NOTICES OF PROPOSED RULEMAKING

This section of the *Arizona Administrative Register* contains Notices of Proposed Rulemakings.

A proposed rulemaking is filed by an agency upon completion and submittal of a Notice of Rulemaking Docket Opening. Often these two documents are filed at the same time and published in the same *Register* issue.

When an agency files a Notice of Proposed Rulemaking under the Administrative Procedure Act (APA), the notice is published in the *Register* within three weeks of filing. See the publication schedule in the back of each issue of the *Register* for more information.

Under the APA, an agency must allow at least 30 days to elapse after the publication of the Notice of Proposed Rulemaking in the *Register* before beginning any proceedings for making, amending, or repealing any rule. (A.R.S. §§ 41-1013 and 41-1022)

The Office of the Secretary of State is the filing office and publisher of these rules. Questions about the interpretation of the proposed rules should be addressed to the agency the promulgated the rules. Refer to item #4 below to contact the person charged with the rulemaking and item #10 for the close of record and information related to public hearings and oral comments.

NOTICE OF PROPOSED RULEMAKING

TITLE 4. PROFESSIONS AND OCCUPATIONS
CHAPTER 1. BOARD OF ACCOUNTANCY

[R16-257]

PREAMBLE

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

R4-1-455.03 — Amend

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

Authorizing statute: A.R.S. § 32-703(B)(7)

Implementing statute: None

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

Notice of Rulemaking Docket Opening: 22 A.A.R. 3588, December 23, 2016 (*in this issue*).

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

Name: Monica L. Petersen, Executive Director

Address: Board of Accountancy
100 N. 15th Ave., Suite 165
Phoenix, AZ 85007

Telephone: (602) 364-0870

Fax: (602) 364-0903

E-mail: mpetersen@azaccountancy.gov

Web site: www.azaccountancy.gov

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 An agency's justification and reason why a rule should be made, amended, repealed, or renumbered, to include an explanation about the rulemaking:

The rule is being amended because it is overbroad and inconsistent with A.R.S. § 32-747.01, and to ensure that the rules reflect the Board's current operational practices, as the Board no longer enforces this rule. The current rule is overbroad and inconsistent with the Board's statutory framework because it requires certified public accountants ("CPAs") who provide any type of public accounting to do so only through a firm registered with the Board, whereas A.R.S. § 32-747.01 only requires those CPAs who perform one specific type of public accounting – attest services – to do so only through a registered firm.

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

Not applicable

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

Not applicable

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

Amending the rule will not have a fiscal impact, as under the Board's long-time statutory and regulatory framework, CPAs who have registered firms as sole proprietors are not required pursuant to A.R.S. § 32-729(4) to pay a firm registration fee. Amending the rule will result in a positive impact to small business. CPAs who are sole proprietors of accounting firms who do not do attest services as defined in A.R.S. § 32-701(3) will no longer be required to register their firms with the Board and will no longer be required to file biennial firm renewal paperwork. They will also no longer be subject to peer review requirements pursuant to R4-1-454. [Operationally, since the Board has already ceased enforcement of the rule pending its amendment and has notified sole proprietors that they may cancel their firm registrations if they do not provide attest services, this positive impact has already commenced.] The Board does not foresee a consumer impact, as amending this rule is unlikely to change the rates CPAs charge for their services. In terms of public protection, the Board will continue to regulate the sole proprietor CPAs through their individual certificates but will lose some regulatory oversight with respect to peer review requirements for non-attest services like compilation services.

9. The agency's contact person who can answer questions about the economic, small business, and consumer impact statement:

Name:	Monica L. Petersen, Executive Director
Address:	Board of Accountancy 100 N. 15th Ave., Suite 165 Phoenix, AZ 85007
Telephone:	(602) 364-0870
Fax:	(602) 364-0903
E-mail:	mpetersen@azaccountancy.gov
Web site:	www.azaccountancy.gov

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

An oral proceeding regarding the proposed rule will be held as follows:

Date:	Monday, January 23, 2017
Time:	9:00 a.m.
Location:	Board of Accountancy 100 N. 15th Ave., Suite 165 Phoenix, AZ 85007

The rulemaking record will close on Monday, January 23, 2017 at 5:00 p.m.

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

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

The rule does not require a permit.

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

There is no federal law regarding CPAs and firm registration.

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

No analysis was submitted.

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

None

13. The full text of the rules follows:

TITLE 4. PROFESSIONS AND OCCUPATIONS

CHAPTER 1. BOARD OF ACCOUNTANCY

ARTICLE 4. REGULATION

Section

R4-1-455.03. Professional Conduct: Other Responsibilities and Practices

ARTICLE 4. REGULATION

R4-1-455.03. Professional Conduct: Other Responsibilities And Practices

A. Discreditable acts: A certified public accountant, public accountant, or firm shall not commit an act that reflects adversely on the certified public accountant's, public accountant's, or firm's fitness to engage in the practice of public accounting, including:
1. Violating a provision of R4-1-455, R4-1-455.01, R4-1-455.02, R4-1-455.03 or R4-1-455.04;
2. Violating a fiduciary duty or trust relationship with respect to any person; or
3. Violating a provision of A.R.S. Title 32, Chapter 6, Article 3, or this Chapter.

B. Advertising practices: A certified public accountant, public accountant, or firm has violated A.R.S. § 32-741(A)(4) and engaged in dishonest or fraudulent conduct in the practice of public accounting in connection with the communication or advertising of public accounting services through any media, if the certified public accountant, public accountant, or firm willfully engages in any of the following:
1. Employs a device, scheme, or artifice to defraud;
2. Makes an untrue statement of material fact or fails to state a material fact necessary to make the statement not misleading;
3. Engages in any advertising that would operate as a fraud or deceit;
4. Violates A.R.S. § 44-1522 and a court finds the violation willful;
5. Engages in fraudulent or misleading practices in the advertising o public accounting services that leads to a conviction pursuant to A.R.S. § 44-1481; or
6. Engages in fraudulent practices in the advertising of public accounting services that leads to a conviction for a violation or any other state or federal law.

C. Solicitation Practices: A certified public accountant, public accountant, or firm has violated A.R.S. § 32-741(A)(4) and engaged in dishonest or fraudulent conduct in the practice of public accounting in connection with the direct or indirect personal solicitation of public accounting services if the certified public accountant, public accountant, or firm willfully engages in any of the following:
1. Violates a provision of R4-1-455.03(B); or
2. Engages in direct or indirect personal solicitation through the use of coercion, duress, undue influence, compulsion, or intimidation practices.

D. Form of practice and name:
~~1. A certified public accountant or public accountant may practice public accounting, whether as an owner or employee, only in a firm as defined in A.R.S. § 32-701(14).~~
~~2.~~ A certified public accountant or public accountant shall not use a professional or firm name or designation that is misleading about the legal form of the firm, or about the persons who are partners, officers, members, managers, or shareholders of the firm, or about any other matter. A firm name or designation shall not include words such as "& Company," "& Associates" or "& Consultants" unless the terms refer to additional full-time CPAs that are not otherwise mentioned in the firm name.

E. Acting through others: A certified public accountant or public accountant shall not knowingly permit others to carry out on behalf of the certified public accountant or public accountant, either with or without compensation, acts which, if carried out by the certified public accountant or public accountant, would violate a provision of R4-1-455, R4-1-455.01, R4-1-455.02, R4-1-455.03 or R4-1-455.04.

F. Communications: When requested, a certified public accountant or public accountant shall respond to communications from the Board within 30 days after the communication is mailed by registered or certified mail.

NOTICE OF PROPOSED RULEMAKING

TITLE 12. NATURAL RESOURCES

CHAPTER 1. RADIATION REGULATORY AGENCY

PREAMBLE

[R16-258]

1. Article, Part, or Section Affected (as applicable)	Rulemaking Action
R12-1-102	Amend
R12-1-201	Amend
R12-1-202	Amend
R12-1-203	Amend
R12-1-204	Amend
R12-1-206	Amend
R12-1-207	Amend
R12-1-208	Amend

R12-1-209	Amend
Appendix A	Amend
R12-1-802	Amend
R12-1-804	Amend
R12-1-805	Amend
R12-1-807	Amend
R12-1-808	Amend
R12-1-809	Amend
R12-1-1102	Amend
R12-1-1104	Amend
R12-1-1106	Amend
R12-1-1108	Amend
R12-1-1110	Amend
R12-1-1112	Amend
R12-1-1116	Amend
R12-1-1118	Amend
R12-1-1120	Amend
R12-1-1122	Repeal
R12-1-1126	Amend
R12-1-1128	Amend
R12-1-1130	Amend
R12-1-1132	Amend
R12-1-1134	Amend
R12-1-1136	Repeal
R12-1-1140	Amend
R12-1-1142	Amend
R12-1-1146	Amend
Appendix A	Amend

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

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

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

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

Notice of Rulemaking Docket Opening: 22 A.A.R. 3591, December 23, 2016 (*in this issue*).

