro~~ "in vitro" clin-

ical or laboratory tests not involving internal or external administration of radioactive material, or the radiation from such material, to human beings or animals.

d. Hydrogen-3 (tritium), in units not exceeding 1.85 ~~MBq~~ megabecquerel (50 microcuries) each for use in ~~in vitro~~ "in vitro" clinical or laboratory tests not involving internal or external administration of radioactive material, or the radiation from such material, to human beings or animals.

e. Iron-59, in units not exceeding 740 ~~kBq~~ kilobecquerel (20 microcuries) each for use in ~~in vitro~~ "in vitro" clinical or laboratory tests not involving internal or external administration of radioactive material, or the radiation from such material, to human beings or animals.

f. Cobalt-57 or selenium-75, in units not exceeding 370 ~~kBq~~ kilobecquerels (10 microcuries) each for use in ~~in vitro~~ "in vitro" clinical or laboratory tests not involving internal or external administration of radioactive material, or the radiation from such material, to human beings or animals.

g. Mock iodine-125 reference or calibration sources, in units not exceeding 1.85 kBq (50 nanocurie) of iodine-129 and 185 ~~Bq~~ becquerel (5 nanocurie) of americium-241 each, for use in ~~in vitro~~ "in vitro" clinical or laboratory tests not involving internal or external administration of radioactive material, or the radiation from such material, to human beings or animals.

2. A person shall not acquire, receive, possess, use, or transfer radioactive material according to the general license established by this subsection until the person has filed with the Agency ARRA-9, "Certificate – ~~In Vitro~~ "In Vitro" Testing with Radioactive Material Under General License,"~~;~~ provided the information listed in Exhibit E, and received a validated copy of ARRA-9, which indicates the assigned certification number. The physician, clinical laboratory, or hospital shall furnish on ARRA-9 the following information:

a. No change

b. A statement that the physician, clinical laboratory, or hospital has radiation measuring instruments to carry out ~~in vitro~~ "in vitro" clinical or laboratory tests with radioactive material and that tests will be performed only by personnel competent to use the instruments and handle the radioactive material.

3. No change

a. No change

b. No change

c. No change

d. No change

e. No change

4. No change

a. No change

b. No change

i. No change

ii. No change

5. No change

a. No change

b. No change

6. No change

G. No change

1. No change
2. No change
3. No change
4. No change
5. No change

R12-1-310. Special Requirements for Issuance of Specific Broad Scope Licenses

A. The Agency shall issue three classes of academic and industrial broad scope licenses, and only a single class A medical broad scope license.

1. The license may authorize the radioactive materials in multi-curie quantities, and may authorize other radioactive materials and forms in addition to those listed in subsection (A)(1)(a). A license is a broad scope class A license if it:

a. Contains the exact wording "Any radioactive material with Atomic Number 3 through 83" or "Any radioactive material with Atomic Number 84 through 92" in License Item 6, and

b. Contains the word "any" to authorize the chemical or physical form of the materials in License Item 7.

~~c. The license may authorize the radioactive materials in multi-curie quantities, and may authorize other radioactive materials and forms in addition to those listed in subsection (A)(1)(a).~~

2. No change

a. No change

b. No change

3. No change

a. No change
b. No change

B. No change
1. No change
   a. No change
   b. No change
   c. No change
      i. No change
      ii. No change
      iii. No change
         (1) No change
         (2) No change
         (3) No change
2. No change
   a. No change
   b. No change
      i. No change
      ii. No change
         (1) No change
         (2) No change
         (3) No change
3. No change
   a. No change
   b. No change
      i. No change
      ii. No change
   c. No change

C. No change
1. No change
2. No change
3. No change
4. No change

D. No change
E. No change
F. No change

R12-1-320. Reciprocal Recognition of Licenses

A. This subsection grants a general license to perform specific licensed activities in Arizona for a period not to exceed 180 days in any calendar year to any person who holds a specific license <u>from an Agreement State, where the licensee maintains an office for directing the licensed activity and retaining radiation safety records, is granted a general license to conduct the same</u> ~~for~~ activity involving the use of radioactive material from the U.S. Nuclear Regulatory Commission, Licensing State, or any Agreement State, provided that:
1. No change
2. No change
3. No change
4. No change
5. No change
   a. No change
   b. No change

