NOTICES OF SUPPLEMENTAL PROPOSED RULEMAKING

After an agency has filed a Notice of Proposed Rulemaking with the Secretary of State's Office for *Register* publication and the agency decides to make substantial changes to the rule after it is proposed, the agency must prepare a Notice of Supplemental Proposed Rulemaking for submission to the Office, and the Secretary of State shall publish the Notice under the Administrative Procedure Act (A.R.S. § 41-1001 et seq.). Publication of the Notice of Supplemental Proposed Rulemaking shall appear in the *Register* before holding any oral proceedings (A.R.S. § 41-1022).

NOTICE OF SUPPLEMENTAL PROPOSED RULEMAKING

TITLE 12. NATURAL RESOURCES

CHAPTER 1. RADIATION REGULATORY AGENCY

PREAMBLE

1. Register citation and date for the original Notice of Proposed Rulemaking:

Notice of Proposed Rulemaking: 7 A.A.R. 5764, December 28, 2001

2. Sections Affected	**Rulemaking Action**
R12-1-101	Amend
R12-1-102	Amend
R12-1-103	Amend
R12-1-104	Amend
R12-1-105	Amend
R12-1-106	Amend
R12-1-309	Amend
R12-1-319	Amend
R12-1-403	Amend
R12-1-423	Amend
R12-1-425	Amend
R12-1-434	Amend
Appendix A	Amend
R12-1-501	Repeal
R12-1-501	New Section
R12-1-502	Repeal
R12-1-502	New Section
R12-1-514	New Section
R12-1-521	Amend
R12-1-533	Amend
R12-1-535	New Section
R12-1-541	Amend
R12-1-542	New Section
Appendix A	New Section
R12-1-703	Amend
R12-1-704	Amend
R12-1-707	Amend
R12-1-714	Amend
R12-1-717	Amend
R12-1-718	Amend
Article 11	New Article
R12-1-1101	New Section
R12-1-1103	New Section
R12-1-1104	New Section
R12-1-1105	New Section
R12-1-1106	New Section
R12-1-1107	New Section
R12-1-1108	New Section
R12-1-1109	New Section

R12-1-1110	New Section
R12-1-1111	New Section
R12-1-1112	New Section
Appendix A	New Section
R12-1-1302	Amend
R12-1-1306	Amend
R12-1-1501	New Section
R12-1-1504	Amend
R12-1-1505	Amend
R12-1-1506	Amend
R12-1-1507	Amend
R12-1-1508	Amend

3. The specific authority for the rulemaking, including both the authorizing statute (general) and the statutes the rules are implementing (specific):

A.R.S. § 30-654(B)

4. The name and address of agency personnel with whom persons may communicate regarding the rules:

Name: Daniel H. Kuhl

Address: Arizona Radiation Regulatory Agency
4814 S. 40th Street
Phoenix, AZ 85040

Telephone: (602) 255-4845, ext. 233

Fax: (602) 437-0705

E-mail: dkuhl@arra.state.az.us

5. An explanation of the rule, including the agency's reasons for initiating the rule:

The purpose of R12-1-102 is to provide definitions to aid in understanding the rules contained in Chapter 1.

The purpose of R12-1-1504 is to establish radiation safety standards for intrastate transport and storage of radioactive material. The transportation rules were initiated about 30 years ago as part of the agreement the state of Arizona has with the United States Nuclear Regulatory Commission. The change to the definitions in Article 1 and the transportation rule in Article 15 were initiated as part of a five-year review that was accepted by the Governor's Regulatory Review Council on July 10, 2001 and rulemaking package that went before the G.R.R.C. in March of 2003.

6. An explanation of the substantial change that resulted in this supplemental notice:

The supplemental rulemaking is needed because incorrect reference is made to pertinent federal transportation regulations and their date of publication. The amendments will make the incorporated federal transportation regulations in R12-1-102 and R12-1-1504 consistent with other transportation rules contained in Chapter 1.

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

The amendment to this rule will not diminish a previous grant of authority of a political subdivision of this state.

8. The preliminary summary of the economic, small business, and consumer impact:

There will not be any significant economic impact as a result of the implementation of the proposed amendments. The benefits from the amendments are the continued safe transport and storage of radioactive material during transport in the state of Arizona.

Cost/benefit to implementing Agency: The Arizona Radiation Regulatory Agency (ARRA) will not experience an increase in its cost of operation as result of implementing the rule amendments.

Cost/benefit to other agencies and political subdivisions directly affected by the rule amendment: Other agencies and political subdivisions possessing a radioactive material license will not experience an increase in their cost of operation as result of implementing the rule amendments. There is a cost associated with the transport of radioactive material that all ARRA licensees are already familiar with. The amended rule will not impact this cost.

Cost/benefit to business (radioactive material licensees): Businesses possessing a radioactive material license will not experience an increase in their cost of operation as result of implementing the rule amendments. There is cost associated with the transport of radioactive material that all ARRA licensees are already familiar with. The amended rules will not impact this cost. This cost will be passed on to businesses that use the services of the licensees that transport or store the radioactive material. Because licensee programs vary greatly this cost has not been determined.

9. The name and address of agency personnel with whom persons may communicate regarding the accuracy of the economic, small business, and consumer impact statement:

Name: Aubrey V. Godwin, Director

Address: Arizona Radiation Regulatory Agency
4814 S. 40th Street
Phoenix, AZ 85040

Telephone: (602) 255-4845

Fax: (602) 437-0705

10. The time, place, and nature of the proceedings for the adoption, amendment, or repeal of the rule, or if no proceeding is scheduled, where, when, and how persons may request an oral proceeding on the proposed rule:

The ARRA will schedule a public hearing if a written request for the public hearing is made to the Agency. It should be noted that these rules were reviewed during the public hearing held at the Agency on February 27, 2002.

11. Any other matters prescribed by statute that are applicable to the specific agency or to any specific rule or class of rules:

None

12. Incorporations by reference and their location in the rule:

Rule	Incorporation
R12-1-102	49 CFR 100 through 180
R12-1-1504(A)(1) and (2)	49 CFR 171 through 180

13. The full text of the rules follows:

TITLE 12. NATURAL RESOURCES

CHAPTER 1. RADIATION REGULATORY AGENCY

ARTICLE 1. GENERAL PROVISIONS

Section
R12-1-101. Scope
R12-1-102. Definitions
R12-1-103. Exemptions
R12-1-104. Prohibited Uses
R12-1-105. ~~Units of Exposure and Dose~~ Quality Factors for Converting Absorbed Dose to Dose Equivalent
R12-1-106. Units of Activity

ARTICLE 3. RADIOACTIVE MATERIAL LICENSING

Section
R12-1-309. General Requirements for the Issuance of Specific Licenses
R12-1-319. Modification, Revocation, and Termination of Licenses

ARTICLE 4. STANDARDS FOR PROTECTION AGAINST IONIZING RADIATION

Section
R12-1-403. Definitions
R12-1-423. Use of Process or Other Engineering Controls
R12-1-425. Use of Individual Respiratory Protection Equipment
R12-1-434. General Requirements for Waste Disposal
Appendix A. Assigned Protection Factors for Respirators~~1~~

ARTICLE 5. RADIOGRAPHIC OPERATIONS

Section
R12-1-501. ~~Limits on Levels of Radiation for Radiographic Exposure Devices and Storage Containers~~ Definitions
R12-1-502. ~~Radiographic Equipment Standards and Equipment Failure Notification~~ Performance Requirements for Industrial Radiography Equipment
R12-1-514. ~~Repealed~~ Limits on External Radiation Levels from Storage Containers and Source Changers
R12-1-521. Radiographer and Radiographer's Assistant Qualifications, Radiographer Certification, and Audits
R12-1-533. Radiation Surveys and Survey Records
R12-1-535. ~~Reserved~~ Notifications
R12-1-541. Enclosed Radiography Using X-ray Machines
R12-1-542. ~~Repealed~~ Baggage Inspection Systems
Appendix A. ~~Repealed~~ Certification Program Requirements

ARTICLE 7. USE OF RADIONUCLIDES IN THE HEALING ARTS

Section
R12-1-703. License for Medical Use of Radioactive Material
R12-1-704. Supervision
R12-1-707. Quality Management Program
R12-1-714. Brachytherapy
R12-1-717. High Dose Rate Remote After-loading Brachytherapy Devices
R12-1-718. Gamma Stereotactic Radiosurgery

ARTICLE 11. ~~REPEALED~~ TECHNOLOGICALLY ENHANCED NATURALLY OCCURRING RADIOACTIVE MATERIAL (TENORM)

Section
R12-1-1101. ~~Repealed~~ Definitions
R12-1-1103. ~~Repealed~~ Exemptions
R12-1-1104. ~~Repealed~~ Standards for Radiation Protection
R12-1-1105. Release for Unrestricted Use
R12-1-1106. Reserved
R12-1-1107. Disposal and Transfer of Waste for Disposal
R12-1-1108. Specific Licenses
R12-1-1109. Issuance of Specific Licenses
R12-1-1110. Reserved
R12-1-1111. Safety Criteria for Products
R12-1-1112. Conditions of Use Under a Specific Licenses
Appendix A. Table of Organ Doses

ARTICLE 13. LICENSE AND REGISTRATION FEES

Section
R12-1-1302. License and Registration Categories
R12-1-1306. Table of Fees

ARTICLE 15. TRANSPORTATION

Section
R12-1-1501. ~~Reserved~~ Requirement for License
R12-1-1504. Intrastate Transportation and Storage of Radioactive Materials
R12-1-1505. Storing of Radioactive Material in Transport
R12-1-1506. Preparation of Radioactive Material for Transport
R12-1-1507. Packaging Quality Assurance
R12-1-1508. Advance Notification of Transport of Nuclear Waste

ARTICLE 1. GENERAL PROVISIONS

R12-1-101. Scope

Except as otherwise specifically provided these rules apply to all persons who receive, possess, use, transfer, own, or acquire any source of radiation; however, that nothing in these rules shall apply to any person to the extent that person is subject to the regulations of the Nuclear Regulatory Commission.

~~**A.** Except as otherwise specifically provided, these rules apply to all persons who receive, possess, use, transfer, own, or acquire any source of radiation.~~

~~**B.** This Chapter does not apply to a person to the extent such person is subject to regulation by the Nuclear Regulatory Commission.~~

~~**C.** State control of source material, by-product material, and special nuclear material in quantities not sufficient to form a critical mass is subject to the provisions of the agreement between the state and the U.S. Nuclear Regulatory Commission, signed March 30, 1967, incorporated by reference in this rule and on file with the Office of the Secretary of State, and to 10 CFR 150, 1996 Edition, published January 1, 1996, incorporated by reference and on file with the Agency and the Office of the Secretary of State. These incorporations by reference contain no future editions or amendments.~~

R12-1-102. Definitions

"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
"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 (H_T)" No change
"Dose limits" No change
"Dosimeter" No change
"Effective dose equivalent (H_E)" 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" or "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
"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" No change
"Radioactive marker" No change
"Radioactive material" No change
"Radioactivity" No change
"Radiographer" No change
"Radiographer's assistant" No change
"Radiographic exposure device" No change
"Registrant" No change
"Registration" No change
"Regulations of the U.S. Department of Transportation" means the federal regulations in 49 CFR 100 through ~~199,~~ 180, 2001 ~~1995~~ Edition, published October 1, 2001 ~~1995~~, by reference and on file with the Agency and Office of the Secretary of State. This incorporation by reference contains no future editions or amendments.
"Rem" No change
"Research and Development" No change
"Restricted area" No change
"Roentgen" No change
"Safety system" No change
"Sealed source" 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
"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

R12-1-103. Exemptions

A. Common and contract carriers, freight forwarders, and warehousemen who are subject to 49 CFR 107.103, 107.109, 107.111, 107.113, 171.2, 171.3, 172.200, 173.1, 173.3, 173.4, 173.401, 174.7, 175.3, 175.5, 175.10, 176.3, 176.5, 176.11, 176.24, 176.27, and 177.801, 2000 ~~1995~~ Edition, published October 1, 2000 ~~1995~~, of the U.S. Department of Transportation, or 39 CFR 111.1 of the U.S. Postal Service, 2001 ~~1995~~ Edition, published January 1, 2001 ~~1995~~, by reference and on file with the Agency and the Office of the Secretary of State, are exempt from this Chapter. In addition, they are exempt from this Chapter to the extent that they store radioactive material, for periods of less than 72 hours, in the regular course of their carriage for another or storage incident thereto. Private carriers who are subject to the regulations of the U.S. Department of Transportation are exempt from this Chapter to the extent that they transport radioactive material. Common, contract, and private carriers who are not subject to the regulations of the U.S. Department of Transportation or the U.S. Postal Service are subject to this Chapter. The above incorporation by reference contains no future editions or amendments.