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

Name: Colby A. McCormick
Address: Arizona Radiation Regulatory Agency
4814 S. 40th St.
Phoenix, AZ 85040
Telephone: (602) 826-3229
Fax: (602) 437-0705
E-mail: cmccormick@azrra.gov
Website: arra.az.gov

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

This rulemaking package amends rules to reduce regulatory burden on registrants of x-ray equipment while maintaining a safety oriented compliance program. In addition, it amends rules specific to x-ray devices that included impractical safety requirements that do not apply to these types of units and are more appropriate for radioactive material already addressed in other Articles of this Chapter. It further identifies and amends registrations requirements listed in the rules to more closely match existing Agency forms and processes while modernizing some information-gathering to modernize Agency communications with registrants as well as addresses items present in the most recent Sunset Audit conducted on the Agency related to x-ray registration requirements.

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

None

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

Not applicable

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

Currently, all registrants pay an annual fee which covers the administrative cost and inspection fees for each facility number. No new FTEs were needed for this rulemaking package so additional notice was not sent to the Joint Legislative Budget Committee (JLBC).

9. The agency's contact person who can answer questions about the economic, small business and consumer impact statement:

Name:	Colby A. McCormick
Address:	Arizona Radiation Regulatory Agency 4814 S. 40th St. Phoenix, AZ 85040
Telephone:	(602) 826-3229
Fax:	(602) 437-0705
E-mail:	cmccormick@azrra.gov
Website:	arra.az.gov

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

An oral proceeding at the Agency will be scheduled for 9:00 a.m., January 31, 2017, at 4814 South 40th Street, Phoenix, Arizona. A person may also submit written comments concerning the proposed rules by submitting them no later than 9:00 a.m., to the following person:

Name:	Brian D. Goretzki, Interim Director
Location: Address:	Arizona Radiation Regulatory Agency 4814 S. 40th St. Phoenix, AZ 85040
Telephone:	(602) 255-4840
Fax:	(602) 437-0705

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

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

The Agency believes that it is exempt from A.R.S. §§ 41-1037 due to paragraph (A)(2) as the issuance of an alternative type of permit is authorized under the statutory requirement of A.R.S. §§ 30-672 to protect the public health and safety.

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

The rule amendments are compatible with existing federal regulations and are not more stringent in sections that have a federal equivalent. Currently the regulation of radiation producing equipment is conducted at the state level and federal regulations in Title 21 of the Code of Federal Regulations only govern the manufacture of radiation producing electronic devices with the exception of mammography screening facilities. Facilities that screen for mammography are dually regulated as a Mammography Quality Standards Act and Program (MQSA) facility for federal insurance reimbursement as well as under the rules of the Agency. The federal rules governing MQSA are located in 21 CFR 900.12 and are incorporated in the rules of the Agency.

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

No analysis has been submitted as the regulated community must be in compliance with either federal regulation if accepting Medicare insurance, or able to demonstrate a safety culture for OSHA of which radiation protection programs comprise a portion of.

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

Rule	Incorporated Material
R12-1-102	21 CFR 1040.10
R12-1-206(C)	21 CFR 1020.30(d)

13. The full text of the rules follows:

TITLE 12. NATURAL RESOURCES

CHAPTER 1. RADIATION REGULATORY AGENCY

ARTICLE 1. GENERAL PROVISIONS

Section
R12-1-102. Definitions

ARTICLE 2. REGISTRATION, INSTALLATION, AND SERVICE OF IONIZING RADIATION-PRODUCING MACHINES; AND CERTIFICATION OF MAMMOGRAPHY FACILITIES

Section
R12-1-201. Exemptions
R12-1-202. Application for Registration of Facilities with ~~of~~ Ionizing Radiation Producing Machines
R12-1-203. Application for Registration of Servicing and Installation
R12-1-204. Issuance of Notice of Registration
R12-1-206. Assembly, Installation, Removal from Service, and Transfer
R12-1-207. Reciprocal Recognition of Out-of-state Radiation Machines
R12-1-208. Certification of Mammography Facilities
R12-1-209. Notifications and Registration Amendments
Appendix A. Application Information

ARTICLE 8. RADIATION SAFETY REQUIREMENTS FOR ANALYTICAL X-RAY OPERATIONS

Section
R12-1-802. Definitions
R12-1-804. Open-beam X-ray Systems
R12-1-805. Administrative Responsibilities
R12-1-807. Surveys
R12-1-808. Posting
R12-1-809. Training

ARTICLE 11. INDUSTRIAL USES OF X-RAYS, NOT INCLUDING ANALYTICAL X-RAY SYSTEMS

Section
R12-1-1102. Definitions
R12-1-1104. Registration Requirements
R12-1-1106. Equipment Performance
R12-1-1108. Radiation Survey Instruments
R12-1-1110. Quarterly Inventory
R12-1-1112. Utilization Logs
R12-1-1116. Surveillance
R12-1-1118. Industrial Radiographic Operations
R12-1-1120. Radiation Safety Officer (RSO)
R12-1-1122. ~~Form of Records~~ Repealed
R12-1-1126. Posting
R12-1-1128. Operating and Emergency Procedures
R12-1-1130. Personnel Monitoring
R12-1-1132. Supervision of a Radiographer's Assistant
R12-1-1134. Radiation Surveys
R12-1-1136. ~~Permanent Radiographic Installations~~ Repealed
R12-1-1140. Enclosed Radiography
R12-1-1142. Baggage and Package Inspection Systems
R12-1-1146. Training
Appendix A. Standards for Organizations that Provide Radiography Certification

ARTICLE 1. GENERAL PROVISIONS

R12-1-102. Definitions

Terms defined in A.R.S. § 30-651, 32-501, 32-516(F), and 32-3231 have the same meanings when used in this Chapter, unless the context otherwise requires. Additional subject-specific definitions are used in other Articles.

"A1" No change

"A2" No change

"Absorbed dose" No change

"Accelerator" No change

"Accelerator produced material" No change

"Accessible emission limit (AEL)" means the maximum accessible emission level of laser or collateral radiation permitted within a particular class.

"Accessible radiation" means laser or collateral radiation to which human access is possible.

"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

"Angular subtense" means the apparent visual angle, a, as calculated from the source size and distance from the eye.

"Annual" No change

"Aperture" means an opening in the protective housing or other enclosure of a laser product, through which laser or collateral radiation is emitted, allowing human access to the radiation.

"Aperture stop" means an opening serving to limit the size and to define the shape of the area over which radiation is measured.

"Authorized medical physicist" No change

"Authorized nuclear pharmacist" No change

"Authorized user" No change

"Background radiation" No change

"Becquerel" No change

"Bioassay" No change

"Brachytherapy" No change

"Byproduct material" No change

"Calendar quarter" No change

"Calibration" No change

"CDRH" means the Center for Devices and Radiological Health.

"Certifiable cabinet x-ray system" No change

"Certified cabinet x-ray system" No change

"Certified laser product" means that the product is certified by a manufacturer in accordance with the requirements of 21 CFR 1040.10, revised April 1, 2016, incorporated by reference and available under R12-1-101. This incorporated material contains no future editions or amendments.

"CFR" No change

"Chelating agent" No change

"Civil penalty" No change

"Classes of lasers" means the following categories of lasers, Class 1, Class 2, Class 2a, Class 3, Class 3a, Class 3b, and Class 4 as defined in 21 CFR 1040.10, revised April 1, 2016, incorporated by reference and available under R12-1-101. This incorporated material contains no future editions or amendments.