B. No change
1. No change
2. No change
3. No change
4. No change

C. No change
D. No change
E. No change
1. No change
2. No change

F. No change

ARTICLE 7. MEDICAL USES OF RADIOACTIVE MATERIAL

R12-1-710. Radiation Safety Officer Training

A. No change

1. Is certified by a specialty board whose certification process includes all of the requirements in subsection ~~(2)~~ (A)(2) and whose certification has been recognized by the Agency, NRC, or an Agreement State~~; or~~. To have its certification process recognized, a specialty board shall require all candidates for certification to:
   a. Meet the following minimum requirements:
      i. Hold a bachelor's or graduate degree from an accredited college or university in physical science or engineering or biological science with a minimum of 20 college credits in physical science;
      ii. Have five or more years of professional experience in health physics (graduate training may be substituted for no more than two years of the required experience) including at least three years in applied health physics; and
      iii. Pass an examination administered by diplomates of the specialty board, which evaluates knowledge and competence in radiation physics and instrumentation, radiation protection, mathematics pertaining to the use and measurement of radioactivity, radiation biology, and radiation dosimetry; or
   b. Meet the following minimum requirements:
      i. Hold a master's or doctor's degree in physics, medical physics, other physical science, engineering, or applied mathematics from an accredited college or university;
      ii. Have two years of full-time practical training and/or supervised experience in medical physics;
         (1) Under the supervision of a medical physicist who is certified in medical physics by a specialty board recognized by the Commission or an Agreement State; or
         (2) In clinical nuclear medicine facilities providing diagnostic and/or therapeutic services under the direction of physicians who meet the requirements for authorized users qualified under subsection (B), R12-1-721, or R12-1-723;
      iii. Pass an examination, administered by diplomates of the specialty board, that assesses knowledge and competence in clinical diagnostic radiological or nuclear medicine physics and in radiation safety; or
2. No change
   a. 200 hours of didactic and laboratory training in the following areas:
      i. No change
      ii. No change
      iii. No change
      iv. No change
      v. No change
   b. No change
      i. No change
      ii. No change
      iii. Securing and controlling ~~radioactive~~ byproduct material;
      iv. Using administrative controls to avoid mistakes in the administration of ~~radioactive~~ byproduct material;
      v. No change
      vi. Using emergency procedures to control ~~radioactive~~ byproduct material; and
      vii. Disposing of ~~radioactive~~ byproduct material; ~~and~~ or
   c. No change
3. No change

B. No change

1. No change
2. No change

C. No change

ARTICLE 10. NOTICES, INSTRUCTIONS, AND REPORTS TO ~~IONIZING~~ RADIATION WORKERS; INSPECTIONS

Exhibit A. Form ARRA-6 (~~1993~~ 2012) Notice to Employees

ARRA-6 (~~1993~~ 2012) ARIZONA RADIATION REGULATORY AGENCY

NOTICE TO EMPLOYEES

STANDARDS FOR PROTECTION AGAINST ~~IONIZING~~ RADIATION; NOTICES, INSTRUCTIONS, AND REPORTS TO WORKERS; INSPECTIONS

In Article 4 of the Arizona Radiation Regulatory Agency (ARRA) rules for the Control of ~~Ionizing~~ Radiation, the Arizona Radiation Regulatory Agency has established standards for your protection against radiation hazards. In Article 10 of the rules for the Control of ~~Ionizing~~ Radiation, the Arizona Radiation Regulatory Agency has established certain provisions for the options of workers engaged in work under an ARRA license or registration.

YOUR EMPLOYER'S RESPONSIBILITY
Your employer is required to -

1. Apply these rules to work involving sources of ~~ionizing~~ radiation.
2. Post or otherwise make available to you a copy of the Arizona Radiation Regulatory Agency rules, licenses, and operating procedures which apply to work you are engaged in, and explain their provisions to you.
3. Post notice of violation involving radiological working conditions, proposed imposition of civil penalties, and orders.

YOUR RESPONSIBILITY AS A WORKER
You should familiarize yourself with those provisions of the Arizona Radiation Regulatory Agency rules and the operating procedures which apply to the work you are engaged in. You should observe their provisions for your own protection and protection of your co-workers.