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

b. No change

C. No change

R12-1-104. Prohibited Uses

~~**A.** Hand-held fluoroscopic screens shall not be used.~~

~~**B.** Shoe-fitting fluoroscopic devices shall not be used.~~

~~**C.** Sources of ionizing radiation shall not be used for the purpose of screening or inspecting individuals for concealed weapons, hazardous materials, stolen property, illegal goods or contra band, except as specifically authorized by law.~~

~~**D.** Deliberate exposure of an individual to the useful beam of an ionizing radiation machine or to a radiation beam from a non-ionizing device, known to be harmful to human tissue, for training or demonstration purposes shall not be permitted unless there is also a medical or dental indication for the exposure and the exposure is prescribed by a licensed practitioner.~~

A. A person shall not use the following fluoroscopic devices:

1. Hand-held fluoroscopic screens.
2. Shoe-fitting fluoroscopic devices.

B. Except as specifically authorized by law, a person shall not use sources of ionizing radiation for the purpose of screening an individual or inspecting an individual for:

1. Concealed weapons;
2. Hazardous materials;
3. Stolen property; or
4. Contraband.

C. Unless there is a medical or dental indication for the exposure and the exposure is prescribed by a licensed practitioner, a person shall not deliberately expose an individual to the useful beam from:

1. An ionizing radiation machine; or
2. A non-ionizing radiation source, having a radiation beam known to be harmful to human tissue.

R12-1-105. ~~Units of Exposure and Dose~~ Quality Factors for Converting Absorbed Dose to Dose Equivalent

~~**A.** As used in these rules, the unit of "exposure" is [See definition in R12-1-102(41)].~~

~~**B.** As used in these rules, the units of "dose" are.~~

~~1. Gray is: [See definition in R12-1-102(53)].~~

~~2. Rad is: [See definition in R12-1-102(110)].~~

~~3. Rem is: [See definition in R12-1-102(124)].~~

~~4. Sievert is: [See definition in R12-1-102(132)].~~

~~**C.** As used in these rules, the quality factors for converting absorbed dose to dose equivalent are shown in Table I.~~

TABLE I
QUALITY FACTORS AND ABSORBED DOSE EQUIVALENCIES

TYPE OF RADIATION	Quality Factor (Q)	Absorbed Dose Equal to a Unit Dose Equivalent[a]
X, gamma, or beta radiation and high-speed electrons		1
Alpha particles, multiple-charged particles, fission fragments, and heavy particles of unknown charge	20	0.05
Neutrons of unknown energy	10	0.1
High-energy protons	10	0.1

[a]The absorbed dose in gray is equal to 1 Sv or the absorbed dose in rad is equal to 1 rem.

D. No change

R12-1-106. Units of Activity

For purposes of these rules, activity is expressed in the SI unit of becquerel (Bq) or in the special unit of curie (Ci), or their multiples, or disintegrations or transformations per unit of time. The definitions for these units are located in R12-1-102.

~~1. One becquerel (Bq) = (See definition in R12-1-102).~~
~~2. One curie (Ci) = (See definition in R12-1-102).~~

ARTICLE 3. RADIOACTIVE MATERIAL LICENSING

R12-1-309. General Requirements for the Issuance of Specific Licenses

A license application shall be approved if the Agency determines that:

1. No change
2. No change
3. No change
4. The applicant satisfies all applicable special requirements in R12-1-310, R12-1-311, R12-1-319(I), R12-1-322, R12-1-323, 12 A.A.C. 1, Article 5, 7, 11, and 17; and
5. No change
   a. No change
   b. No change

R12-1-319. Modification, Revocation, and Termination of Licenses

A. No change
B. No change
C. No change
D. ~~The Agency may terminate a specific license upon a written request by the licensee.~~ The following rules apply when determining radiological criteria for license termination in subsections (E) through (I):
   1. They do not apply to sites which have been decommissioned prior to the effective date of this rule and to sites that were decommissioned according to a standard for decommissioning that was in effect prior to the effective date of this rule.
   2. If a site is decommissioned after the effective date of this rule, additional cleanup will be required only if, based on new information, it determines that the criteria of these subsections were not met and residual radioactivity remaining at the site could result in significant threat to public health and safety.
   3. When calculating TEDE to the average member of the critical group (defined in Article 4) the licensee shall determine the peak annual TEDE dose expected within the first 1000 years after decommissioning.

E. A site will be considered acceptable for unrestricted use if the residual radioactivity that is distinguishable from background is equal to or less than the values in Table 1 and the radiation results in a TEDE to an average member of the critical group that does not exceed 0.25 mSv (25 mRem) per year, including that from groundwater sources of drinking water, and the residual radioactivity has been reduced to levels that are as low as reasonably achievable (ALARA).

TABLE 1

ACCEPTABLE SURFACE CONTAMINATION[1] LEVELS

	AVERAGE[2,3,6]	MAXIMUM[2,4,6]	REMOVABLE[2,3,5,6]
Alpha	5,000 dpm/100 cm^2	15,000 dpm/100cm^2	1,000 dpm/100 cm^2
Beta-gamma	5,000 dpm/100 cm^2	15,000 dpm/100cm^2	1,000 dpm/100 cm^2

1 Where surface contamination by both alpha and beta-gamma emitting nuclides exists, the limits established for alpha and beta-gamma emitting nuclides should apply independently.

2 As used in this table, dpm (disintegrations per minute) means the rate of emission by radioactive material as determined by correcting the counts per minute observed by an appropriate detector for background, efficiency, and geometric factors associated with the instrumentation.

3 Measurements of average contamination level should not be averaged over more than one square meter. For objects of less surface area, the average should be derived for each object.

4 The maximum contamination level applies to an area of not more than 100 cm^2.

5 The amount of removable radioactive material per 100 cm^2 of surface area should be determined by wiping that area with dry filter or soft absorbent paper, applying moderate pressure, and assessing the amount of radioactive material on the wipe with an appropriate instrument of known efficiency. When removable contamination on objects of surface area A

(where A is less than 100 sq. cm) is determined, the entire surface should be wiped and the contamination level multiplied by 100/A to convert to a "per 100 sq. cm" basis.

6 The average and maximum radiation levels associated with surface contamination resulting from beta-gamma emitters should not exceed 0.2 mrad/hr (2µGy/hr) at 1 cm and 1.0 mR/hr (10 µGy/hr) at 1 cm, respectively, measured through not more than 7 milligrams per square centimeter of total absorber.

F. A site will be considered acceptable for license termination under restricted conditions if:

1. The licensee can demonstrate that further reductions in residual radioactivity necessary to comply with the provisions of subsection (E) would result in net public or environmental harm or were not being made because the residual levels associated with restricted conditions are ALARA.
2. The licensee has made provisions for legally enforceable institutional controls that provide reasonable assurance that the TEDE from residual radioactivity distinguishable from background to the average member of the critical group will not exceed 0.15 mSv (15 mRem) per year.
3. The licensee has provided sufficient financial assurance to enable an independent third party, including a governmental custodian of a site, to assume and carry out responsibilities for any necessary control and maintenance of the site. Acceptable financial mechanisms are listed in R12-1-323(C).
4. The licensee has submitted a decommissioning plan or License Termination Plan (LTP) to the Agency indicating the licensee's intent to decommission in accordance with R12-1-323, and specifying that the licensee intends to decommission by restricting use of the site. The licensee shall document in the LTP or decommissioning plan how the advice of individuals and institutions in the community who may be affected by the decommissioning has been sought and, as appropriate, following analysis of the advice.
   a. Licensees proposing to decommission by restricting use of the site shall seek advice from the affected parties regarding the following matters concerning the proposed decommissioning:
      i. Whether the provisions for the institutional controls proposed by the licensee will provide reasonable assurance that the TEDE from residual radioactivity is distinguishable from background to the average member of the critical group will not exceed 0.15 mSv (15 mRem) TEDE per year; will be enforceable; and will not impose undue burdens on the local community or other affected parties.
      ii. Whether the licensee has provided sufficient financial assurance to enable an independent third party, including governmental custodian of a site, to assume and carry out responsibilities for any necessary control and maintenance of the site;
   b. In seeking advice on the issues identified in subsection (F)(4)(a) the licensee shall provide for:
      i. Participation by representatives of a broad cross section of the community interests who may be affected by the decommissioning;
      ii. An opportunity for a comprehensive, collective discussion on the issues by the participants represented; and
      iii. A publicly available summary of the results of all such discussions, including a description of the individual viewpoints of the participants on the issues and the extent of agreement and disagreement among the participants on the issues, and
5. Residual radioactivity at the site has been reduced so that if the institutional controls were no longer in effect, there is reasonable assurance that the TEDE from residual radioactivity is distinguishable from background to the average member of the critical group is ALARA and would not exceed 1mSv (100 mRem) per year, or 5 mSv (500 mRem) per year provided the licensee:
   a. Demonstrates that further reductions in residual radioactivity necessary to comply with the first value are not technically achievable, would be prohibitively expensive, or would result in net public or environmental harm;
   b. Makes provisions for durable institutional controls;
   c. Provides sufficient financial assurance to enable a responsible government entity or independent third party, including a government custodian of a site no less frequently than every 5 years to assure that the institutional controls remain in place as necessary to meet the criteria of subsection (F)(2) and to assume and carry out responsibilities for any necessary control and maintenance of those controls. Acceptable financial assurance mechanisms are those in R12-1-323.

G. The Agency may terminate a license using alternate criteria greater than the dose criteria specified in subsections (D) through (F), if the licensee:

1. Provides assurance that public health and safety would continue to be protected, and that it is unlikely that the dose from all man-made sources combined, other than medical, would be more than the 1 mSv (100 mRem) per year, by submitting an analysis of possible sources of exposure;
2. Has employed to the extent practical, restrictions onsite use according to subsection (F) in minimizing exposures at the site; and
3. Reduces doses to ALARA levels;
4. Has submitted a decommissioning plan or License Termination Plan (LTP) to the Agency indicating the licensee's intent to decommission in accordance with R12-1-323, and specifying that the licensee proposes to decommission by alternative criteria. The licensee shall document in the decommissioning plan or LTP how the advice of individuals

and institutions in the community who may be affected by the decommissioning has been sought and addressed, as appropriate, following analysis of that advice. In seeking the advice the licensee shall provide for:

a. Participation by representatives of a broad cross section of the community interests who may be affected by the decommissioning;
b. An opportunity for a comprehensive, collective discussion on the issues by the participants represented; and
c. A publicly available summary of the results of all such discussions, including a description of the individual viewpoints of the participants on the issues and the extent of agreement and disagreement among the participants on the issues.

5. The use of alternate criteria to terminate a license requires the approval of the Agency after consideration by the Agency staff's recommendations that will address any comments provided by the Environmental Protection Agency (EPA) and any public comments submitted according to subsection (H).

H. Upon the receipt of a decommissioning plan or a LTP from a licensee, or a proposal by the licensee for the release of a site according to subsections (F) and (G), or whenever the Agency deems the notice to be in the public interest, the Agency shall:

1. Notify and solicit comments from:
   a. Local governments in the vicinity of the site that could be affected by the decommissioning; and
   b. The EPA for cases where the licensee proposes to release a site according to subsection (G).
2. Publish a notice in the Arizona Administrative Register and in a forum such as a local newspaper, that is readily accessible to individuals in the vicinity of the site and solicit comments from affected parties.