"Collective dose" No change

"Committed dose equivalent" No change

"Committed effective dose equivalent" No change

"Consortium" No change

"Curie" No change

"Current license or registration" No change
"Deep-dose equivalent" No change
"Depleted uranium" No change
"Discrete source" No change
"Dose" No change
"Dose equivalent" No change
"Dose limits" No change
"Dosimeter" No change
"Effective dose equivalent" No change
"Effluent release" No change
"Embryo/fetus" No change
"Enclosed beam x-ray system" No change
"Enclosed radiography" No change
"Entrance or access point" No change
"Exhibit" No change
"Explosive material" No change
"Exposure" No change
"Exposure rate" No change
"External dose" No change
"Extremity" No change
"Fail-safe characteristics" No change
"Field radiography" No change
"Field station" No change
"Former U.S. Atomic Energy Commission (AEC) or U.S. Nuclear Regulatory Commission (NRC) licensed facilities" No change
"Generally applicable environmental radiation standards" No change
"Gray" No change
"Hazardous waste" No change
"Healing arts" No change
"Health care institution" No change
"High radiation area" No change
"Human use" No change
"Impound" No change
"Individual" No change
"Individual monitoring" No change
"Individual monitoring device" No change
"Individual monitoring equipment" No change
"Industrial radiography" No change
"Injection tool" No change
"Inspection" No change
"Interlock" No change
"Internal dose" No change
"Irradiate" No change
"Laser" No change
"Lens dose equivalent" No change
"License" No change
"Licensed material" No change
"Licensed practitioner" No change

"Licensee" No change
"Licensing State" No change
"Limits" No change
"Local components" No change
"Logging supervisor" No change
"Logging tool" No change
"Lost or missing licensed or registered source of radiation" No change
"Low-level waste" No change
"Major processor" No change
"Medical dose" No change
"Member of the public" No change
"MeV" No change
"Mineral logging" No change
"Minor" No change
"Monitoring" No change
"Multiplier" No change
"NARM" No change
"Nonexempt nonionizing source" means any system or device that contains a nonionizing source listed in R12-1-1302(F).
"Normal operating procedures" No change
"Natural radioactivity" No change
"NRC" No change
"Nuclear waste" No change
"Occupational dose" No change
"Open beam system" means an ~~analytical~~ x-ray system in which an individual could place some body part in the primary beam path during normal operation.
"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
"PET" No change
"Pharmacist" No change
"Physician" No change
"Positron Emission Tomography (PET)" No change
"Positron Emission Tomography (PET) radionuclide production facility" 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" (RSO) No change
"Radioactive marker" No change
"Radioactive material" No change
"Radioactivity" No change
"Radiographer" No change
"Radiographer's assistant" No change
"Registrant" No change
"Registration" No change
"Regulations of the U.S. Department of Transportation" No change
"Rem" No change
"Research and Development" No change
"Restricted area" No change
"Roentgen" No change
"Safety system" No change
"Sealed source" No change
"Sealed Source and Device Registry" No change
"Shallow dose equivalent" No change
"Shielded position" No change
"Sievert" No change
"Site boundary" No change
"Source changer" No change
"Source holder" No change
"Source material" No change
"Source material milling" No change
"Source of radiation" or "source" No change
"Special form radioactive material" No change
"Special nuclear material in quantities not sufficient to form a critical mass" No change
"Storage area" No change
"Storage container" No change
"Subsurface tracer study" No change
"Survey" No change
"TEDE" No change
"Teletherapy" No change
"Temporary job site" No change
"Test" No change
"These rules" No change
"Total Effective Dose Equivalent" (TEDE) No change
"Total Organ Dose Equivalent" No change
"Unrefined and unprocessed ore" No change
"Unrestricted area" No change
"U.S. Department of Energy" No change
"Very high radiation area" No change
"Waste" No change
"Waste handling licensees" No change
"Week" No change
"Well-bore" No change

"Well-logging" No change
"Whole body" No change
"Wireline" No change
"Wireline service operation" No change
"Worker" No change
"WL" No change
"WLM" No change
"Workload" No change
"Year" No change

ARTICLE 2. REGISTRATION, INSTALLATION, AND SERVICE OF IONIZING RADIATION-PRODUCING MACHINES; AND CERTIFICATION OF MAMMOGRAPHY FACILITIES

R12-1-201. Exemptions

A. Electronic equipment that produces X-radiation incidental to its operation for other purposes is exempt from the registration and notification requirements of this Article, provided that an exposure rate, from any accessible surface, averaged over an area of 10 centimeters squared (1.55 inches squared) does not exceed 5 coulomb per kilogram (C/kg) (0.5 milliroentgen) per hour at 5 centimeters (2.0 inches).

B. The production, testing, or factory servicing of the electronic equipment in subsection (A) is not exempt from the requirements of this Article.

C. Radiation machines in storage or in transit to or from storage are exempt from the requirements of this Article. Providers of radiation machines for mobile services are not exempt from registration.

D. Radiation machines rendered incapable of producing radiation are exempt from the requirements of this Article.

E. Financial institutions that take possession of ionizing radiation machines as a result of foreclosure, bankruptcy, or other default of payment if they document that the unit is not in operation and possession is for the sole purpose of selling, leasing, or transferring the equipment to an entity that can be registered.

R12-1-202. Application for Registration of Facilities with ~~of~~ Ionizing Radiation Producing Machines

A. A person shall not use ~~a~~ an ionizing radiation machine except as authorized in this Article.

B. A person possessing a nonexempt radiation machine shall apply for registration of the facility and all existing radiation-producing machines ~~the machine~~ with the Agency within 30 days after its installation and before initial use. The person applying for registration of a radiation-producing machine shall use the application forms provided by the Agency. The applicant shall provide the information identified in Appendix A of this Article.

C. In addition to the application form or forms, the applicant shall remit the appropriate registration or licensing fee in R12-1-1306 and provide other information required by R12-1-208.

D. Each applicant that applies for registration of a stationary x-ray system, with the exception of applicants from bone densitometry, cabinet radiography, podiatry, dental, bone mineral analyzer and mammography facilities, shall provide a scale drawing of the room in which the x-ray system is located, or provide measurements from the radiation source to the surrounding barrier surfaces. Surveys conducted by qualified experts may be substituted for shielding diagrams. ~~The drawing shall denote the type of materials and the thickness (or lead equivalence) of each barrier of the room (walls, ceilings, floors, doors, windows). The drawing shall also denote the type and frequency of occupancy in adjacent areas, including those above and below the x-ray room of concern (e.g., hallways, offices, parking lots, and lavatories). Estimates of workload shall also be provided with the drawing.~~

E. An applicant proposing to use a particle accelerator for medical purposes shall not use the particle accelerator until the Agency inspection required in R12-1-914 has been completed.

F. An applicant proposing to use an x-ray unit for therapy under the rules of Article 6 shall not use the therapy unit until the Agency approves the registration application.

R12-1-203. Application for Registration of Servicing and Installation

A. Each person who is engaged in the business of installing or offering to install radiation machines shall apply for registration. For purposes of this Chapter, install includes selling and servicing, or offering to sell or service, x-ray machines in Arizona.

B. The applicant shall complete the application for registration on forms ~~that request information required by A.R.S. § 30-672.01,~~ provided by the Agency.

R12-1-204. Issuance of Notice of Registration

~~A.~~ Upon determining that the application meets the requirements of the Act and this Article, the Agency shall issue a Notice of Registration.

~~B.~~ ~~All radiation machines located at the same facility may be registered using one Notice of Registration.~~

R12-1-206. Assembly, Installation, Removal from Service, and Transfer

A. A person who assembles, or installs ~~ionizing~~ radiation machines in this state shall notify the Agency in writing within ~~15~~ 30 days of:
1. The name and address of the person possessing the machine that was assembled or installed;
2. The manufacturer, and model name or model number~~, and serial number~~ of each radiation machine~~ with the tube housing model number and serial number, maximum kVp, and maximum mA,~~ assembled or installed; and
3. The date each machine was assembled or installed, or the first clinical procedure is performed.

B. Any person who possesses a radiation machine registered by the Agency shall notify the Agency within ~~15~~ 30 days of the machine being taken out of service. The written notification shall contain the name and address of the person receiving the machine, if it is sold, leased, or transferred to another person; the manufacturer and model name, ~~and serial number~~ of the machine; and the date the machine was taken out of service.