WHAT IS COVERED BY THESE RULES

1. Limits on exposure to radiation and radioactive material in restricted and unrestricted areas~~.~~;
2. Measures to be taken after accidental exposure;
3. Personnel monitoring, surveys, and equipment;
4. Caution signs, labels, and safety interlock equipment;
5. Exposure records and reports;
6. Options for workers regarding ARRA inspections; and
7. Related matters.

REPORTS ON YOUR RADIATION EXPOSURE HISTORY

1. The Arizona Radiation Regulatory Agency rules require that your employer give you a written report if you receive an exposure in excess of any applicable limit set forth in the rules or in the license. The basic limits for exposure to employees are set forth in Article 4 of the rules. These Sections specify limits on exposure to radiation and exposure to concentrations of radioactive material in air and water.
2. If you work where personnel monitoring is required, and if you request information on your radiation exposures,
   a. Your employer must give you a written report, upon termination of your employment, of your radiation exposures; and
   b. Your employer must advise you annually of your exposure to radiation.

INSPECTIONS
All licensed or registered activities are subject to inspection by representatives of the Arizona Radiation Regulatory Agency. In addition, any worker or representative of workers who believes that there is a violation of the regulations issued thereunder, or the terms of the employer's license or rules with regard to radiological working conditions in which the worker is engaged, may request an inspection by sending a notice of the alleged violation to the Arizona Radiation Regulatory Agency. The request must set forth the specific grounds for the notice and must be signed by the worker on his own behalf or as a representative of the workers. During inspections, ARRA inspectors may confer privately with workers, and any worker may bring to the attention of the inspectors any past or present condition which he believes contributed to or caused any violation as described above.

INQUIRIES
Inquiries dealing with the matters outlined above can be sent to the:

ARIZONA RADIATION REGULATORY AGENCY

POSTING REQUIREMENT
IN ACCORDANCE WITH A.A.C. R12-1-1002, COPIES OF THIS NOTICE SHALL BE POSTED IN SUCH A MANNER TO PERMIT EMPLOYEES WORKING IN OR FREQUENTING ANY PORTION OF A RESTRICTED AREA, USED FOR ACTIVITIES LICENSED OR REGISTERED PURSUANT TO ARTICLE 2 OR ARTICLE 3 OF THE AGENCY'S RULES, TO OBSERVE A COPY OR COPIES ON THE WAY TO OR FROM THEIR WORK AREA.

ARTICLE 15. TRANSPORTATION

R12-1-1501. Requirement for License

A. A person shall not transport radioactive material or deliver radioactive material to a carrier for transport unless the person is authorized in a general or specific license issued by the Agency or exempt under R12-1-103(A).

B. This Article applies to any licensee to transfer licensed material if the licensee delivers that material to a carrier for transport, transports the material outside the site of usage as specified in the license, or transports that material on public high-

ways. No provision of this Article authorizes possession of licensed material.

R12-1-1509. ~~Reserved~~ General License: Plutonium-Beryllium Special Form Material

A. A general license is issued to any licensee of the Agency to transport fissile material in the form of plutonium-beryllium (Pu-Be) special form sealed sources, or to deliver Pu-Be sealed sources to a carrier for transport, if the material is shipped in accordance with this Article. This material must be contained in a Type A package. The Type A package must also meet the DOT requirements of 49 CFR 173.417(a), revised October 1, 2010, incorporated by reference, and available under R12-1-101. This incorporated material contains no future editions or amendments.

B. The general license applies only to a licensee who has a quality assurance program approved by the Agency as satisfying the provisions of R12-1-1507.

C. The general license applies only when a package's contents:
1. Contain no more than a Type A quantity of radioactive material; and
2. Contain less than 1000 g of plutonium, provided that: plutonium-239, plutonium-241, or any combination of these radionuclides, constitutes less than 240 g of the total quantity of plutonium in the package.

D. The general license applies only to packages labeled with a CSI which:
1. Has been determined in accordance with subsection (E) of this Section;
2. Has a value less than or equal to 100; and
3. For a shipment of multiple packages containing Pu-Be sealed sources, the sum of the CSIs must be less than or equal to 50 (for shipment on a nonexclusive use conveyance) and less than or equal to 100 (for shipment on an exclusive use conveyance).