I. Applicants for licenses, other than renewals, after the effective date of this rule, shall describe in the application how facility design and procedures for operation will minimize, to the extent practicable, contamination of the facility, and the environment, facilitate eventual decommissioning, and minimize, to the extent practicable, the generation of radioactive waste.

ARTICLE 4. STANDARDS FOR PROTECTION AGAINST IONIZING RADIATION

R12-1-403. Definitions

"Air-purifying respirator" means a respirator with an air-purifying filter, cartridge, or canister that removes specific air contaminants by passing ambient air through the air-purifying element.

"ALI" No change

"Assigned protection factor (APF)" means the expected workplace level of respirator protection that would be provided by a properly functioning respirator or a class of respirators to properly fitted and trained users. Operationally, the inhaled concentration can be estimated by dividing the ambient airborne concentration by the APF.

"Atmosphere-supplying respirator" means a respirator that supplies the respirator user with breathing air from a source independent of the ambient atmosphere, and includes supplied-air respirators (SARs) and self-contained breathing apparatus (SCBA) units.

"Class" No change

"Critical group" means the group of individuals reasonably expected to receive the greatest exposure to residual radioactivity for any applicable set of circumstances.

"DAC" No change

"DAC-hour" No change

"Declared pregnant woman" No change

"Demand respirator" means an atmosphere-supplying respirator that admits breathing air to the face piece only when a negative pressure is created inside the face piece by inhalation.

"Deterministic effect" [see "nonstochastic effect"] No change

"Disposable respirator" means a respirator for which maintenance is not intended and that is designed to be discarded after excessive breathing resistance, sorbet exhaustion, physical damage, or end-of-service-life renders it unsuitable for use. Examples of this type of respirator are a disposable half-mask respirator or a disposable escape-only self-contained breathing apparatus (SCBA).

"Dosimetry processor" No change

"Filtering face piece (dust mask)" means a negative pressure particulate respirator with a filter as an integral part of the face piece or with the entire face piece composed of the filtering medium, not equipped with elastomeric sealing surfaces and adjustable straps.

"Fit factor" means a quantitative estimate of the fit of a particular respirator to a specific individual, and typically estimates the ratio of the concentration of a substance in ambient air to its concentration inside the respirator when worn.

"Fit test" means the use of protocol to qualitatively or quantitatively evaluate the fit of a respirator on an individual.

"Helmet" means a rigid respiratory inlet covering that also provides head protection against impact and penetration.

"Hood means" a respiratory inlet covering that completely covers the head neck and may also cover portions of the shoulders and torso.

"Inhalation class" [see "Class"] No change

"Loose-fitting face piece" means a respiratory inlet covering that is designed to form a partial seal with the face.

"Lung class" [see "Class"] No change

"Negative pressure respirator (tight fitting)" means a respirator in which the air pressure inside the face piece is negative during inhalation with respect to the ambient air pressure outside the respirator.

"Nonstochastic effect" No change

"Planned special exposure" No change

"Positive pressure respirator" means a respirator in which the pressure inside the respiratory inlet covering exceeds the ambient air pressure outside the respirator.

"Powered air-purifying respirator (PAPR)" means an air-purifying respirator that uses a blower to force the ambient air through air-purifying elements to the inlet covering.

"Pressure demand respirator" means a positive pressure atmosphere-supplying respirator that admits breathing air to the face piece when the positive pressure is reduced inside the face piece by inhalation.

"Probabilistic effect" [see "Stochastic effect"] No change

"Reference Man" No change

"Respiratory protective equipment" No change

"Qualitative fit test (QLFT)" means a pass/fail fit test to assess the adequacy of respirator fit that relies on the individual's response to the test agent.

"Quantitative fit test (QNFT)" means an assessment of the adequacy of respirator fit by numerically measuring the amount of leakage into the respirator.

"Sanitary sewerage" No change

"Self-contained breathing apparatus (SCBA)" means an atmosphere-supplying respirator for which the breathing air source is designed to be carried by the user.

"Stochastic effect" No change

"Supplied-air respirator (SAR) or airline respirator" means an atmosphere-supplying respirator for which the source of breathing air is not designed to be carried by the user

"Tight-fitting face piece" means a respiratory inlet covering that forms a complete seal with the face.

"User seal check (fit check)" means an action conducted by the respirator user to determine if the respirator is properly seated to the face. Examples include negative check, positive check, irritant smoke check, or isoamyl acetate check.

"Very high radiation area" No change

"Weighting factor" No change

R12-1-423. Use of Process or Other Engineering Controls

~~The licensee shall use process or other engineering controls, such as containment or ventilation, to control the concentrations of radioactive material in air, as may be required to meet the requirements of R12-1-407.~~

The licensee shall use, to the extent practical, process or other engineering controls, such as containment, decontamination, or ventilation, to control the concentration of radioactive material in air.

R12-1-425. Use of Individual Respiratory Protection Equipment

A. No change

1. No change
2. No change
3. No change
   a. No change
   b. No change
   c. No change
   d. No change
   e. ~~Determination by a physician prior to initial fitting of respirators, and at least every 12 months thereafter, that the individual user is physically able to use the respiratory protection equipment.~~ Determination by a physician that the individual user is medically fit to use respiratory protection equipment before:
      i. The initial fitting of a face sealing respirator;
      ii. Before the first field use of non-face sealing respirator, and

iii. Either every 12 months thereafter, or periodically at a frequency determined by a physician.

4. No change
   a. No change
   b. No change
   c. No change
5. No change
6. No change

B. No change
1. No change
2. No change
   a. No change
   b. No change

C. No change

D. A licensee shall apply to the Agency for authorization to use assigned protection factors in excess of those specified in Appendix A. To apply for authorization the licensee shall:
1. Describe the situation for which a need exists for the higher protection factors; and
2. Demonstrate that the respiratory protection equipment provides these higher protection factors under the proposed conditions of use.

~~**D.**~~**E.** Reports. The licensee shall notify the Agency in writing at least 30 days before the date that respiratory protection equipment is first used pursuant to either R12-1-425(A) or (B).

R12-1-434. General Requirements for Waste Disposal

A. No change
1. No change
2. By decay in storage, according to subsection (C);
3. No change
4. No change

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

C. A licensee is authorized to hold radioactive waste with a physical half-life of less than 120 days for decay-in-storage before disposal in ordinary trash provided:
1. The radioactive waste is held for decay a minimum of 10 half-lives;
2. The radioactive waste is surveyed with a survey meter, appropriate for the type of radiation being detected, to determine that its emitted radiation level cannot be distinguished from the background radiation; and
3. All radiation warning labels are removed or obliterated.

Appendix A. Assigned Protection Factors for Respirators~~1~~

~~Tested & Certified Equipment~~ ~~Description2~~	~~Modes3~~	~~Protection Factors4~~ ~~Particulates only~~	~~Particulates gases, & vapors5~~	~~National Institute for Occupational Safety and Health/Mine Safety and Health Administration tests for permissibility~~
~~I. AIR-PURIFYING RESPIRATORS6~~				
~~Facepiece, half-mask7~~	~~NP~~	~~10~~		~~30 CFR 11, Subpart K.~~
~~Facepiece, full~~	~~NP~~	~~50~~		
~~Facepiece, half-mask full or hood~~	~~PP~~	~~1,000~~		
~~II. ATMOSPHERE-SUPPLYING RESPIRATORS~~				
~~1. Air-line respirator~~				
~~Facepiece, half-mask~~	~~CF~~	~~1,000~~		
~~Facepiece, half-mask~~	~~D~~	~~5~~		
~~Facepiece, full~~	~~CF~~	~~2,000~~		
~~Facepiece, full~~	~~D~~	~~5~~		~~30 CFR 11, Subpart J.~~
~~Facepiece, full~~	~~PD~~	~~2,000~~		
~~Hood~~	~~CF~~	~~8~~		
~~Suit~~	~~CF~~	~~9~~	~~10~~	
~~2. Self-contained breathing apparatus (SCBA)~~				
~~Facepiece, full~~	~~D~~	~~50~~		
~~Facepiece, full~~	~~PD~~	~~10,00011~~		~~30 CFR 11, Subpart H.~~
~~Facepiece, full~~	~~RD~~	~~50~~		
~~Facepiece, full~~	~~RP~~	~~5,00012~~		
~~III. COMBINATION RESPIRATORS~~				
~~Any combination of air-purifying and atmosphere-supplying respirators~~	~~Protection factor for type and mode of operation as listed above~~			~~30 CFR 11, Sec. 11.63(b).~~

~~FOOTNOTES TO APPENDIX A~~

~~1. For use in the selection of respiratory protective equipment to be used only where the contaminants have been identified and the concentrations, or possible concentrations, are known.~~

~~2. Only for shaven faces and where nothing interferes with the seal of tight-fitting facepieces against the skin. Hoods and suits are excepted.~~

~~3. The mode symbols are defined as follows:~~

~~CF = continuous flow~~
~~D = demand~~
~~NP = negative pressure, that is, negative phase during inhalation~~
~~PD = pressure demand, that is, always positive pressure~~
~~PP = positive pressure~~
~~RD = demand, recirculating or closed circuit~~
~~RP = pressure demand, recirculating or closed circuit~~

~~4.~~

~~a. The protection factor is a measure of the degree of protection afforded by a respirator, defined as the ratio of the concentration of airborne radioactive material outside the respiratory protective equipment to that inside the equipment, usually inside the facepiece, under conditions of use. It is applied to the ambient airborne concentration to estimate the concentrations inhaled by the wearer according to the following formula:~~

~~Concentration inhaled = Ambient airborne concentration Protection factor~~

~~b. The protection factors apply:~~

~~(i) Only for individuals trained in using respirators and wearing properly fitted respirators that are used and maintained under supervision in a well-planned respiratory protective program.~~

~~(ii) For air-purifying respirators only when high-efficiency particulate filters, above 99.97% removal efficiency by thermally generated 0.3 µm dioctyl phthalate (DOP) test or equivalent, are used in atmospheres not deficient in oxygen and not containing radioactive gas or vapor respiratory hazards.~~

~~(iii) No adjustment is to be made for the use of sorbents against radioactive material in the form of gases or vapors.~~

~~(iv) For atmosphere-supplying respirators only when supplied with adequate respirable air. Respirable air shall be provided of the quality and quantity required in accordance with the National Institute for Occupational Safety and Health and the Mine Safety and Health Administration certification described in 30 CFR 11. Oxygen and air shall not be used in the same apparatus.~~

~~5. Excluding radioactive contaminants that present an absorption or submersion hazard. For tritium oxide, approximately one-third of the intake occurs by absorption through the skin so that an overall protection factor of less than 2 is appropriate when atmosphere-~~

~~supplying respirators are used to protect against tritium oxide. If the protection factor for respiratory protective equipment is 5, the effective protection factor for tritium is about 1.4; with protection factors of 10, the effective factor for tritium oxide is about 1.7; and with protection factors of 100 or more, the effective factor for tritium oxide is about 1.9. Air-purifying respirators are not suitable for protection against tritium oxide. See also footnote 9 concerning supplied-air suits.~~

~~6. Canisters and cartridges shall not be used beyond service-life limitations.~~

~~7. Under-chin type only. This type of respirator is not satisfactory for use where it might be possible, such as, if an accident or emergency were to occur, for the ambient airborne concentrations to reach instantaneous values greater than 10 times the pertinent values in Table I, Column 3 of Appendix B of Article 4. This type of respirator is not suitable for protection against plutonium or other high-toxicity materials. The mask is to be tested for fit prior to use, each time it is donned.~~

~~8.~~

~~a. Equipment shall be operated in a manner that ensures that proper air flow rates are maintained. A protection factor of no more than 1,000 may be utilized for tested and certified supplied air hoods when a minimum air flow of 6 cubic feet per minute (0.17 m3 / min) is maintained and calibrated air line pressure gauges or flow-measuring devices are used. A protection factor of up to 2,000 may be used for tested and certified hoods only when the air flow is maintained at the manufacturer's recommended maximum rate for the equipment; this rate is greater than 6 cubic feet per minute (0.17 m3 /min) and calibrated air line pressure gauges or flow-measuring devices are used.~~