C. In the case of diagnostic x-ray systems that contain certified components, an assembler shall, within ~~15~~ 30 days following completion of the assembly, submit to the Agency a copy of the assembler's report (FDA Report No. 2579) prepared in compliance with requirements in 21 CFR 1020.30(d), revised April 1, 2016 ~~2008~~, incorporated by reference, and available under R12-1-101. This incorporated material contains no future editions or amendments. The report shall suffice in lieu of any other report by the assembler, if it contains the information required in subsection (A).

D. A person shall not make, sell, lease, transfer, lend, assemble, service, or install radiation machines or the supplies used in connection with radiation machines unless the supplies and equipment when properly placed in operation and used, meet the requirements of these rules.

R12-1-207. Reciprocal Recognition of Out-of-state Radiation Machines

A. If any radiation machine is to be brought into the state for temporary use and is already registered in a state in the U.S., the person proposing to bring the radiation machine into the state shall provide written notice to the Agency at least ~~three~~ five working days before the radiation machine is to be used in the state. The notice shall include the type of radiation machine; the nature, duration, and scope of use; and the exact location where the radiation machine is to be used. If, for a specific case, the ~~three~~ five working-day period would impose an undue hardship, the person may upon application to the Agency, obtain permission to proceed sooner.

B. In addition, the owner of the radiation machine and the person possessing the machine while in the state shall:
1. Comply with all applicable rules of the Agency;
2. Upon request, supply the Agency with a copy of the machine's registration and other information regarding the safe operation of the machine while it is in the state; and
3. Upon request, supply the Agency with the work authorization from the Agency, machine registration, operating and emergency procedures, utilization log, survey instrument and associated calibration record, and training records for all users.

C. A radiation machine shall not be operated within the state on a temporary basis in excess of 180 calendar days per year.

R12-1-208. Certification of Mammography Facilities

An applicant seeking certification of a facility according to A.R.S. § 30-672(J) shall:
1. Provide evidence with the application that a quality assurance program has been established and is in use under R12-1-614(B)(1) and (2),
2. Provide evidence at the time of inspection ~~with the application~~ that physicians reading mammographic images have the training and experience required in A.R.S. § 32-2842, and
3. Provide evidence at the time of inspection ~~with the application~~ that physicians reading mammographic images have met the minimum criteria established by their respective licensing boards, as required in A.R.S. § 32-2842~~(C)~~.

R12-1-209. Notifications and Registration Amendments

A. A registrant shall notify the Agency within 30 days of any change to the information contained in the notice of registration or change to the information contained on a certificate issued according to R12-1-208.

B. A person who possesses a radiation machine registered by the Agency shall notify the Agency within ~~15~~ 30 days if the machine is discarded or transferred to another person. In the notice, the person shall provide the name and address of the person who receives the machine, if it is sold, leased, or transferred to another person; the manufacturer, model, and serial number of the machine; and the date the machine was taken out of service.

Appendix A. Application Information

An application shall contain the following information as required in R12-1-202(B), before a registration will be issued. The Agency shall provide an application form to an applicant ~~with a guide, if available~~, or shall assist the applicant to ensure that only correct information is provided on the application.

Legal Name and mailing address of applicant (Doing Business As (dba) name is optional)	Use location

Person responsible for radiation safety program	Telephone number
Type of facility	~~Facility subtype~~
Legal structure and ownership (sole proprietor ownership requires additional verification information per A.R.S. § 41-1080)	Signature of certifying agent
Radiation machine information including manufacturer and model name or model number	Equipment location identifiers
Shielding information, if applicable	Scale drawing, if applicable
~~Equipment operator instructions and restrictions~~	Physicist name and training, if applicable
~~Classification of professional in charge~~ Training information for authorized users on therapy registrations, if applicable	
~~Record of calibration for therapy units~~	Type of request: amendment, new, or renewal
Protection survey results, if applicable	
~~Type of industrial radiography program, if applicable~~	
Radiation Safety Officer name, if applicable	Contact person
Other registration requirements listed in Articles 2, 6, 8, 9, and 11	Appropriate fee listed in Article 13 schedule

ARTICLE 8. RADIATION SAFETY REQUIREMENTS FOR ANALYTICAL X-RAY OPERATIONS

R12-1-802. Definitions

"Analytical x-ray equipment" means devices or machines used for x-ray diffraction or x-ray induced fluorescence analysis.

"Analytical x-ray system" means a group of components utilizing x-rays to determine the elemental composition or to examine the microstructure of materials.

"Enclosed beam x-ray system" means an analytical x-ray system constructed in such a way that access to the interior of the enclosure housing the x-ray source is precluded during operation except through bypassing of interlocks or other safety devices to perform maintenance or servicing.

"Fail-safe characteristic" means a design feature which causes beam port shutters to close, or otherwise prevents emergence of the primary beam, upon the failure of a safety or warning device.

"Handheld analytical x-ray unit" means x-ray equipment that is designed to be hand-held during operation when the safety apparatus is in working order that closes the shutters or terminates the beam when not held in proximity to test material.

"Local component" means part of an analytical x-ray system and includes each area that is struck by x-rays, such as radiation source housings, port and shutter assemblies, collimators, sample holders, cameras, goniometers, detectors and shielding, but does not include power supplies, transformers, amplifiers, readout devices, and control panels.

"Normal operating procedures" means instructions or procedures including, but not limited to, sample insertion and manipulation, equipment alignment, routine maintenance by the registrant, and data recording procedures which are related to radiation safety.

"Open beam x-ray system" means an analytical x-ray system which permits an individual to place some body part in the primary beam path during normal operation.

"Primary beam" means radiation which passes through an aperture of the source housing on a direct path from the x-ray tube.

R12-1-804. Open-beam X-ray Systems

A. A registrant shall label open beam x-ray systems with a readily discernible sign or signs bearing the radiation symbol and the words:

1. "CAUTION -- HIGH INTENSITY X-RAY BEAM," or a similar warning, on the x-ray source housing; and

2. "CAUTION RADIATION -- THIS EQUIPMENT PRODUCES RADIATION WHEN ENERGIZED" or a similar warning, near any switch that energizes an x-ray tube if the radiation source is an x-ray tube.

B. A registrant shall ensure that an open beam x-ray system has all of the following warning devices:
1. X-ray tube status (On-Off) indicator in systems where the primary beam is controlled in this fashion;
2. Shutter status (Open-Closed) indicators near each port on the radiation housing for systems which control the primary beam; and
3. A clearly visible warning light labeled with the words "X-RAY ON," or a similar warning located near any switch that energizes an x-ray tube, illuminated only when the tube is energized; and
4. The warning devices in subsections (B)(1) through (3) shall be labeled so that their purpose is easily identified.

C. A registrant shall ensure that any apparatus utilized in beam alignment procedures is designed in such a way that excessive radiation will not strike the operator. Particular attention shall be given to viewing devices, in order to ascertain that lenses and other transparent components attenuate the beam to an acceptable level.

D. A registrant shall provide an interlock device which prevents entry of any portion of an individual's body into the primary beam or causes the primary beam to be shut off upon entry into its path on all open-beam x-ray systems. A registrant may apply to the Agency for an exemption from the requirements of a safety device. An application for exemption shall include:
1. A description of the various safety devices that have been evaluated;
2. The reason each device cannot be used; and
3. A description of the alternative methods that will be used to minimize accidental exposure, including procedures to assure that operators and others in the area will be informed of the absence of safety devices.

E. A registrant shall use only systems constructed so that:
1. Each x-ray tube housing is equipped with an interlock that automatically shuts off the tube if the tube is removed from the radiation source housing or the housing is disassembled; and
2. With all shutters closed, radiation measured at a distance of 5 centimeters from the surface of the system is not capable of producing a dose that exceeds 25 μSv (2.5 mRem) in one hour for the specified tube rating of the x-ray tube.

F. A registrant shall supply each x-ray generating system with a protective cabinet that limits leakage radiation measured at a distance of 5 cm (2 in) from the cabinet surface, so that the system is not capable of producing a dose equivalent that exceeds 25 μSv (2.5 mrem) in one hour.

G. A registrant shall ensure that the local components of an analytical x-ray system are located and arranged and have sufficient shielding or access control for the specified tube rating to prevent the radiation level in any area adjacent to the local component group from exceeding the dose limits in R12-1-416.

H. A registrant shall perform a radiation survey of the local component group of each analytical x-ray system to demonstrate compliance with subsection (G) upon:
1. Installation,
2. Change in configuration, or
3. Maintenance that affects the radiation level in any area adjacent to the local component group.