E. The value for the CSI must be greater than or equal to the number calculated by the following equation:
1. CSI=10[(grams of ^{239}Pu + grams of ^{241}Pu)/24],
2. The calculated CSI must be rounded up to the first decimal place.

R12-1-1510. Packaging

A. No change
1. No change
2. No change
   a. No change
   b. No change
   c. No change
3. No change
4. No change

B. No change
1. No change
   a. Fabrication of the packaging is satisfactorily completed by August 31, 1986, as demonstrated by application of its model number in accordance with 10 CFR 71.85(c) (Revised January 1, ~~2008~~ 2010, incorporated by reference, and available under R12-1-101. This incorporated material contains no future editions or amendments.);
   b. A package that is used for a shipment to a location outside the United States is subject to multilateral approval, as defined in 49 CFR 173.403 (Revised October 1, ~~2007~~ 2010, incorporated by reference, and available under R12-1-101. This incorporated material contains no future editions or amendments.); and
   c. No change
   d. The licensee shall ascertain that there are no cracks, pinholes, uncontrolled voids, or other defects that could significantly reduce the effectiveness of the packaging;
   e. Where the maximum normal operating pressure will exceed 35 kPa (5 lbf/in^2) gauge, the licensee shall test the containment system 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; and
2. No change
   a. Fabrication of the packaging is satisfactorily completed by April 1, 1999 as demonstrated by application of its model number in accordance with 10 CFR 71.85(c) (Revised January 1, ~~2008~~ 2010, incorporated by reference, and available under R12-1-101. This incorporated material contains no future editions or amendments.);
   b. A package that is used for a shipment to a location outside the United States is subject to multilateral approval as defined in 49 CFR 173.403 (Revised October 1, ~~2007~~ 2010, incorporated by reference, and available under R12-1-101. This incorporated material contains no future editions or amendments.); and
   c. No change
3. No change
   a. The modifications of a Type B package are not significant with respect to the design, operating characteristics, or safe performance of the containment system, when the package is subjected to the tests specified in 10 CFR 71.71 and 71.73 (Revised January 1, ~~2008~~ 2010, incorporated by reference, and available under R12-1-101. This incorporated material contains no future editions or amendments.);

b. The modifications of a fissile material package are not significant, with respect to the prevention of criticality, when the package is subjected to the tests specified in 10 CFR 71.71 and 71.73 (Revised January 1, ~~2008~~ 2010, incorporated by reference, and available under R12-1-101. This incorporated material contains no future editions or amendments.); and
c. No change
4. No change
5. For purposes of this Section, package types are defined in 10 CFR 71.4, revised January 1, ~~2008~~ 2010, incorporated by reference, and available under R12-1-101. This incorporated material contains no future editions or amendments.

C. A general license is issued to any licensee of the Agency to transport fissile material, 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 173 and 178 (Revised October 1, ~~2007~~ 2010, incorporated by reference, and available under R12-1-101. This incorporated material contains no future editions or amendments.), if the following requirements are met:
1. No change
2. No change
a. No change
b. Comply with the terms and conditions of the specification and the applicable requirements in 10 CFR 71, Subparts A, G, and H, revised January 1, ~~2008~~ 2010, incorporated by reference, and available under R12-1-101. This incorporated material contains no future editions or amendments.
3. The licensee may not use the specification container for a shipment to a location outside the United States, except by multilateral approval, as defined in 49 CFR 173.403, revised October 1, ~~2007~~ 2010, incorporated by reference, and available under R12-1-101. This incorporated material contains no future editions or amendments.
4. The general license applies only when a package's contents:
a. Contain no more than a Type A quantity of radioactive material; and
b. Contain less than 500 total grams of beryllium, graphite, or hydrogenous material enriched in deuterium.
5. The general license applies only to packages containing fissile material that are labeled with a CSI which:
a. Has been determined in accordance with subsection (E) of this Section;
b. Has a value less than or equal to 10; and
c. For a shipment of multiple packages containing fissile material, the sum of the CSIs must be less than or equal to 50 (for shipment on a nonexclusive use conveyance) and less than or equal to 100 (for shipment on an exclusive use conveyance).
6. The CSI value must meet the following requirements:
a. The value for the CSI must be greater than or equal to the number calculated by the following equation: $CSI=10[(\text{grams of } {}^{235}U/X) + (\text{grams of } {}^{235}U/Y) + \text{grams of } {}^{235}U/Z)]$;
b. The calculated CSI must be rounded up to the first decimal place;
c. The values of X, Y, and Z used in the CSI equation must be taken from Tables 71–1 or 71–2 as appropriate located in 10 CFR 71.22, (revised January 1, 2010, incorporated by reference, and available under R12-1-101. This incorporated material contains no future editions or amendments.);
d. If Table 71–2 is used to obtain the value of X, then the values for the terms in the equation for uranium-233 and plutonium must be assumed to be zero; and
e. Table 71–1 values for X, Y, and Z must be used to determine the CSI if:
i. Uranium-233 is present in the package;
ii. The mass of plutonium exceeds 1 percent of the mass of uranium-235;
iii. The uranium is of unknown uranium-235 enrichment or greater than 24 weight percent enrichment; or
iv. Substances having a moderating effectiveness (i.e., an average hydrogen density greater than H_2O) (e.g., certain hydrocarbon oils or plastics) are present in any form, except as polyethylene used for packing or wrapping.