~~b. The design of the supplied-air hood or helmet, with a minimum flow of 6 cubic feet per minute (0.17 m3 /min) of air, may determine its overall efficiency and the protection it provides. For example, some hoods aspirate contaminated air into the breathing zone when the wearer works with hands over head. This aspiration may be overcome if a short cape-like extension to the hood is worn under a coat or overalls. Other limitations specified by the approval agency shall be considered before using a hood in certain types of atmospheres. See footnote 9.~~

~~9. Appropriate protection factors shall be determined, taking into account the design of the suit and its permeability to the contaminant under conditions of use. There shall be a standby rescue person equipped with a respirator or other apparatus appropriate for the potential hazards and communications equipment whenever supplied-air suits are used.~~

~~10. No approval schedules are currently available for this equipment. Equipment is to be evaluated by testing or on the basis of reliable test information.~~

~~11. This type of respirator may provide greater protection and be used as an emergency device in unknown concentrations for protection against inhalation hazards. External radiation hazards and other limitations to permitted exposure, such as skin absorption, shall be taken into account in such circumstances.~~

~~12. Quantitative fit testing shall be performed on each individual, and no more than 0.02% leakage is allowed with this type of apparatus. Perceptible outward leakage of gas from this or any positive pressure, self-contained breathing apparatus is unacceptable because service life will be reduced substantially. Special training in the use of this type of apparatus shall be provided to the wearer.~~

~~Note 1: Protection factors for respirators approved by the U.S. Bureau of Mines and the National Institute for Occupational Safety and Health, according to applicable approvals for respirators for type and mode of use to protect against airborne radionuclides, may be used to the extent that they do not exceed the protection factors listed in this table. The protection factors listed in this table may not be appropriate to circumstances where chemical or other respiratory hazards exist in addition to radioactive hazards. The selection and use of respirators for such circumstances should take into account applicable approvals of the U.S. Bureau of Mines and the National Institute for Occupational Safety and Health.~~

~~Note 2: Radioactive contaminants, for which the concentration values in Table I, Column 3 of Appendix B of Article 4 are based on internal dose due to inhalation, may present external exposure hazards at higher concentrations. Under these circumstances, limitations on occupancy may have to be governed by external dose limits.~~

	Operating mode	Assigned Protection Factors
I. Air Purifying Respirators [Particulate[b] only][c]:		
Filtering face piece disposable [d]	Negative	(d)
Face piece, half [e]	Negative Pressure	10
Face piece, full	Negative Pressure	100
Face piece, half	Powered air-purifying respirators	50
Face piece, full	Powered air-purifying respirators	1000
Helmet/hood	Powered air-purifying respirators	1000
Face piece, loose-fitting	Powered air-purifying respirators	25
II. Atmosphere supplying respirators [particulate, gases and vapors[f]]:		
1. Air-line respirator:		

Face piece, half	Demand	10
Face piece, half	Continuous Flow	50
Face piece, half	Pressure Demand	50
Face piece, full	Demand	100
Face piece, full	Continuous Flow	1000
Face piece, full	Pressure Demand	1000
Helmet/hood	Continuous Flow	1000
Face piece, loose-fitting	Continuous Flow	25
Suit	Continuous Flow	~~(g)~~
2. Self-contained breathing Apparatus (SCBA):		
Face piece, full	Demand	[h]100
Face piece, full	Pressure demand	[i]10,000
Face piece, full	Demand, Recirculating	[h]100
Face piece, full	Positive Pressure Recirculation	[i]10,000
III. Combination Respirators:		
Any combination of air-purifying and atmosphere-supplying respirators	Assigned protection factor for type and mode of operation as listed above	

[a] These assigned protection factors apply only in a respiratory protection program that meets the requirements of this Article. They are applicable only to airborne radiological hazards and may not be appropriate to circumstances when chemical or other respiratory hazards exist instead of, or in addition to, radioactive hazards. Selection and use of respirators for these circumstances must also comply with Department of Labor regulations.
Radioactive contaminants for which the concentration values in Table 1, Column 3 of Appendix B are based on internal dose due to inhalation may, in addition, present external exposure hazards at higher concentrations. Under these circumstances, limitations on occupancy may have to be governed by external dose limits.

[b] Air purifying respirators with APF<100 must be equipped with particulate filters that are at least 95 percent efficient. Air purifying respirators with APF=100 must be equipped with particulate filters that are at least 99 percent efficient. Air purifying respirators with APF>100 must be equipped with particulate filters that are at least 99.97 percent efficient.

[c] The licensee may apply to the Commission for the use of an APF greater than 1 for sorbent cartridges as protection against airborne radioactive gases and vapors, similar to radioiodine.

[d] Licensees may permit individuals to use this type of respirator who have not been medically screened or fit tested on the device provided that no credit be taken for their use in estimation intake or dose. It is also recognized that it is difficult to perform an effective positive or negative pressure pre-use user seal check on this type of device. All other respiratory protection program requirements listed in 10 CFR 20.1703, June 2000 Edition, published June 1, 2000, by reference and available for review at the Agency and Secretary of State, apply. This incorporation by reference contains no future editions or amendments. An assigned protection factor has not been assigned for these devices. However, an APF equal to 10 may be used if the licensee can demonstrate a fit factor of at least 100 by use of a validated or evaluated, qualitative or quantitative fit test.

[e] Under-chin type only. No distinction is made in this appendix between elastomeric half-masks with replaceable cartridges and those designed with the filter medium as an integral part of the face piece (disposable or reusable disposable). Both types are acceptable so long as the seal area of the latter contains some substantial type of seal-enhancing material such as rubber of plastic, the two or more suspension straps are adjustable, the filter medium is at least 95 percent efficient and all other requirements of this Article are met.

[f] The assigned protection factors for gases and vapors are not applicable to radioactive contaminants that present an absorption or submersion hazard. For tritium oxide vapor, approximately one-third of the intake occurs by absorption through the skin so that an overall protection factor of 3 is appropriate when atmosphere-supplying respirators are used to protect against tritium oxide. Exposure to radioactive noble gases is not considered a significant respiratory hazard and protective actions for these contaminants should be based on external (submersion) dose considerations.

[g] No NIOSH approval schedule is currently available for atmosphere supplying suits. This equipment may be used in an acceptable respiratory protection program as long as all the other minimum program requirements, with the exception of fit testing, are met. The minimum program requirements are defined in 10 CFR 20.1703.

[h] The licensee should implement institutional controls to assure that these devices are not used in areas immediately dangerous to life or health (IDLH).

[i] This type of respirator may be used as an emergency device in unknown concentrations for protection against inhalation hazards. External radiation hazards and other limitations to permitted exposure such as skin absorption shall be taken into account in these circumstances. This device may not be used by any individual who experiences perceptible outward leakage of breathing gas while wearing the device.

ARTICLE 5. RADIOGRAPHIC OPERATIONS

R12-1-501. ~~Limits on Levels of Radiation for Radiographic Exposure Devices and Storage Containers~~ Definitions

~~A.~~ ~~A licensee shall ensure that a radiographic exposure devices with less than 10 centimeters (4 inches) of space from the sealed source storage position to any exterior surface of the device have no radiation level in excess of 500 microsievert (50 millirem) per hour at 15 centimeters (6 inches) from any exterior surface of the device.~~

~~B.~~ ~~A licensee shall ensure that radiographic exposure devices with 10 centimeters (4 inches) of space or more from the sealed source storage position to any exterior surface of the device, and all storage containers for sealed sources or for radiographic exposure devices, have no radiation level in excess of 2 millisievert (200 millirem) per hour at any exterior surface, and 100 microsievert (10 millirem) per hour at 1 meter (40 inches) from any exterior surface. The radiation levels specified are with the sealed source in the shielded position.~~

"Access panel" means any panel which is designed to be removed or opened for the maintenance or service purposes, requires tools to open, and permits access to the interior of the cabinet x-ray unit.

"Annual refresher safety training" means a review conducted or provided by the licensee for its employees on radiation safety aspects of industrial radiography. The review may include, as appropriate, the results of internal inspections, new procedures or equipment, new or revised state rules, accidents or errors that have observed, and should also provide opportunities for employees to ask safety questions.

"Aperture" means any opening in the outside surface of the cabinet x-ray unit, other than a port, which remains open during generation of x-radiation.

"Associated equipment" means equipment that is used in conjunction with a radiographic exposure device to make radiographic exposures that drives, guides, or comes in contact with the source.

"Certifying entity" means an independent certifying organization meeting the requirements in Appendix A.

"Collimator" means a radiation shield that is placed on the end of the guide tube or directly onto a radiographic exposure device to restrict the size of the radiation beam when the sealed source is cranked into position to make a radiographic exposure.

"Control (drive) cable" means the cable that is connected to the source assembly and used to drive the source to and from the exposure location.

"Control (drive) mechanism" means a device that enables the source assembly to be moved to and from the exposure device.

"Control tube" means a protective sheath for guiding the control cable. The control tube connects the control drive mechanism to the radiographic exposure device.

"Door" means any barrier which is designed to be movable or opened for routine operation purposes, does not generally require tools to open, and permits access to the interior of the cabinet x-ray unit.

"Exposure head" means a device that locates the gamma radiography sealed source in the selected working position.

"Ground fault" means an accidental electrical grounding of an electrical conductor.

"Guide tube (projection sheath)" means a flexible or rigid tube for guiding the source assembly and the attached control cable from the exposure device to the exposure head. The guide tube may also include the connections necessary for attachment to the exposure device and the exposure head.

"Hands-on experience" means experience in all of those areas considered to be directly involved in the radiography process.

"Independent certifying organization" means an independent organization that meets all of the criteria of Appendix A.

"Port" means any opening in the outside surface of the cabinet x-ray unit which is designed to remain open, during generation of x-rays, for the purpose of conveying material to be irradiated into and out of the cabinet, or for partial insertion for irradiation of an object whose dimensions do not permit complete insertion into the cabinet x-ray unit.

"Practical examination" means a demonstration through practical application of the safety rules and the principles in industrial radiography including use of all appropriate equipment and procedures.

"Radiographic operations" means all activities associated with the presence of radioactive sources in a radiographic exposure device during use of the device or transport (except when being transported by a common or contract carrier), to include surveys to confirm the adequacy of boundaries, setting up equipment, and any activity inside restricted area boundaries.

"Source assembly" means an assembly that consists of the sealed source and connector that attaches the source to the control cable. The source assembly may also include a stop ball used to secure the source in the shielded position.