I. A registrant shall maintain a record of each survey for three years or until the analytical x-ray system is no longer used, whichever period is shorter.

J. Handheld analytical x-ray units are exempt from the requirements of sections D, F, and H.

R12-1-805. Administrative Responsibilities

A. A registrant shall designate a radiation safety officer who shall:
1. Establish and maintain operational procedures so that the radiation exposure of each worker is kept ALARA;
2. Instruct all personnel who work with or near radiation producing machines in safety practices;
3. Maintain a system of personnel monitoring if required;
4. Establish radiation control areas, including placement of appropriate radiation warning signs or devices;
5. Provide a radiation safety inspection of radiation producing machines on a routine basis;
6. Review modifications to x-ray systems, including x-ray tube housing, cameras, diffractometers, shielding, and safety interlocks;
7. Investigate and report proper authorities any case of excessive exposure to personnel and take remedial action; and,
8. Be familiar with all applicable rules for control of ionizing radiation.

B. An individual shall not be permitted to operate or maintain an open beam analytical x-ray system unless the individual has received instruction in and demonstrated competence in all of the following:
1. Identification of radiation hazards associated with the use of the equipment;
2. Significance of all radiation warning and safety devices, interlocks incorporated into the equipment, or the reasons that devices or interlocks have not been installed on certain pieces of equipment and the extra precautions required in lieu of these precautions;
3. Proper operating procedures for the equipment;
4. Recognition of symptoms of acute localized radiation exposure; and
5. Proper procedure for reporting an actual or suspected exposure.

C. A registrant shall maintain records of instruction and competence for Agency inspection for three years from the date of course completion or demonstration.

R12-1-807. Surveys

A. To ensure that personnel exposure does not result in a dose to an individual that exceeds the dose limits specified in Article 4, a registrant shall perform a radiation survey upon:
1. Installation of the equipment and at least once each year after installation;
2. Change in the initial arrangement, number, or type of local components in the system;
3. Maintenance that involves disassembly or removal of a local component in the system;
4. Maintenance that involves alignment, if alignment requires the generation of the primary x-ray beam while any local component of the system is disassembled or removed;
5. A visual inspection of the local components in the system that reveals an abnormal condition; or
6. Determination that personnel are being exposed to radiation in excess of established levels recorded in monitoring records for personnel during previous monitoring periods or the occupational dose limits specified in Article 4.

B. The radiation surveys in subsection (A) are not required if the registrant demonstrates that the local components of an analytical x-ray system are located and arranged, and have sufficient shielding or access control, to limit personnel exposure to a level that is ALARA and below the occupational dose limits in Article 4. The ~~Agency~~ registrant shall determine ALARA radiation levels based on the specified x-ray tube rating.

R12-1-808. Posting

A registrant shall conspicuously post each area or room that contains analytical x-ray equipment with a sign or signs that bear the radiation symbol and the words "CAUTION – X-RAY EQUIPMENT" or words with a similar meaning except for closed beam certified cabinets and handheld analytical x-ray units.

R12-1-809. Training

A registrant shall not ~~be~~ allow an individual to operate or maintain analytical x-ray equipment unless the individual has received training and demonstrated competence in:
1. Identifying radiation hazards associated with use of the equipment;
2. Recognizing and using radiation warning and safety devices, including interlocks that are incorporated into the equipment, and understanding why these devices are sometimes not installed;
3. Taking precautions associated with use of the equipment;
4. Recognizing symptoms of an acute localized exposure; and
5. Following proper procedure for reporting a suspected personnel exposure.

ARTICLE 11. INDUSTRIAL USES OF X-RAYS, NOT INCLUDING ANALYTICAL X-RAY SYSTEMS

R12-1-1102. Definitions

"Access point" means any door or cover that is designed to be removed or opened for maintenance or service purposes, opened using tools, and used to provide access to the interior of a cabinet x-ray unit.

"Annual refresher safety training" means a review provided by the registrant for its employees on radiation safety aspects of industrial radiography. The review shall include, as applicable, the results of internal inspections, new procedures or equipment, new or revised statutes or rules, accidents, or errors that have occurred, and provide opportunities for employees to ask safety questions.

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

"Door" means any barrier that is designed to be movable or opened for routine operation purposes, rather than opened using tools, and used to provide access to the interior of the cabinet x-ray unit.

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

"Hands-on experience" means the accumulation of knowledge or skill in any area relevant to radiography.

"Open beam industrial radiography" means activities that entail the use of powerful x-ray radiation sources, often in open industrial premises or outdoors for non-destructive testing which includes inspecting materials for hidden flaws by using x-ray devices to penetrate various materials.

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

"Practical examination" means a demonstration, through practical application of safety rules and principles of industrial radiography, which includes use of all radiography equipment and tests knowledge of radiography procedures.

"Radiographic operations" means all activities associated with use of a radiographic x-ray system. This includes performing surveys to confirm the adequacy of boundaries, setting up equipment, and conducting any activity inside restricted area boundaries.

"Security screening" means the use by law enforcement or their representatives of a portable or robotic attachment of an open-beam x-ray unit designed to image the contents of packs, bags, packages, and other items that may conceal suspicious or hazardous material.

R12-1-1104. Registration Requirements

A. The Agency shall review an application for registration of a radiation machine for use in industrial radiography or security screening and approve the registration if an applicant meets all of the following requirements:
1. The applicant satisfies the general requirements in Article 2 and any special requirements contained in this Article that apply to the use of the device,
2. The applicant submits a program for training radiographer's assistants that complies with R12-1-1146 for activities that qualify as open beam industrial radiography requiring a certified industrial radiographer, and
3. The applicant submits procedures for verifying and documenting the certification status of each radiographer and for ensuring that the certification remains valid for activities that qualify as open beam industrial radiography requiring a certified industrial radiographer.

B. An applicant shall ~~submit~~ maintain written operating and emergency procedures, as prescribed in R12-1-1128.

C. An applicant shall ~~submit~~ maintain a description of a program for review of job performance of each radiographer and radiographer's assistant at intervals that do not exceed six months, as prescribed in R12-1-1146(E).

D. An applicant shall ~~submit~~ maintain a description of the applicant's overall organizational structure as it applies to radiation safety responsibilities in industrial radiography, including specified delegation of authority and responsibility.

E. An applicant shall ~~submit~~ maintain and list the qualifications of each individual designated as an RSO under R12-1-1120 and indicate which designee is responsible for ensuring that the registrant's radiation safety program is implemented.

F. If an applicant intends to perform "in-house" calibrations of survey instruments, the applicant shall describe each calibration method to be used, the relevant experience of each person who will perform a calibration, and procedures to ensure that all calibrations are performed according to the procedures prescribed in R12-1-1108 and the registrant shall maintain records documenting the requirements in this section for three years from the date the requirement is met and make the records available for Agency inspection.

G. An applicant shall identify and describe the location of all field stations and permanent radiographic installations and the registrant shall maintain records documenting the requirements in this subsection for three years from the date the requirement is met and make the records available for Agency inspection.

H. An applicant shall identify each location where records required by this Chapter will be maintained if the records are to be maintained at an address other than the physical address listed on the registration application.

R12-1-1106. Equipment Performance

A registrant shall ensure that each x-ray machine has a lock or other security system designed to prevent unauthorized use or accidental production of radiation and is secured against unauthorized use at all times, except when under the direct surveillance of a radiographer or radiographer's assistant or other authorized user as determined by the registrant and who has all applicable training records on file with the registrant for Agency review during inspections.

R12-1-1108. Radiation Survey Instruments

A. A registrant shall maintain at least two calibrated and operable radiation survey instruments at each location where sources of radiation are present to make radiation surveys required by this Article and Article 4 of this Chapter. Instrumentation required by this Section shall be capable of measuring a range from 0.02 millisieverts (2 millirems) per hour through 0.01 sievert (1 rem) per hour.

B. A registrant shall ensure that each radiation survey instrument required under subsection (A) is calibrated:
1. At intervals that do not exceed ~~six months~~ annually, and after instrument servicing, except for battery changes;
2. For linear scale instruments, at two points located approximately one-third and two-thirds of full-scale on each scale; for logarithmic scale instruments, at mid-range of each decade, and at two points of at least one decade; and for digital instruments, at 3 points between 0.02 and 10 millisieverts (2 and 1000 millirems) per hour; and
3. So that an accuracy within plus or minus 20% of the calibration source can be demonstrated at each point checked.