D. No change
1. A general license is issued to any licensee of the Agency to transport, or to deliver to a carrier for transport, licensed material in a package the design of which has been approved in a foreign national competent authority certificate that has been revalidated by the Federal Department of Transportation as meeting the applicable requirements of 49 CFR 171.12, revised October 1, ~~2007~~ 2010, incorporated by reference, and available under R12-1-101. This incorporated material contains no future editions or amendments.
2. No change
3. No change
a. No change
b. No change
i. No change
ii. Complies with the terms and conditions of the certificate and revalidation, and with the applicable requirements in 10 CFR 71, Subparts A, G, and H, revised January 1, ~~2008~~ 2010, incorporated by reference, and

available under R12-1-101. This incorporated material contains no future editions or amendments. With respect to the quality assurance provisions of Subpart H of the regulations, the licensee is exempt from design, construction, and fabrication requirements.

E. Assumptions as to unknown properties. 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 have credible values that will cause the maximum neutron multiplication.

F. Routine determination before each shipment of licensed material shall ensure that the package with its contents satisfies the applicable requirements of this Article and of the license. The licensee shall determine that:

1. The package is proper for the contents to be shipped;
2. The package is in unimpaired physical condition except for superficial defects such as marks or dents;
3. Each closure device of the packaging, including any required gasket, is properly installed and secured and free of defects;
4. Any system for containing liquid is adequately sealed and has adequate space or other specified provision for expansion of the liquid;
5. Any pressure relief device is operable and set in accordance with written procedures;
6. The package has been loaded and closed in accordance with written procedures;
7. For fissile material, any moderator or neutron absorber, if required, is present and in proper condition;
8. Any structural part of the package that could be used to lift or tie down the package during transport is rendered inoperable for that purpose, unless it satisfies the design requirements of 10 CFR 71.45 (revised January 1, 2010, incorporated by reference, and available under R12-1-101. This incorporated material contains no future editions or amendments.);
9. The level of non-fixed (removable) radioactive contamination on the external surfaces of each package offered for shipment is as low as reasonably achievable, and within the limits specified in DOT regulations in 49 CFR 173.443 (revised October 1, 2010, incorporated by reference, and available under R12-1-101. This incorporated material contains no future editions or amendments.);
10. External radiation levels around the package and around the vehicle, if applicable, will not exceed the limits specified in 10 CFR 71.47 (revised January 1, 2010, incorporated by reference, and available under R12-1-101. This incorporated material contains no future editions or amendments.), at any time during transportation; and
11. Accessible package surface temperatures will not exceed the limits specified in 10 CFR 71.43(g) (revised January 1, 2010, incorporated by reference, and available under R12-1-101. This incorporated material contains no future editions or amendments.), at any time during transportation.

R12-1-1513. ~~Reserved~~ Opening Instructions

Before delivery of a package to a carrier for transport, the licensee shall ensure that any special instructions needed to safely open the package have been sent to, or otherwise made available to, the consignee for the consignee's use in accordance with 10 CFR 20.1906(e) revised January 1, 2010, incorporated by reference, and available under R12-1-101. This incorporated material contains no future editions or amendments.