R12-1-502. ~~Radiographic Equipment Standards and Equipment Failure Notification~~ Performance Requirements for Industrial Radiography Equipment

~~A.~~ ~~Each registrant shall ensure that each x-ray machine has a lock designed to prevent unauthorized use or accidental production of radiation and shall be kept locked at all times except when under the direct surveillance of a radiographer or radiographer's assistant.~~

~~B.~~ ~~Exposure devices shall:~~

1. ~~Have a lock or outer locked container designed to prevent unauthorized or accidental removal of the sealed source from the shielded position; and~~
2. ~~Be kept locked when not under the direct surveillance of a radiographer or radiographer's assistant unless alternate safety measures approved by the RSO are followed.~~

~~C.~~ ~~Source storage containers and source changers shall:~~

1. ~~Have a lock or outer locked container designed to prevent unauthorized or accidental removal of the sealed source from its shielded position; and~~
2. ~~Be kept locked if they contain sealed sources, unless they are under the direct surveillance of a radiographer or a radiographer's assistant.~~

~~D.~~ ~~Equipment used in industrial radiographic operations shall meet the following minimum criteria:~~

1. ~~Each radiographic exposure device, sealed source, and all associated equipment shall meet the requirements specified in American National Standards Publication N43.9-1991 (previously N432-1980) "Radiological Safety for the Design and Construction of Apparatus for Gamma Radiography," 1991 Edition, published October 24, 1991, by the American National Standards Institute, by reference and on file with the Agency and the Office of Secretary of State. This incorporation by reference contains no future editions or amendments. The material may be purchased from the American National Standards Institute, Inc., 1430 Broadway, New York, New York, 10018.~~
2. ~~In addition to the requirements specified in subsection (C)(1) the following requirements apply to radiographic exposure devices and associated equipment.~~
   a. ~~The licensee shall have available for review documented proof that each device and associated equipment meets the requirements of R12-1-502(D)(1);~~
   b. ~~Each radiographic exposure device has attached to it, a durable, legible, clearly visible label bearing the following:~~
      i. ~~Chemical symbol and mass number of the radionuclide in the device;~~
      ii. ~~Activity and the date on which this activity was last measured;~~
      iii. ~~Model number and serial number of the sealed source;~~
      iv. ~~Manufacturer of the sealed source; and~~
      v. ~~Licensee's name, address, and telephone number.~~
   c. ~~Radiographic exposure devices intended for use as Type B transport containers shall meet the applicable requirements of 10 CFR 71.51, 2000 Edition, published January 1, 2000, by the Office of the Federal Register National Archives and Records Ad ministration, by reference and on file with the Agency and the Office of Secretary of State. This incorporation by reference contains no future editions or amendments.~~
   d. ~~Modification of radiographic exposure devices and associated equipment is prohibited unless the design of any replacement component, including source holder, source assembly, controls or guide tubes would not compromise the design safety features of the system.~~
3. ~~In addition to the requirements specified in subsections (C)(1) and (2), the following requirements apply to radiographic exposure devices and associated equipment that allow the source to be moved out of the device for routine radiographic operations.~~
   a. ~~The coupling between the source assembly and the control cable shall be designed in such a manner that the source assembly will not become disconnected if positioned outside the guide tube. The coupling shall be constructed so that it cannot be unintentionally disconnected under normal and reasonably foreseeable abnormal conditions.~~
   b. ~~The device shall automatically secure the source assembly when it is retrieved back into the fully shielded position within the device. This securing system shall only be released by means of a deliberate operation on the exposure device.~~

~~c. The outlet fittings, lock box, and drive cable fittings on each radiographic exposure device shall be equipped with safety plugs or covers which shall be installed during storage and transportation to protect the source assembly from water, mud, sand, or other foreign matter.~~

~~d. Each sealed source or source assembly shall have attached to it or engraved in it, a durable, legible, visible label with the words: "DANGER - RADIOACTIVE". The label shall not interfere with the safe operation of the exposure device or associated equipment.~~

~~e. The guide tube shall have passed the crushing tests for the control tube as specified in ANSI N43.9-1991 and a kinking resistance test that closely approximates the kinking forces likely to be encountered during use.~~

~~f. Guide tubes shall be used when moving the source out of the device.~~

~~g. An exposure head or similar device designed to prevent the source assembly from passing out the end of the guide tube shall be attached to the outermost end of the guide tube during radiographic operations.~~

~~h. The guide tube exposure head connection shall be able to withstand the tensile test for control units specified in ANSI N43.9-1991.~~

~~i. Source changers shall provide a system of assuring that the source will not be accidentally withdrawn from the changer when connecting or disconnecting the drive cable to or from a source assembly.~~

~~j. All newly manufactured radiographic exposure devices and associated equipment acquired by licensees after January 10, 1992, shall comply with the requirements of this Section.~~

~~k. All radiographic exposure devices and associated equipment in use after January 10, 1996, shall comply with the requirements of this Section.~~

~~**D.** In addition to the notification requirements in Article 4, each licensee or registrant shall submit a written report within 30 days to the Agency whenever 1 or more of the following equipment failure events occurs:~~

~~1. A source assembly cannot be returned to the fully-shielded position and properly secured;~~

~~2. A source assembly is unintentionally disconnected from the drive cable;~~

~~3. Any component critical to safe operation of the radiographic exposure device fails to properly perform its intended function;~~

~~4. An indicator on a radiation-producing machine fails to show that radiation is being produced, an exposure switch fails to terminate production of radiation when turned to the off position, or a safety interlock fails to terminate X-ray production; or~~

~~5. Personnel overexposure submitted under R12-1-444, involving failure of safety components of radiography exposure devices, source storage containers, or source changers.~~

~~**E.** Each report required in subsection (D) shall contain the following information:~~

~~1. A description of the equipment problem;~~

~~2. Cause of each incident, if known;~~

~~3. Manufacturer and model number of equipment involved in the incident;~~

~~4. Location, time, and date of the incident:~~

~~5. Actions taken to regain normal operations;~~

~~6. Corrective actions taken or planned to prevent recurrence; and~~

~~7. Names of personnel involved in the incident.~~

Equipment used in industrial radiographic operations shall meet the following minimum criteria:

1. Each radiographic exposure device, source assembly or sealed source, and all associated equipment shall meet the requirements specified in American National Standards Institute, N432-1980 Radiological Safety for the Design and instruction of Apparatus for Gamma Radiography 1980 Edition, published as NBS Handbook 136, issued January 1981 by the American National Standards Institute, by reference and on file with the Agency and the Office of Secretary of State. This incorporation by reference contains no future editions or amendments. This publication may be purchased from the American National Standards Institute, Inc., 1430 Broadway, New York, New York 10018 Telephone (212) 642-4900; or
2. Engineering analysis may be submitted by an applicant or licensee to demonstrate the applicability of previously performed testing on similar individual radiography equipment components. Upon review, the Agency may find this an acceptable alternative to actual testing of the component pursuant to the above referenced standard.
3. In addition to the requirements specified in subsection (A) the following requirements apply to radiographic exposure devices, source changers, source assemblies and sealed sources:
   a. The licensee shall ensure that each radiographic exposure device has attached to it a durable, legible, and clearly visible label bearing:
      i. The chemical symbol and mass number of the radionuclide in the device;
      ii. The activity and the date on which this activity was last measured;
      iii. The model (or product code) and serial number of the sealed source;
      iv. The manufacturer's identity of the sealed source; and
      v. The licensee's name, address, and telephone number.
   b. Radiographic exposure devices intended for use as Type B transport containers shall meet the applicable requirements of 10 CFR part 71, 2000 Edition, published January 1, 2000, by the Office of the Federal Register National

Archives and Records Administration, by reference and on file with the Agency and the Office of Secretary of State. This incorporation by reference contains no future editions or amendments.

c. Modification of radiographic exposure devices, source changers, and source assemblies and associated equipment is prohibited, unless the design of any replacement component, including source holder, source assembly, controls, or guide tubes would not compromise the design safety features of the system.

4. In addition to the requirements specified in subsections (A) and (B), the following requirements apply to radiographic exposure devices, source assemblies, and associated equipment that allow the source to be moved out of the device for radiographic operations or to source changers.
   a. The coupling between the source assembly and the control cable shall be designed in such a manner that the source assembly will not become disconnected if cranked outside the guide tube. The coupling shall be constructed in such a manner that an unintentional disconnect will occur under normal and reasonably foreseeable abnormal conditions.
   b. The device shall automatically secure the source assembly when it is cranked back into the fully shielded position within the device. This securing system may only be released by means of a deliberate operation on the exposure device.
   c. The outlet fittings, lock box, and drive cable fittings on each radiographic exposure device shall be equipped with safety plugs or covers which shall be installed during storage and transportation to protect the source assembly form water, mud, sand, or other foreign matter.
   d. Each sealed source or source assembly shall have attached to it or engraved on it, a durable, legible, visible label with the words: "DANGER-- RADIOACTIVE". The label may not interfere with the safe operation of the exposure device or associated equipment.
   e. The guide tube shall be able to withstand a crushing test that closely approximates the crushing forces that are likely to be encountered during use, and be able to withstand a kinking resistance test that closely approximates the kinking forces that are likely to be encountered during use.
   f. Guide tubes shall be used when moving the source out of the device.
   g. An exposure head or similar device designed to prevent the source assembly form passing out of the end of the guide tube shall be attached to the outermost end of the guide tube during industrial radiography operations.
   h. The guide tube exposure head connection shall be able to withstand the tensile test for control units specified in ANSI N432-1980.
   i. Source changers shall provide a system for ensuring that the source will not be accidentally withdrawn from the changer when connecting or disconnecting the drive cable to or from a source assembly.
5. All radiographic exposure devices and associated equipment in use after January 10, 1996, shall comply with the requirements of this Section.
6. Notwithstanding subsection (A) equipment used in industrial radiographic operations need not comply with Sec. 8.92(c)) of the Endurance Test in American National Standards Institute N432-1980, if the prototype equipment has been tested using a torque value representative of the torque that an individual using the radiography equipment can realistically exert on the lever or crankshaft of the drive mechanism.
7. Each registrant shall ensure that each x-ray machine has a lock designed to prevent unauthorized use or accidental production of radiation and shall be kept locked at all times except when under the direct surveillance of a radiographer or radiographer's assistant.

R12-1-514. ~~Repealed~~ Limits on External Radiation Levels from Storage Containers and Source Changers

The maximum rate limits for storage containers and source changers are 2 millisieverts (200 mRem/hr) at any exterior surface and 0.1 millisieverts (10 mRem/hr) at 1 meter from any exterior surface with the sealed source in the shielded position.

R12-1-521. Radiographer and Radiographer's Assistant Qualifications, Radiographer Certification, and Audits

A. No change
1. No change
   a. No change
      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. No change
   c. No change
      i. No change
      ii. No change

iii. No change
iv. No change
d. No change
e. No change
f. No change
2. No change
3. No change
4. No change

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

C. ~~A licensee or registrant shall not permit an individual to act as an industrial radiographer until the individual is certified by passing the certification examination provided by the Conference of Radiation Control Program Directors (CRCPD), or any other radiographer certification examination the Agency deems equivalent. The licensee or registrant shall provide the Agency with proof of a candidate's passing score on the certification examination when requesting to have the candidate added to a license as an authorized user, and maintained at the job site where a radiographer is performing field radiography. An uncertified individual may act as a radiographer until October 1, 2001. After October 1, 2001, an individual is no longer authorized to use radioactive material unless the individual is certified under this subsection.~~
A licensee or registrant shall not permit an individual to act as an industrial radiographer until the individual is certified through a radiographer certification program by a certifying entity meeting the criteria specified in Appendix A of this Article.
1. The licensee or registrant shall provide the Agency with proof of an individuals's certification when requesting to have the individual added to a license or registration as a certified radiographer.
2. The proof of certification shall be maintained at the job site where a radiographer is performing field radiography.

D. No change

E. No change
1. No change
2. No change
3. No change

F. The following rules apply to certified radiographers working in Arizona:
1. The certification shall have occurred within the last five years.
2. An uncertified radiographer may only work as a radiography assistant until certified.
3. A radiographer may recertify by:
   a. Taking an approved radiography certification examination in accordance with subsection (C); or
   b. Demonstrating in writing that the radiographer has been active in the practice of industrial radiography and has participated in continuing education during the previous five-year period.
   c. If a radiographer cannot demonstrate in writing an active participation in the field of industrial radiography meeting the requirement in subsection (F)(3)(b), the individual shall retake the certification examination required in subsection (F)(3)(a).
4. Proof of certification shall be in the form of a card issued by the certifying entity and shall contain:
   a. A picture of the certified radiographer;
   b. A certification number;
   c. Expiration date; and
   d. Radiographer's signature.

R12-1-533. Radiation Surveys and Survey Records

A. No change

B. No change

C. A radiographer or radiographer's assistant shall conduct a radiation survey of a radiographic exposure device with a calibrated radiation survey instrument any time the source is exchanged and whenever a radiographic exposure device is placed in a storage area to ensure that the sealed source is in its shielded position. ~~to determine the exposure levels from a sealed source that has been returned to its shielded position and the radiographic exposure device is placed in a storage area~~. The entire circumference of the radiographic exposure device shall be surveyed.