C. A registrant shall make a record each time a radiation survey instrument is calibrated, and maintain each record for three years after it is made.

R12-1-1110. Quarterly Inventory

A. A registrant shall conduct a quarterly physical inventory to account for all x-ray machines received and possessed under the registration.

B. A registrant shall maintain a record of the quarterly inventory required under subsection (A) for three years after it is made.

C. The record required by subsection (B) shall include the date of the inventory, name of the individual who conducted the inventory, location of each x-ray machine, and manufacturer, and model, ~~and serial number~~ of each x-ray machine.

R12-1-1112. Utilization Logs

A. A registrant shall maintain for each x-ray machine a utilization log that provides all of the following information:
1. A description, including the make, and model~~, and serial number~~ of each x-ray machine;
2. The identity and signature of the operator ~~radiographer~~ using the machine; and
3. The plant or site where the machine is used and dates of use, including each date when the machine is removed from or returned to storage.

B. A registrant shall retain a log required by subsection (A) for three years after the log is made. Incident logs by law enforcement, security, or their representatives will be considered to meet the intent of this rule if presented at the time of inspection.

R12-1-1116. Surveillance

During each open-beam radiographic operation a radiographer, or the radiographer's assistant as permitted by R12-1-1118, shall maintain continuous direct visual surveillance of the operation to protect against unauthorized entry into a high radiation area, except at permanent radiographic installations where all entrances are locked and the registrant is in compliance with R12-1-1136.

R12-1-1118. Industrial Radiographic Operations

A. If industrial radiography is performed at a location other than a permanent radiographic installation, a registrant shall ensure that the radiographer is accompanied by at least one other radiographer or radiographer's assistant, qualified under R12-1-1146 or operators as designated by the registrant for security screening operations. The additional radiographer or radiographer's assistant shall observe the operations and be capable of providing immediate assistance to prevent unauthorized entry. The registrant shall not allow industrial radiography if only one qualified individual is present.

B. A registrant shall ensure that each industrial radiographic operation is conducted at a location of use authorized on the registration or maintain records of all temporary sites as a portion of the utilization log for transportable, mobile, and portable devices ~~of a permanent radiographic installation~~, unless another permanent location is specifically authorized by the Agency.

C. Portable security screening operations shall ensure that each area is protected from public access during the operation in accordance with the operating procedures written and maintained at the local law enforcement or security office designated on the registration.

R12-1-1120. Radiation Safety Officer (RSO)

A. A registrant shall have a radiation safety officer (RSO) who is responsible for implementing procedures and regulatory requirements in the daily operation of the radiation safety program.

B. A registrant shall ensure that the RSO for operations that include open-beam radiography has satisfied the following minimum requirements:
1. The training and testing requirements in R12-1-1146;
2. Two thousand hours of hands-on experience as a qualified radiographer for an industrial radiographic operation; and
3. Formal training in the establishment and maintenance of a radiation safety program.

C. A registrant may use an individual in the position of RSO for operations that include open-beam radiography who does not have the training and experience required in subsection (B), if the registrant provides the Agency with a description of the individual's training and experience in the field of ionizing radiation and training with respect to the establishment and maintenance of a radiation safety protection program.

D. The specific duties and authorities of the RSO include, but are not limited to:
1. Establishing and overseeing operating, emergency, and ALARA procedures as required in Article 4 of this Chapter, and reviewing the procedures every year to ensure that they conform to current Agency rules and registration conditions;
2. Overseeing and approving all phases of the training program for radiographic personnel, ensuring that appropriate and effective radiation protection practices are taught;
3. Overseeing radiation surveys and associated documentation to ensure that the surveys are performed in accordance with the rules and taking corrective measures if levels of radiation exceed established action limits;
4. Overseeing the personnel monitoring program to ensure that monitoring devices are calibrated and used properly by occupationally exposed personnel and ensuring that records are kept of the monitoring results and timely notifications are made as required in R12-1-444; and
5. Overseeing operations to ensure that they are conducted safely and instituting corrective actions, which may include ceasing operations if necessary.

R12-1-1122. ~~Form of Records~~ Repealed
~~A registrant shall maintain records in accordance with R12-1-405.~~

R12-1-1126. Posting
A registrant shall post any area in which open-beam industrial radiography is being performed as required by R12-1-429. Exceptions listed in R12-1-430 do not apply to industrial radiographic operations.

R12-1-1128. Operating and Emergency Procedures
A. A registrant shall have operating and emergency procedures that include, at minimum, instructions in the following, as applicable:
1. Use of radiation machines, so that persons are not exposed to radiation that exceeds the limits in Article 4 of this Chapter;
2. Methods and occasions for conducting radiation surveys;
3. Methods for controlling access to security screening and open beam radiographic areas;
4. Methods and occasions for locking and securing a radiation machine;
5. Personnel monitoring and associated equipment;
6. Inspection, maintenance, and operability checks of a radiation machine and survey instruments;
7. Actions to be taken immediately by radiography personnel if a pocket dosimeter is found to be off-scale or an alarm rate meter sounds an alarm;
8. Procedures for identifying and reporting defects and noncompliance, as required by R12-1-448;
9. The procedure for notifying the RSO and the Agency in the event of an accident;
10. Minimizing exposure of persons in the event of an accident, and
11. Maintenance of records.

B. The registrant shall maintain copies of current operating and emergency procedures until the Agency terminates the registration. Superseded procedures shall be maintained for three years after a change is made. Additionally, records shall be maintained in accordance with R12-1-1138.

R12-1-1130. Personnel Monitoring
A. An individual shall not act as a radiographer or a radiographer's assistant for open-beam operations unless, at all times during radiographic operations, the individual wears, on the trunk of the body, a direct reading dosimeter, an operating alarm rate meter, and either a film badge, a TLD, or an optically stimulated luminescence (OSL) dosimeter. At permanent radiography installations where other required alarm or warning devices are in routine use, an alarm rate meter is not required.
1. A registrant shall provide pocket dosimeters for open-beam operations that have a range from zero to 2 millisieverts (200 millirems) and ensure that the dosimeters are recharged at the start of each shift. Electronic personnel dosimeters are permitted in place of ion-chamber pocket dosimeters.
2. The registrant shall assign a film badge, TLD, or OSL dosimeter to ~~one individual~~ each operator and auxiliary personnel that cannot be removed from the area for open beam or security screening operations, who shall wear the assigned equipment.
3. The registrant shall replace film badges at least monthly and replace TLDs or OSL dosimeters at least quarterly.
4. After replacement, the registrant shall ensure that each film badge or TLD is processed as soon as possible.

B. A radiographer or radiographer's assistant for open-beam operations shall record exposures noted from direct reading dosimeters, such as pocket dosimeters or electronic personnel dosimeters, at the beginning and end of each shift.

C. A registrant shall check each pocket dosimeter or electronic personnel dosimeter at least yearly for correct response to radiation, and discontinue use of a dosimeter if it is not accurate within plus or minus 20% of the true radiation exposure.

D. If an individual's pocket dosimeter has an off-scale reading, or the electronic personnel dosimeter reads greater than 2 millisieverts (200 millirems), and radiation exposure cannot be ruled out as the cause, a registrant shall send the individual's film badge, TLD, or OSL dosimeter for processing within 24 hours. The registrant shall not allow the individual to work with a radiation machine until the individual's radiation exposure is determined. Using the information from the badge or dosimeter, the RSO or the RSO's designee shall calculate the affected individual's cumulative radiation exposure, as prescribed in Article 4 of this Chapter and include the results in records maintained in accordance with subsection (G).

E. If an individual's monitoring device is lost or damaged, the individual shall cease work immediately until the registrant provides a replacement film badge, TLD, or OSL dosimeter and the RSO or the RSO's designee calculates the exposure for the time period from issuance to discovery of a lost or damaged film badge, TLD, or OSL dosimeter. The registrant shall include the calculated exposure and the time period for which the film badge, TLD, or OSL dosimeter was lost or damaged in the records maintained in accordance with subsection (G).