D. No change

R12-1-535. ~~Reserved~~ Notifications

A. In addition to the reporting requirements specified in Article 4 each licensee shall provide a written report to the Agency of the occurrence of any of the following incidents involving radiography equipment:
1. Unintentional disconnection of the source assembly from the control cable;
2. Inability to retract the source assembly to the fully shielded position and secure it in this position; or

3. Failure of any component (critical to safe operation of the device) to properly perform its intended function;

B. A licensee shall include the following information in each report submitted under this Section and in each report of over-exposure submitted under Article 4, which involves the failure of safety components of radiography equipment:
1. A description of the equipment problem;
2. Cause of the incident, if known;
3. Name of manufacturer and model number of the equipment involved in the incident;
4. Place, date, and time of the incident;
5. Actions taken to establish normal operations;
6. Corrective actions taken or planned to prevent reoccurrence; and
7. Qualifications of personnel involved in the incident.

C. Any licensee conducting radiographic operations or storing radioactive material at any location not listed on the license for a period in excess of 180 days in a calender year, shall notify the Agency of such activities prior to exceeding the 180 days.

R12-1-541. Enclosed Radiography Using X-ray Machines

A. No change
1. No change
2. No change

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

C. No change
1. No change
2. No change
3. No change
4 No change
5. No change
6. No change
7. No change
8. No change
9. No change
10. No change
11. No change
12. No change

D. An enclosed radiography machine shall be electrified in such a manner that a ground fault does not result in the generation of x-radiation.

R12-1-542. ~~Repealed~~ Baggage Inspection Systems

A. X-ray systems designed for the inspection of carry-on baggage at airlines, railroads, and bus terminals, and at similar facilities, shall provide a means to ensure operator presence at the control area in a position which permits surveillance of the ports and doors during generation of x-radiation.

B. During an exposure or preset succession of exposures of 1/2 second or greater duration, the system shall have a means enabling the operator to terminate the exposure or preset succession of exposures at any time.

C. During an exposure or preset succession of exposures of less than 1/2 second duration, the system shall have a means which allows the operator to complete of the exposure in progress, but shall enable the operator to prevent additional exposures.

D. Baggage inspection systems shall be operated according to the manufacturer's instructions.

E. The safety systems associated with a baggage inspection system shall not be defeated except for maintenance purposes.

F. In addition to the requirements in this rule registrants using a baggage inspection system shall meet the requirements in R12-1-541(A), (B) and (D).

Appendix A. ~~Repealed~~ Certification Program Requirements

I. Administration

All certification programs must:

1. Require applicants for certification to (a) receive training in the topics set forth in R12-1-521(A) or equivalent Agreement State regulations, and (b) satisfactorily complete a written examination covering these topics;
2. Require applicants for certification to provide documentation that demonstrates that the applicant has:
   a. Received training in the topics set forth in R12-1-521(A) or equivalent Agreement State regulations;
   b. Satisfactorily completed a minimum period of on-the-job training; and

c. Has received verification by an Agreement State or a NRC licensee that the applicant has demonstrated the capability of independently working as a radiographer;

3. Include procedures to ensure that all examination questions are protected from disclosure;
4. Include procedures for denying an application revoking, suspending, and reinstating a certificate;
5. Provide a certification period of not less than 3 years and not more than 5 years;
6. Include procedures for renewing certifications and, if the procedures allow renewals without examination, require evidence of recent full-time employment and annual refresher training.
7. Provide a timely response to inquiries, by telephone or letter, from members of the public, about an individual's certification status.

II. Written Examinations

All examination shall be:

1. Designed to test an individual's knowledge and understanding of the topics listed in R12-1-521(A) or equivalent Agreement State requirements;
2. Written in multiple-choice format;
3. Have test items drawn from a question bank containing psychometrically valid questions based on the material in R12-1-521(A).

ARTICLE 7. USE OF RADIONUCLIDES IN THE HEALING ARTS

R12-1-703. License for Medical Use of Radioactive Material

A. No change
1. No change
2. No change
3. No change
4. No change

B. No change
1. No change
   a. No change
   b. No change
   ~~c. The applicant has access to a medical institution with adequate facilities to hospitalize and monitor the applicant's radioactive patients whenever it is advisable; and~~
   ~~d.~~c. The applicant has substantial experience in the handling and administration of radionuclides, and where applicable, the clinical management of radioactive patients.
2. No change
   a. No change
      i. No change
      ii. No change
      iii. No change
      iv. No change
   b. No change
   c. No change

C. No change
1. No change
   a. No change
   b. No change
   c. No change
   d. No change
   e. No change
2. No change
   a. For Groups I, II, IV and V, a licensee or registrant shall not receive, possess, or use radioactive material as a radiopharmaceutical unless manufactured in the form to be administered to the patient, labeled, packaged, and distributed according to a specific license issued by the Agency under R12-1-311(J), a specific license issued by the U.S. Nuclear Regulatory Commission under 10 CFR 32.72, 2000 ~~1998~~ Edition, published January 1, 2000 ~~1998~~, by reference and on file with the Agency and the Office of Secretary of State (this incorporation by reference contains no future editions or amendments), or a specific license issued by an Agreement State or a Licensing State under equivalent rules.
   b. No change
      i. No change
      ii. No change
   c. No change
      i. No change

ii No change
iii. No change
d. No change
3. No change
4. No change

D. No change

R12-1-704. Supervision

A. No change
B. No change
C. No change
D. No change
E. A nuclear pharmacy shall dispense radiopharmaceuticals only to a physician listed as an authorized user on a valid radioactive material license issued by the Agency, an Agreement State, or the NRC.

R12-1-707. Quality Management Program

Each licensee, using radioactive material or the radiation from radioactive material for therapeutic purposes, shall establish and maintain a written quality management program so that radioactive material or radiation from it will be administered in accordance with a written directive from ~~as directed by~~ an authorized user listed on a valid radioactive material license. The quality management program shall include written policies and procedures to meet the specific patient safety objectives established by the Radiation Safety Committee or Radiation Safety Officer for licensees not required to have a Radiation Safety Committee.

R12-1-714. Brachytherapy

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

B. No change
C. Radiation surveys.
1. A physician on a radioactive material license, ~~or qualified designee~~ qualified expert or person approved by the licensee's radiation safety officer shall measure the maximum radiation level at a distance of 1 meter (40 in.) from the patient in whom brachytherapy sources have been inserted, using a calibrated survey instrument. This radiation level shall be entered on the patient's chart and other signs posted as required in subsection (D).
2. A physician on a radioactive material license, ~~or qualified designee~~ qualified expert or person approved by the licensee's radiation safety officer shall measure and record the radiation level in the patient's room and the surrounding area. The licensee shall maintain the record for Agency inspection.
3. No change

D. All physics procedures performed in preparation for application of radiation to a patient for therapy purposes shall be performed by a qualified expert meeting the training qualifications in R12-1-716(G).

~~**D.**~~**E.** No change
1. No change
2. A physician on a radioactive material license, ~~or qualified designee~~ qualified expert or person approved by the licensee's radiation safety officer shall include the following information in the patient's records when the patient is undergoing brachytherapy:
   a. No change
   b. No change
   c. The radiation symbol; and
   d. The precautionary instructions necessary to assure that the exposure of individuals does not exceed that permitted in ~~R12-1-408~~ Article 4.

R12-1-717. High Dose Rate Remote After-loading Brachytherapy Devices

A. No change
B. No change
C. No change
1. No change
2. No change

D. ~~The licensee shall test the electrical interlocks on the entrance door to the treatment room for proper operation at least once a month. Records of test results shall be maintained for 3 years for inspection by the Agency.~~

The licensee shall test the following for proper operation once each month:
1. The electrical interlock on the entrance door to the treatment room, and
2. The radiation source locking system.
3. Records of test results shall be maintained for 3 years for inspection by the Agency.

E. ~~In the event of malfunction of the door interlock, the licensee shall lock the after-loading irradiation device in the "off" position and not use the after-loading, except as may be necessary to repair or replace the interlock system, until the interlock system is shown to be functioning properly.~~
In the event of malfunction of a door interlock or source locking system in subsection (D), the licensee shall secure from use the after-loading irradiation device and not use the after-loading, except as may be necessary to repair or replace the interlock system, until the interlock system is shown to be functioning properly.

F. No change
1. No change
   a. No change
   b. No change
      i. No change
      ii. No change
      iii. No change
2. No change

G. No change
1. No change
2. No change

H. No change

I. All physics procedures performed in preparation for application of radiation to a patient for therapy purposes shall be performed by a qualified expert meeting the training qualifications in R12-1-716(G).

R12-1-718. Gamma Stereotactic Radiosurgery

A. No change
B. No change
C. No change
D. No change
1. No change
2. No change
3. No change
4. No change
5.
   a. No change
   b. No change
   c. No change

E. No change
F. No change
G. No change
1. No change
   a. No change
   b. No change
2. No change
   a. No change
   b. No change
   c. No change

H. No change

I. All physics procedures performed in preparation for application of radiation to a patient for therapy purposes shall be performed by a qualified expert meeting the training qualifications in R12-1-716(G).

ARTICLE 11. ~~REPEALED~~ TECHNOLOGICALLY ENHANCED NATURALLY OCCURRING RADIOACTIVE MATERIAL (TENORM)

R12-1-1101. ~~Repealed~~ Definitions

As used in this Section, the following definitions apply:

"Product" means something produced, made, manufactured, refined, or benefited.

"Reasonably maximally exposed individual" means a representative of a population who is exposed to TENORM at the maximum TENORM concentration measured in environmental media found at a site along with reasonably maximum case exposure assumptions. The exposure is determined by using maximum values for one or more of the most sensitive

parameters affecting exposure, based on cautious but reasonable assumptions, while leaving the others at their mean value.

"Technologically Enhanced Naturally Occurring Radioactive Material (TENORM)" means naturally occurring radionuclides whose concentrations are increased by or as a result of past or present human practices. TENORM does not include background radiation or the natural radioactivity of rocks or soils. TENORM does not include uranium or thorium in "source material" as defined in Article 1.

"Transfer" means, for purposes of this Article, the physical relocation of NORM containing materials not directly associated with commercial distribution within a business's operation. This term does not include a change in legal title to NORM containing materials that does not involve physical movement of those materials.

R12-1-1103. ~~Repealed~~ Exemptions

A. Each person who receives, owns, possesses, uses, processes, transfers, distributes, or disposes of TENORM is exempt from the requirements in this Article with respect to any combination of radon-226 and radon-228 if the materials contain, or are contaminated at, concentrations less than [185 becquerel per kilogram (5 pCi/gm)] excluding natural background. This does not apply to consumer or retail products which are regulated under A.A.C. R12-1-1109.

B. Each person who receives a product or material containing TENORM distributed in accordance with a specific license issued by the Agency, or to an equivalent license issued by another Licensing State, are exempt from these rules with regard to those products or materials.

C. The distribution, including custom blending, possession, and use of fertilizers containing TENORM, is exempt from the requirements of this Article.

R12-1-1104. ~~Repealed~~ Standards for Radiation Protection

A. Each person subject to a specific license under this Article shall comply with radiation protection standards set out in Article 4 of these rules.

B. Doses from indoor radon and its progeny shall not be included in TEDE calculations.

R12-1-1105. Release for Unrestricted Use

A. Each person subject to a specific license under this Article shall:

1. Not transfer or release for unrestricted use facilities or equipment contaminated with TENORM in excess of levels in Table 1 of Article 3 of this Article.
2. Not transfer land for unrestricted use where the concentration of radon-226 and radon-228 in soil averaged over any 100 square meters exceeds the background level by more than 185 Becquerel per kilogram (5 pCi/gm), averaged over any 15 cm layer of soil below the surface, unless compliance with A.A.C. R12-1-1104 (A) can be demonstrated.