F. For each alarm rate meter a registrant shall ensure that:
1. At the start of a shift each individual with an alarm rate meter checks that the alarm functions (sounds) before using the device;

2. Each device is set to give an alarm signal at a preset dose rate of 5 mSv/hr (500 mrem/hr) with an accuracy of plus or minus 20% of the true radiation dose rate;
3. A special means is necessary to change the preset alarm function on the device; and
4. Each device is calibrated at periods that do not to exceed 12 months for correct response to radiation

G. Each registrant shall maintain the following personnel monitoring records:
1. Each dosimeter reading and the yearly operability check required by subsections (B) and (C) for three years after each record is made;
2. A record of each alarm rate meter calibration for three years after the record is made;
3. Any report received from the film badge, TLD, or OSL processor. The registrant shall maintain these records until the Agency terminates the registration; and
4. Any estimation of an exposure evidenced by an off-scale personnel direct-reading dosimeter or a lost or damaged film badge, TLD, or OSL dosimeter. The records shall be maintained until the Agency terminates the registration.

R12-1-1132. Supervision of a Radiographer's Assistant

If a radiographer's assistant uses a radiation machine or conducts a radiation survey ~~required by R12-1-1134(B)~~, the registrant shall ensure that the assistant is under the personal supervision of a radiographer. For purposes of this Section "personal supervision" means:
1. The radiographer is physically present at the site where the radiation machine is being used;
2. The radiographer is available to give immediate assistance if required; and
3. The radiographer is able to observe directly the assistant's performance.

R12-1-1134. Radiation Surveys

A. A registrant shall conduct surveys with a calibrated and operable radiation survey instrument that meets the requirements of R12-1-1108 for all open-beam operations.

~~**B.** A registrant shall conduct a survey of a radiographic machine any time the machine is placed in storage to ensure that the machine will not expose personnel to radiation.~~

~~**C.**~~**B.** A registrant shall maintain a record of each exposure survey conducted ~~before a machine is placed in storage under subsection (B), if that survey is the last one performed during the workday~~. Each record shall be maintained for three years after it is made.

R12-1-1136. ~~Permanent Radiographic Installations~~ Repealed

~~**A.** If a registrant maintains a permanent radiographic installation that does not fall within the definition of "enclosed radiography" in R12-1-102, the registrant shall ensure that each entrance used for personnel access to the high radiation area has either:~~
~~1. An entrance control device of the type described in R12-1-420(A)(1), which reduces the radiation level upon entry into the area, or~~
~~2. Both conspicuous visible and audible alarm signals to warn of the presence of radiation. The registrant shall ensure that the visible signal is actuated by radiation if the x-ray tube is energized and the audible signal is actuated if a person attempts to enter the installation while the x-ray tube is energized.~~

~~**B.** A registrant shall test the alarm system for proper operation with a radiation source each day before the installation is used for radiographic operations. The test shall include a check of both the visible and audible signals. The registrant shall test each device referenced in subsection (A)(1) monthly. If an entrance control device or alarm signal is operating improperly, the registrant shall immediately label the device or signal as "defective" and repair the device or signal within seven calendar days. The registrant may continue to use the facility during this seven-day period, if the registrant implements continuous surveillance requirements of R12-1-1116 and uses an alarm rate meter.~~

~~**C.** A registrant shall maintain each record of alarm system and entrance control device tests for three years after the record is made.~~

R12-1-1140. Enclosed Radiography

A. The Agency has determined that any certified or certifiable cabinet x-ray system, as defined in Article 1, is exempt from the requirements of Article 11, provided that both of the following conditions are met:
1. The registrant makes, or causes to be made, an evaluation of each certified and certifiable cabinet x-ray system, at intervals that do not exceed 12 months, to determine whether the system conforms to the standards for certified and certifiable cabinet x-ray systems defined in Article 1. Records of each evaluation shall be maintained for three years from the date the record is created; and
2. The registrant performs a physical radiation survey with a survey instrument calibrated within the preceding 12 months and designed for the energy range and levels of radiation that will be assessed.

B. A registrant with a cabinet x-ray system that is not exempt under subsection (A) shall comply with the recordkeeping requirements of this Article and the following special requirements. The registrant shall:
1. Ensure that radiation levels measured at 5 centimeters (2 inches) from any accessible exterior surface of the enclosure do not exceed 50 microsievert (0.5 milliroentgen) in one hour for any combination of technical factors (i.e., mA, kVp);

2. Ensure that access to the interior of the enclosure is possible only through interlocked doors or panels that prevent production of radiation unless all interlocked doors or panels are securely closed. The registrant shall ensure that opening a door or panel results in immediate termination of radiation production and subsequent reactivation of the x-ray tube is only possible at the control panel;
3. Provide visible warning signals, activated only during production of radiation, at the control panel and at each access point to the interior of the enclosure;
4. Before using an x-ray system make, or cause to be made, an initial evaluation of the x-ray system to determine compliance with this Article, and subsequently evaluate the x-ray system at intervals that do not exceed three months. The registrant shall maintain a record of each evaluation for two years, and
5. Using instrumentation that complies with R12-1-1108, perform a physical radiation survey to satisfy the requirements of subsection (B)(4).

C. A registrant with a shielded room x-ray systems shall comply with the recordkeeping requirements of this Article and the following special requirements. The registrant shall:
1. Shield each x-ray room so that every location on the exterior meets the requirements for an "unrestricted area" as specified in R12-1-416;
2. Provide access to the interior of a shielded x-ray room only through doors or panels that are interlocked. The registrant shall ensure that radiation production is possible only when all interlocked doors and panels are securely closed, opening of any interlocked door or panel results in immediate termination of radiation production; and subsequent reactivation of the x-ray tube is only possible at the control panel;
3. Provide each access point with two interlocks, each on a separate circuit, so that failure of one interlock will not affect the performance of the other interlock;
4. Provide visible warning signals, activated only during production of radiation at the control panel and each access point to the shielded room;
5. Make, or cause to be made, an initial evaluation of each shielded room x-ray system to determine compliance with this Article, and subsequently evaluate the x-ray system at intervals that do not exceed three months. The registrant shall maintain a record of each evaluation for two years;
6. Perform radiation surveys to determine exposure with an instrument that meets the requirements of R12-1-1108;
7. Inspect electrical interlocks and warning devices for correct operation before ~~each~~ use each day, and maintain a record of each inspection for two years;
8. Not permit an individual to operate an x-ray machine for shielded room radiography unless the individual has received a copy of, and instruction in, the operating procedures and demonstrated competence in the safe use of the equipment;
9. Ensure that an individual does not occupy the interior of any shielded room x-ray system during production of radiation;
10. Provide personnel monitoring devices that meet the requirements of R12-1-1130(A)(2) to each shielded room x-ray machine operator, and require that each operator use the devices;
11. Maintain records of:
    a. Quarterly inventories for mobile systems, as prescribed in R12-1-1110; and
    b. Utilization logs for all systems, as prescribed in R12-1-1112; and
12. Maintain records for three years from the date of the quarterly inventory or utilization log.

D. A registrant shall connect an enclosed radiography machine to the electrical system in a manner that will prevent a ground fault from generating x-radiation.

R12-1-1142. Baggage and Package Inspection Systems

A. For x-ray systems designed to screen carry-on baggage or packages ~~at airlines, railroads, bus terminals, package inspection facilities,~~ near pedestrian traffic or with public access, ~~or similar facilities,~~ a registrant shall ensure the x-ray system has an operator present at the control area in a position that permits surveillance of the ports and doors during generation of x-radiation to prevent exposure to passengers and other members of the public.

B. For an exposure or preset succession of exposures of one-half second or greater duration, a registrant shall use a system that enables the operator to terminate the exposure or preset succession of exposures at any time.

C. For an exposure or preset succession of exposures of less than one-half second duration, a registrant shall use a system that allows the operator to complete the exposure in progress, but prevent additional exposures.

D. A registrant shall operate a baggage or package inspection system according to the manufacturer's instructions.

E. A registrant shall not disconnect or otherwise tamper with the safety systems of a baggage or package inspection system, except for maintenance purposes.

F. In addition to the requirements in this Section, a registrant using a baggage or package inspection system shall meet the requirements in R12-1-1140(A), (B), and (D).

R12-1-1146. Training

A. A registrant shall not allow an individual to act as an open-beam industrial radiographer until the individual has received training in the subjects in subsection (G), has participated in a minimum of two months of on-the-job training, and is

certified through a radiographer certification program by ~~a~~ an independent certifying organization in accordance with the criteria specified in Appendix A.