B. Using purposeful dilution to render TENORM waste exempt shall not be used unless authorized by the Agency.

R12-1-1106. Reserved

R12-1-1107. Disposal and Transfer of Waste for Disposal

A. Each person subject to a license under this Article shall manage and dispose of wastes containing TENORM:

1. By transfer of the wastes for disposal to a facility licensed under requirements for uranium or thorium byproduct materials in either 40 CFR 192, 2001 Edition, published July 1, 2001, by reference and on file with the Agency and the Office of Secretary of State, or 10 CFR 40, 2001 Edition, published January 1, 2000, by reference and on file with the Agency and the Office of Secretary of State; these references contain no future editions or amendments)
2. By transfer of the wastes for disposal to a disposal facility licensed by the US Nuclear Regulatory Commission, an agreement state, or a Licensing State; or
3. In accordance with alternate methods authorized by the Agency upon application or upon the Agency's initiative, consistent with A.A.C. R12-1-1104 and where applicable the Clean Water Act, Safe Drinking Water Act and other requirements of the US Environmental Protection Agency for hazardous waste disposal.

B. Equipment, to be disposed of and contaminated with TENORM in excess of levels specified in Table 1 of Article 3 shall be disposed of:

1. So as to prevent any reintroduction into commerce or unrestricted use; and
2. Within disposal areas specifically designed to meet the criteria of this Section.

C. Transfers of waste containing TENORM for disposal shall be made only to a person specifically authorized by the Nuclear Regulatory Commission, an Agreement State or a licensing state, to receive such waste.

D. Records of disposal, including manifests, shall be maintained according to the requirements contained in Article 4 of these rules.

R12-1-1108. Specific Licenses

A specific license is required to:

1. Manufacture and distribute material or products containing TENORM unless exempted by A.A.C. R12-1-1105, or licensed under Article 3 of these rules;

2. Decontaminate equipment or land not otherwise exempted under A.A.C. R12-1-1103 or facilities contaminated with TENORM in excess of the levels in A.A.C. R12-1-1105, as applicable. For this subsection the term "decontaminate" shall not include maintenance, which may result in removal of contamination; or
3. Receive TENORM from other persons for disposal.

R12-1-1109. Issuance of Specific Licenses

A. A license application will be approved if the Agency determines that the applicant has met the general licensing requirements in A.A.C. R12-1-309 and adequately address the following items in the application:
1. Procedures and equipment for monitoring and protecting workers;
2. An evaluation of the radiation levels and concentrations of contamination expected during normal operations;
3. Operating and emergency procedures, including procedures for waste reduction and quality assurance of items released for unrestricted use; and
4. A method for managing the radioactive material removed from contaminated equipment and facilities.

B. An application for a specific license to decontaminate equipment, land, or facilities contaminated with TENORM in excess of the levels in A.A.C. R12-1-1103(A) or Table 1 of Article 3 of this Article, as applicable, and to dispose of the resulting waste, will be approved if:
1. The applicant satisfies the general requirements specified in subsection (A); and
2. The applicant has adequately addressed the following items in the application:
   a. Procedures and equipment for monitoring and protection of workers;
   b. An evaluation of the radiation levels and concentrations of contamination expected during normal operations;
   c. Operating and emergency procedures, including procedures for waste reduction and quality assurance of items released for unrestricted use; and
   d. Method of disposing of the TENORM removed from contaminated equipment, facilities, or land.

C. An application for a specific license to transfer materials or manufacture or distribute products containing TENORM to persons exempted from these rules according to A.A.C. R12-1-1103(B), will be approved if:
1. The applicant satisfies the general requirements specified in subsection (A);
2. The TENORM is not contained in any food, beverage, cosmetic, drug, or other commodity designed for ingestion or inhalation by, or application to, a human being; and
3. The applicant submits sufficient information relating to the design, manufacture, prototype testing, quality control procedures, labeling or marking, and conditions of handling, storage, use, and disposal of the TENORM material or product to demonstrate that the material or product will meet the safety criteria set forth in A.A.C. R12-1-1111. The information shall include:
   a. A description of the material or product and its intended use or uses;
   b. The type, quantity, and concentration of TENORM in each material or product;
   c. The chemical and physical form of the TENORM in the material or product, and changes in chemical and physical form that may occur during the useful life of the material or product;
   d. An analysis of the solubility in water and body fluids of the TENORM in the material or products;
   e. The details of manufacture and design of the material or product relating to containment and shielding of the TENORM and other safety features under normal and severe conditions of handling, storage, use, reuse, and disposal of the material or product;
   f. The degree of access of human beings to the material or product during normal handling, use, and disposal;
   g. The total quantity of TENORM expected to be distributed annually in the material or product;
   h. The expected useful life of the material or product;
   i. The proposed method of labeling or marking each unit of the material or product with identification of the manufacturer or initial transferor of the product and the radionuclides and quantity of TENORM in the material or product;
   j. The procedures for prototype testing of the material or product to demonstrate the effectiveness of the containment, shielding, and other safety features under both normal and severe conditions of handling, storage, use, reuse, and disposal;
   k. The results of the prototype testing of the material or product, including any change in the form of the TENORM contained in it, the extent to which the TENORM may be released to the environment, any change in radiation levels, and any other changes in safety features;
   l. The estimated external radiation doses and dose commitments relevant to the safety criteria in A.A.C. R12-1-1111 and the basis for such estimates;
   m A determination that the probabilities with respect to doses referred to in A.A.C. R12-1-1111 meet the safety criteria;
   n. The quality control procedures to be followed in the production of production lots of the material or product, and the quality control standards the material or product will be required to meet; and
   o. Any additional information, including experimental studies and tests, required by the Agency to facilitate a determination of the radiation safety of the material or product.

R12-1-1110. Reserved

R12-1-1111. Safety Criteria for Products

An applicant for a license under A.A.C. R12-1-1109(C) shall demonstrate that the product is designed and will be manufactured so that:

1. In normal use and disposal for a single exempt item, and in normal handling and storage of the quantities of exempt items likely to accumulate in one location during marketing, distribution, installation, and servicing of the product, it is unlikely that the TEDE in any 1 year, to a suitable sample of the group of individuals expected to be mostly highly exposed to radiation or radioactive material from the product will exceed the doses in Column I of Appendix A.
2. In use and disposal of a single exempt item and in handling and storage of the quantities of exempt items likely to accumulate in one location during marketing, distribution, installation, and servicing of the product, the probability is low (not more than one such failure per year for each 10,000 exempt units distributed) that the containment, shielding, or other safety features of the product would fail under such circumstances that a person would receive an external radiation dose or dose commitment in excess of the dose to the appropriate organ as specified in Column II of the table in Appendix A, and the probability is negligible (not more than one such failure per year for each one million exempt units distributed) that a person would receive an external radiation dose or dose commitment in excess of the dose to the appropriate organ as specified in Column III of the table in Appendix A.
3. It is unlikely that there will be a significant reduction in the effectiveness of the containment, shielding, or other safety features of the product from wear and abuse which is likely to occur during normal handling and use of the product during its useful life.

R12-1-1112. Conditions of Use Under a Specific Licenses

A. General Terms and Conditions:

1. A license issued or granted under this Article and the right to possess or utilize TENORM granted by a license issued under this Article shall not be transferred, assigned, or in any manner disposed of, either voluntarily or involuntarily, directly or indirectly, through transfer of control of any license to any person unless approved by the Agency and the Agency has given its consent in writing.
2. Each person licensed under A.A.C. R12-1-1109 shall confine use and possession of the TENORM licensed to the locations and purposes authorized in the license.

B. A licensee shall:

1. Carry out adequate control procedures in the manufacture of the product to assure that each production lot meets the quality control standards approved by the Agency;
2. Label or mark each unit so that the manufacturer, processor, procedure, or initial transferor of the material or product and the TENORM in the product can be identified; and
3. Maintain records, identifying by name and address, each person to whom TENORM is transferred for use under A.A.C. R12-1-1103(B). Or the equivalent regulations of another Licensing State, and stating the kinds, quantities, and uses of TENORM transferred. An annual summary report stating the total quantity of each radionuclide transferred under the specific license shall be provided to the Agency. Each report shall cover the year ending December 31, and shall be filed within 90 days thereafter. The report shall indicate the fact that no transfers of TENORM have been made under A.A.C. R12-1-1109(C) during any reporting period.

Appendix A. Table of Organ Doses

Part of Body	**Column I Dose***	**Column II** Dose**	**Column III* Dose**
Whole body; head and trunk;	0.05 mSv	1 mSv	150 mSv
Active blood-forming organs; gonads; or lens of eye	(0.005 rem)	(0.1 rem)	(15 rem)
Hands and forearms; feet and ankles; localized areas of skin	0.75 mSv	75 mSv	2000mSv
Averaged over areas no larger than 1 square centimeter	(0.075 rem)	(7.5 rem)	(200 rem)
Other organs	0.15mSv (0.015rem)	15mSv (1.5rem)	500mSv (50rem)

*Dose limit is the dose above background from the product.
**500mRem is allowed under special conditions in A.A.C. R12-1-416.

ARTICLE 13. LICENSE AND REGISTRATION FEES

R12-1-1302. License and Registration Categories

A. No change
1. No change
2. No change
3. No change
4. No change

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

C. No change
1. No change
2. No change
3. No change
4. No change
5. No change
6. No change
7. No change
8. No change
9. No change
10. No change
11. No change
12. No change
13. No change
14. A self-shielded irradiator license is a specific category C license authorizing the use radioisotopes in the form of sealed sources for irradiation of materials in a shielding device from which the sources are not removed during irradiation. The Agency may combine a self-shielded irradiator license with any broad ~~industrial broad~~ license.
15. No change
16. No change
17. No change

D. No change
1. No change
   a. No change
   b. No change
2. No change
3. No change
4. No change
5. No change
6. No change
7. No change
8. No change
9. No change
10. No change
11. No change
12. No change
13. No change
14. No change
15. No change
16. No change
17. No change
18. No change
19. No change
20. A TENORM license is one which authorizes the possession and use of naturally occurring radioactive material in excess of the limits specified in 12 A.A.C. 1 Article 11 that has been concentrated either as a secondary occurrence to activities conducted for reasons other than concentrating the material or concentrated in the manufacturing of a prod-

uct. The product may contain the naturally occurring radioactive material as an integral part, as a nonessential contaminate of the product, or a byproduct of the manufacturing process.

E. Category E registrations ~~and licenses~~ are those that register the possession of x-ray machine(s) ~~equipment or license the use of nonionizing radiation producing equipment~~ under 12 A.A.C. 1, Article 2 ~~or 14~~. The Agency shall not combine Category E registrations ~~or licenses~~ with any other registration ~~or license~~.

1. No change
2. No change
3. No change
4. No change
5. No change
6. A radiation machine, "other," is one authorizing possession of, or a usage of an ionizing radiation machine not included in any other category specified in subsection (E) of this Section.

~~6. A tanning facility license is one authorizing the commercial operation of any number of tanning booths, beds, cabinets, or other enclosures in a single establishment.~~
~~7. A class A laser facility license is one which authorizes the operation of 1 to 10 laser systems subject to R12-1-1433.~~
~~8. A class B laser facility license is one which authorizes the possession of 11 to 49 laser systems subject to R12-1-1433.~~
~~9. A class C laser facility license is one which authorizes operation of 50 or more laser systems subject to R12-1-1433.~~
~~10. A laser light show license is one authorizing the operation of a laser system subject to R12-1-1440.~~
~~11. A medical laser facility license is one which authorizes the operation of one or more laser systems subject to R12-1-1439.~~
~~12. A medical radiofrequency device facility license is one authorizing the possession of one or more radiofrequency diathermy units.~~
~~13. A medical imaging facility license is one authorizing operation of a nuclear magnetic resonance imaging system utilizing radiofrequency and magnetic fields.~~
~~14. A class A industrial radiofrequency device facility license is one authorizing 1 to 5 radiofrequency heat sealers or industrial microwave ovens.~~
~~15. A class B industrial radiofrequency device facility license is one authorizing 6 to 20 radiofrequency heat sealers or industrial microwave ovens.~~
~~16. A class C industrial radiofrequency device facility license is one authorizing more than 20 radiofrequency heat sealers or industrial microwave ovens.~~
~~17. A radiation machine, "other," is one authorizing possession of or a usage of a radiation machine not included in any other category specified in subsection (E) of this Section.~~

F. Category F registrations are those that register nonionizing radiation producing sources regulated under 12 A.A.C. 1, Article 14. The Agency shall not combine a Category F registrations with any other registration or license.

1. A tanning registration is one authorizing the commercial operation of any number of tanning booths, beds, cabinets, or other enclosures in a single establishment.
2. A Class A laser registration is one which authorizes the operation of 1 to 10 laser devices subject to R12-1-1433.
3. A Class B laser registration is one which authorizes the possession of 11 to 49 laser devices subject to R12-1-1433.
4. A Class C laser registration is one which authorizes operation of 50 or more laser devices subject to R12-1-1433.
5. A laser light show registration is one authorizing the operation of a laser device subject to R12-1-1440.
6. A medical laser registration is one which authorizes the operation of one or more laser devices subject to R12-1-1439.
7. A Class II surgical device registration is one authorizing the operation of one or more Class II surgical devices subject to R12-1-1417.
8. A medical radiofrequency device registration is one authorizing the possession of one or more radiofrequency diathermy devices.
9. A class A industrial radiofrequency device registration is one authorizing 1 to 5 radiofrequency heat sealers or industrial microwave ovens.
10. A class B industrial radiofrequency device registration is one authorizing 6 to 20 radiofrequency heat sealers or industrial microwave ovens.
11. A class C industrial radiofrequency device registration is one authorizing more than 20 radiofrequency heat sealers or industrial microwave ovens.
12. An "other" nonionizing radiation device or device registration is one authorizing possession or use of a nonionizing radiation device or device not included in any other category specified in subsection (F) of this Section.

R12-1-1306. Table of Fees

A. The application and annual fee for each category type are as shown in Table 13-1.

Table 13-1

Category	Type	Annual fee
A1.	Broad academic class A	$2,600
A2.	Broad academic class B	$1,500
A3.	Broad academic class C	$1,200
A4.	Limited academic	$600
B1.	Broad medical	$1,650
B2.	Medical materials class A	$1,400
B3.	Medical materials class B	$1,000
B4.	Medical materials class C	$500
B5.	Medical teletherapy	$1,650
B6.	General medical	$75
C1.	Broad industrial class A	$2,200
C2.	Broad industrial class B	$1,600
C3.	Broad industrial class C	$1,250
C4.	Limited industrial	$500
C5.	Portable gauge	$500
C6.	Fixed gauge class A	$800
C7.	Fixed gauge class B	$500
C8.	Leak detector	$500
C9.	Gas chromatograph	$300
C10.	General industrial	No Fee
C11.	Industrial radiography class A	$1,650
C12.	Industrial radiography class B	$1,500
C13.	Open field irradiator	Full Cost
C14.	Self-shielded irradiator	$600
C15.	Well logging	$1,750
C16.	Research and Development	$750
C17.	Laboratory	$600
D1.	Distribution	$2,150
D2.	Nuclear pharmacy	$2,150
D3.	Nuclear laundry	$2,250
D4.	Depleted uranium	$100
D5.	General depleted uranium	$75
D6.	Veterinary medicine	$500
D7.	General veterinary medicine	$75
D8.	Health Physics class A	$600
D9.	Health physics class B	$450
D10.	Secondary uranium recovery	$4,000
D11.	Low-level radioactive waste disposal site	(3)
D12.	Waste processor class A	$2,250
D13.	Waste processor class B	$500
D14.	Additional storage and use site ~~facility~~	(1)
D15.	Possession only	(2)
D16.	Reciprocal	(3)
D17.	Radioactive waste transfer-for-disposal	(3)
D18.	Unclassified	Full Cost
D19.	~~Norm~~ NORM commercial disposal site	$200,000
D20.	TENORM	$500
E1.	X-ray machine Class A (per tube)	$64
E2.	X-ray machine class B (per tube)	$44
E3.	X-ray machine class C (per tube)	$36
E4.	Industrial radiation machine (per device)	$36
E5.	Major accelerator facility	Full Cost

E6.	Other ionizing radiation machine	Full Cost
~~E6.~~F1.	~~Tanning facility (per device)~~ Per tanning device	$24
~~E7.~~F2.	Class A (1 to 10 laser devices) ~~laser facility~~	$150
~~E8.~~F3.	Class B (11 to 49 laser devices) ~~laser facility~~	$350
~~E9.~~F4.	Class C (50 or more laser devices) ~~laser facility~~	$600
~~E10.~~F5.	Laser light show/laser demonstration	$350
~~E11.~~F6.	~~Medical laser facility (per laser system)~~ Per medical laser device	$40
F7.	Per Class II surgical device	$50
~~E12.~~F8.	~~Medical RF device facility (per unit)~~ Per medical RF device	$40
~~E13.~~	~~Medical imaging facility (per unit)~~	~~$50~~
~~E14.~~F9.	Class A (1 to 5 radiofrequency devices) ~~industrial radiofrequency facility~~	$60
~~E15.~~F10.	Class B (6 to 20 radiofrequency devices) ~~industrial radiofrequency facility~~	$180
~~E16.~~F11.	Class C (more than 20 radiofrequency devices) ~~industrial radiofrequency facility~~	$300
~~E17.~~F12.	Other nonionizing device or device ~~radiation machine~~	Full Cost

Notes: (1) An additional 20% of the annual base fee shall be added to the annual ~~20% of the~~ base fee for each additional site, not to exceed an additional 100% ~~additional~~ for all sites.

(2) The fee shall be 50% of the annual base fee for the category under which the radioactive material will be stored. ~~50% of the annual fee for the license type required for full use of the stored radioactive materials.~~

(3) See R12-1-1307.

B. No change
1. No change
   a. No change
   b. No change
   c. No change
2. No change
3. No change

C. The fee for taking the radiography certification examination, required in R12-1-521(C), shall be collected and forwarded to the certifying entity providing the certification examination. The fee collected shall be established by the certifying entity.

ARTICLE 15. TRANSPORTATION

R12-1-1501. ~~Reserved~~ Requirement for License

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

R12-1-1504. Intrastate Transportation and Storage of Radioactive Materials

A. ~~A person shall not transport radioactive materials within this state except as provided herein~~ A general license is issued to:
1. Any common or contract carrier not exempt under R12-1-103 to receive, possess, transport, and store radioactive material in the regular course of carriage for others or to store radioactive material incident to the transport activities, provided the transportation or storage is in accordance with applicable requirements, appropriate for the mode of transport of the U.S. Department of Transportation, 49 CFR 171 through 180, 2001 Edition, published October 1, 2001, incorporated by reference and on file with the Agency and the Office of Secretary of State. This incorporation by reference contains no future editions or amendments. ~~general license is hereby issued subject to R12-1-1504(B), (C), (D) and R12-1-1505 to any licensee to transport and store radioactive material incidental to transportation, provided the transportation is incidental to, and is made to further the licensee's operations.~~
2. ~~A general license is issued by this rule to any common or contract carrier not exempt pursuant to R12-1-103.~~
2. Any private carrier or licensee who transports and stores radioactive material, provided the transportation and storage are in accordance with the applicable requirements, appropriate to the mode of transport, of the U.S. Department of Transportation, 49 CFR 171 through 180, 2001 Edition, published October 1, 2001, incorporated by reference and on file with the Agency and the Office of Secretary of State. This incorporation by reference contains no future editions

or amendments.

~~**B.** When transporting or storing radioactive materials, a person shall comply with the regulations of the U.S. Department of Transportation, 49 CFR 171 through 189, 1995 Edition, published October 1, 1995, by reference and on file with the Agency and the Office of Secretary of State, to the extent This incorporation by reference contains no future editions or amendments.~~

B. Any notification of incidents required under federal regulations in subsection (A) shall also be filed with, or made to, the Agency.

~~**C.** Any notification of incidents required by those regulations shall in addition be filed with, or made to, the Agency.~~

~~**D.**~~**C.** A person who transports or stores ~~Persons who transport and store~~ radioactive material according ~~pursuant~~ to the general license in this Section ~~are~~ is exempt from the requirements of Article 4 and Article 10 of this Chapter to the extent these requirements apply to transportation of radioactive material ~~with respect to such transport and storage~~.

R12-1-1505. Storing of Radioactive Material in Transport

A. A person shall not store, for any period in excess of 72 hours, any package containing radioactive material bearing a Department of Transportation Yellow II or Yellow III label, unless the radioactive material is stored in an area other than, and not adjacent to, any food storage area or area that is normally occupied by an individual.

B. A package containing radioactive material shall not be stored ~~person shall not store radioactive material~~ with other hazardous materials, except as authorized by U.S. Department of Transportation regulations in 49 CFR 177.848, 2000 ~~1995~~ Edition, published October 1, 2000 ~~1995~~, by reference and on file with the Agency and the Office of the Secretary of State, containing no future editions or amendments; and

C. Whenever a package containing radioactive material is stored in excess of 48 hours, the storage area shall be conspicuously posted according ~~pursuant~~ to the requirements of Article 4.

D. No change

1. No change
   a. No change
   b. No change
   c. No change
   d. No change
   e. No change
   f. No change
   g. No change
   h. No change
2. If the radioactive material will be, or has been in storage for longer than 90 days, the carrier shall notify the Agency in writing and include the information required in subsection (B)(1) ~~above~~.
3. No change

R12-1-1506. Preparation of Radioactive Material for Transport

A licensee shall not deliver any package containing radioactive material to a carrier for transport or transport radioactive material, unless the licensee has:

1. Complied with the applicable packaging, monitoring, manifesting, marking, and labeling requirements, appropriate to the mode of transport, of the U.S. Department of Transportation, 49 CFR 170 through 189, 2001 ~~1995~~ Edition, published October 1, 2001 ~~1995~~, the U.S. Postal Service Manual (Domestic), Section 124.3, 2001 ~~1995~~ Edition, published January 1, 2001 ~~1995~~, or 39 CFR 111.1, 2001 ~~1995~~ Edition, published January 1, 2001 ~~1995~~, all by reference and on file with the Agency and the Office of Secretary of State. This incorporation contains no future editions or amendments; and
2. No change
3. Prior ~~Assured, prior~~ to the delivery of a package to a carrier for transport, assure that:
   a. The package is properly closed; and
   b. That any special instructions, needed to safely open the package, are ~~sent or~~ made available to the consignee.

R12-1-1507. Packaging Quality Assurance

A. Licensees that transport radioactive material in the course of their business or deliver~~s~~ radioactive material to a carrier for transport in a package for which a license, certificate of compliance or other approval has been issued by the Nuclear Regulatory Commission, or which meets the applicable criteria specified in 10 CFR 71, 2001 ~~1996~~ Edition, published October 1, 2001 ~~1996~~, by reference and on file with the Agency and the Office of Secretary of State, shall have, maintain and execute the quality assurance program specified in 10 CFR 71. This incorporation by reference contains no future editions or amendments

B. ~~Each licensee shall establish, maintain, and execute~~ In addition to the requirements in subsection (A) a quality assurance program ~~to~~ each licensee shall verify by procedures, such as checking or inspection, that deficiencies and defective ~~material/equipment~~ material and equipment relative to the shipment of packages containing radioactive material are promptly identified and corrected.

C. Before the first use of any Type B packaging, each licensee shall obtain approval of its quality assurance program by the Agency.

D. The licensee shall maintain sufficient written records to demonstrate compliance with the quality assurance program. Records of quality assurance pertaining to the use of a Type B package for shipment of radioactive material shall be maintained for three years after the package is used for a shipment.

R12-1-1508. Advance Notification of Transport of Nuclear Waste

A. No change

B. No change

1. No change
2. A description of the nuclear waste contained in the shipment as required by 49 CFR 172.202 and 273.203(d), 2001 ~~1995~~ Edition, published October 1, 2001 ~~1995~~, by reference and on file with the Agency and the Office of Secretary of State. This incorporation by reference contains no future editions or amendments.
3. No change
4. No change
5. No change
6. No change

C. No change

D. No change