1. A registrant shall provide the Agency with proof of an individual's ~~individuals's~~ certification upon request.
2. A registrant shall maintain proof of an individual's certification at the job site where the individual is performing open-beam field radiography.
3. A registrant that employs a certified radiographer in Arizona shall ensure that:
   a. The radiographer has obtained initial certification or recertification within the last five years; and
   b. An uncertified radiographer works only as a radiographer's assistant until certified.
4. A radiographer shall recertify every five years by:
   a. Taking an approved radiography certification examination in accordance with this subsection; or
   b. Providing written evidence that the radiographer is active in the practice of industrial radiography and has participated in continuing education during the previous five-year period.
5. If an individual cannot provide the written evidence required in subsection (4)(b), the individual shall retake the certification examination.
6. A radiographer shall provide the registrant with proof of certification in the form of a card issued by the certifying organization that contains:
   a. A picture of the certified radiographer,
   b. The radiographer's certification number,
   c. The date the certification expires, and
   d. The radiographer's signature.

B. A registrant shall not allow an individual to act as an open-beam industrial radiographer until the individual:

1. Receives copies of and instruction in the requirements of this Article, applicable Sections of Articles 4 and 10 and R12-1-107, the Agency registration or registrations under which the individual will perform industrial radiography, and the registrant's operating and emergency procedures;
2. Demonstrates an understanding of the registrant's registration conditions if any and operating and emergency procedures by successful completion of a written or oral examination that covers the relevant material;
3. Receives training in:
   a. Use of the registrant's radiation machine,
   b. Daily inspection of the radiation machine, and
   c. Use of radiation survey instruments; and
4. Demonstrates an understanding of the use of the radiation machines and survey instruments described in subsection (B)(3) by successful completion of a practical examination covering this material.

C. A registrant shall not allow an individual to act as a radiographer's assistant for open-beam industrial operations until the individual:

1. Receives copies of and instruction in the requirements of this Article, applicable Sections of Articles 4 and 10 and R12-1-107, the Agency registration conditions if any ~~or registrations~~ under which the radiographer will perform open-beam industrial radiography, and the registrant's operating and emergency procedures;
2. Develops competence to use, under the personal supervision of the radiographer, the registrant's radiation machine and radiation survey instruments; and
3. Demonstrates understanding of the instructions provided under subsection (C)(1) by successfully completing a written test on the subjects covered and demonstrates competence using the hardware described in subsection (C)(2) by successfully completing a practical examination.

D. A registrant shall provide refresher safety training for each radiographer and radiographer's assistant at intervals that do not exceed 12 months.

E. Except where an individual serves both as a radiographer and an RSO, the RSO or the RSO's designee shall design and implement an inspection program to examine the job performance of each radiographer and radiographer's assistant and ensure that the Agency's rules and registration requirements, and the registrant's operating and emergency procedures, are followed. The inspection program shall:

1. Include observation of the performance of each radiographer and radiographer's assistant during an actual industrial radiographic operation, at intervals that do not exceed six months; and
2. Provide that, if a radiographer or a radiographer's assistant has not participated in an industrial radiographic operation for more than six months since the last inspection, each radiographer shall demonstrate knowledge of the training requirements in subsection (B)(3) and each radiographer's assistant shall demonstrate knowledge of the training requirements of subsection (C)(2) by a practical examination before these workers can participate in a radiographic operation.

F. A registrant shall maintain records of the training required in this Section, including certification documents, written and practical examinations, refresher safety training documents, and inspection documents, in accordance with subsection (I).

G. A registrant shall include the following subjects in the training required under subsection (A):

1. Fundamentals of radiation safety, including:

a. Characteristics of x-ray radiation;
b. Units of radiation dose and quantity of radioactivity;
c. Hazards of exposure to radiation;
d. Levels of radiation from x-ray machines; and
e. Methods of controlling radiation dose (time, distance, and shielding);

2. Radiation detection instruments, including:
   a. Use, operation, calibration, and limitations of radiation survey instruments;
   b. Survey techniques; and
   c. Use of personnel monitoring equipment;
3. Equipment topics, including:
   a. Operation and control of radiation machines; and
   b. Inspection and maintenance of each radiation machine and survey instrument;
4. The requirements of pertinent Agency rules; and
5. Case histories of accidents in radiography.

H. A registrant shall maintain records of radiographer certification in accordance with subsection (I)(1) and provide proof of certification as required in subsection (A)(1).

I. A registrant shall maintain the following records for three years after each record is made:
1. Records of training for each radiographer and each radiographer's assistant. For radiographers, the records shall include radiographer certification documents and verification of certification status. All records shall include copies of written tests, dates of oral and practical examinations, and names of individuals who conducted and took the oral and practical examinations; and
2. Records of annual refresher safety training and semi-annual inspections of job performance for each radiographer and each radiographer's assistant. The records for the annual refresher safety training shall list topics discussed during training, the date of training, and names of each instructor and attendee. For inspections of job performance, the records shall include a list of items checked during the inspection and any non-compliance observed by the RSO.

Appendix A. Standards for Organizations that Provide Radiography Certification

Note: For purposes of this Article an "independent certifying organization" means an organization that meets all of the criteria in this Appendix.

I. Requirements for an Organization that Provides Radiographer Certification

To qualify to provide radiography certification, an organization shall:

A. Be a society or association, with members who participate in, or have an interest in, the field of industrial radiography;
B. Not restrict membership because of race, color, religion, sex, age, national origin, or disability;
C. Have a certification program that is open to nonmembers, as well as members;
D. Be an incorporated, nationally recognized organization that is involved in setting national standards of practice within its fields of expertise;
E. Have a staff comparable to other nationally recognized organizations, a viable system for financing its operations, and a policy-and decision-making review board;
F. Have a set of written, organizational by-laws and policies that address conflicts of interest and provide a system for monitoring and enforcing the by-laws and policies;
G. Have a committee, with members who can carry out their responsibilities impartially, review and approve the certification guidelines and procedures, and advise the organization's staff in implementing the certification program;
H. Have a committee, with members who can carry out their responsibilities impartially, review complaints against certified individuals, and determine sanctions;
I. Have written procedures that describe all aspects of the organization's certification program;
J. Maintain records of the current status of each individual's certification and administration of the certification program;
K. Have procedures to ensure that certified individuals are provided due process with respect to administration of the certification program, including a process for becoming certified and a process for imposing sanctions against certified individuals;
L. Have procedures for proctoring examinations and qualifying proctors. The organization, through these procedures, shall ensure that an individual who proctors an examination is not employed by the same company or corporation (or a wholly-owned subsidiary of the company or corporation) that employs an examinee;
M. Exchange information about certified individuals with the Agency, other independent certifying organizations, the NRC, or Agreement States and allow periodic review of its certification program and related records; and
N. Provide a description to the Agency of its procedures for choosing examination sites and providing a favorable examination environment.

II. Requirements for a Certification Program

An independent certifying organization shall ensure that its certification program:

A. Requires an applicant for certification to:
1. Obtain training in the subjects listed in R12-1-1146(G), and
2. Satisfactorily complete a written examination that covers these subjects;

B. Require an applicant for certification to provide documentation demonstrating that the applicant has:
1. Received training in the subjects listed in R12-1-1146(G);
2. Satisfactorily completed the on-the-job training required in R12-1-1146(A); and
3. Received verification from a registrant that the applicant has demonstrated the capability of independently working as a radiographer;

C. Provides procedures that protect examination questions from disclosure;

D. Provides procedures for denying certification to an applicant and revoking, suspending, and reinstating a certificate;

E. Provides a certification period that is not less than three years or more than five years, procedures for renewing certifications and, if the procedures allow renewals without examination, a system for assessing evidence of recent full-time employment and annual refresher training; and

F. Provides a timely response to inquiries, by telephone or letter, from members of the public, about an individual's certification status.

III. Requirements for a Written Examination

An independent certifying organization shall ensure that its examination:

A. Is designed to test an individual's knowledge and understanding of the subjects listed in R12-1-1146(G) ~~or equivalent NRC or Agreement State requirements~~;

B. Is written in a multiple-choice format; and

C. Has psychometrically valid questions drawn from a question bank and based on the material in R12-1-1146(G).