Regulatory Analysis

Notice of Intended Action to be published: 641—Chapter 39
"Registration and Safety Requirements for Radioactive Materials"

Iowa Code section(s) or chapter(s) authorizing rulemaking: 136C
State or federal law(s) implemented by the rulemaking: Iowa Code chapter 136C

Public Hearing

A public hearing at which persons may present their views orally or in writing will be held as follows:

November 4, 2025 10 a.m.	Microsoft Teams Meeting ID: 256 572 060 444 0 Passcode: SG2Vc96j

Public Comment

Any interested person may submit written or oral comments concerning this Regulatory Analysis, which must be received by the Department of Health and Human Services no later than 4:30 p.m. on the date of the public hearing. Comments should be directed to:

Victoria L. Daniels
321 East 12th Street
Des Moines, Iowa 50319
Phone: 515.829.6021
Email: compliancerules@hhs.iowa.gov

Purpose and Summary

This proposed chapter is one of eight chapters pertaining to radiologic health matters regulated by the Department. This proposed chapter and the seven others underwent a fulsome review as a part of the Red Tape Review process laid out in Executive Order 10. As a result of this review, restrictive terms were removed, areas that were duplicative were combined or eliminated, and editorial updates were made to processes and procedures to ensure they reflect current policies and procedures. This chapter sets forth regulations regarding radiation producing machines, radioactive materials, and the transportation of radioactive materials.

Analysis of Impact

1. **Persons affected by the proposed rulemaking:**

- **Classes of persons that will bear the costs of the proposed rulemaking:**

There are not any expected costs for this rulemaking.

- **Classes of persons that will benefit from the proposed rulemaking:**

Professionals and organizations who work with or around radiation producing sources will benefit from clear and coherent rules.

2. **Impact of the proposed rulemaking, economic or otherwise, including the nature and amount of all the different kinds of costs that would be incurred:**

- **Quantitative description of impact:**

Not applicable.

- **Qualitative description of impact:**

Professionals and organizations who work with or around radiation producing sources will benefit from clear and coherent rules.

3. **Costs to the State:**

- **Implementation and enforcement costs borne by the agency or any other agency:**

The Department incurs personnel and other administrative costs associated with enforcement of this proposed chapter.

- **Anticipated effect on State revenues:**

This rulemaking is not expected to have any impact on State revenues.

4. **Comparison of the costs and benefits of the proposed rulemaking to the costs and benefits of inaction:**

The regulation of radioactive materials and radiation producing machines is required by Iowa Code chapter 136C.

5. **Determination whether less costly methods or less intrusive methods exist for achieving the purpose of the proposed rulemaking:**

Not applicable.

6. **Alternative methods considered by the agency:**

- **Description of any alternative methods that were seriously considered by the agency:**

Not applicable.

- **Reasons why alternative methods were rejected in favor of the proposed rulemaking:**

Not applicable.

Small Business Impact

If the rulemaking will have a substantial impact on small business, include a discussion of whether it would be feasible and practicable to do any of the following to reduce the impact of the rulemaking on small business:

- Establish less stringent compliance or reporting requirements in the rulemaking for small business.
- Establish less stringent schedules or deadlines in the rulemaking for compliance or reporting requirements for small business.
- Consolidate or simplify the rulemaking's compliance or reporting requirements for small business.
- Establish performance standards to replace design or operational standards in the rulemaking for small business.
- Exempt small business from any or all requirements of the rulemaking.

If legal and feasible, how does the rulemaking use a method discussed above to reduce the substantial impact on small business?

This rulemaking is not expected to impact small business.

Text of Proposed Rulemaking

ITEM 1. Rescind 641—Chapter 39 and adopt the following **new** chapter in lieu thereof:

CHAPTER 39
REGISTRATION AND SAFETY REQUIREMENTS FOR RADIOACTIVE MATERIALS

641—39.1(136C) General provisions. This rule establishes the requirements for licensee or registrants regarding the possession, use, storage, and transfer of radioactive materials in Iowa as an agreement state. The provisions of this chapter are in addition to, and not in substitution for, any other applicable portions of 641—Chapters 37, 38, 40, and 42.

641—39.2(136C) Definitions. The definitions contained in 10 CFR 19, 20, 30, 32, 33, 34, 35, 36, 37, 39, 40, 70, 71, as amended to August 1, 2025, and adopted by reference, apply to the provisions of this chapter. The definitions provided in 641—Chapters 37, 38, 40, and 42 may also apply. Additionally, the definitions set forth below are specific to this chapter.

"Agreement state" means any state with which the U.S. Nuclear Regulatory Commission or the U.S. Atomic Energy Commission has entered into an effective agreement under Subsection 274b of the Atomic Energy Act of 1954 as amended to August 1, 2025 (73 Stat. 689). The state of Iowa is an agreement state as of January 1, 1986.

"ANSI" means the American National Standards Institute.

"Cabinet X-ray system" means an X-ray system with the X-ray tube installed in an enclosure independent of existing architectural structures, except the floor upon which it may be placed. The cabinet X- ray system is intended to:

1. Contain at least that portion of a material being irradiated;
2. Provide radiation attenuation; and
3. Exclude personnel from its interior during generation of radiation. Included are all X-ray systems designed primarily for the inspection of carry-on baggage at airline, railroad, and bus terminals and in similar facilities. An X-ray tube used within a shielded part of a building, or X-ray equipment that may temporarily or occasionally incorporate portable shielding, is not considered a cabinet X-ray system.

"Certifiable cabinet X-ray system" means an existing uncertified X-ray system that has been modified to meet certification requirements specified in 21 CFR 1020.40.

"Certified cabinet X-ray system" means an X-ray system that has been certified in accordance with 21 CFR 1010.2 as being manufactured and assembled pursuant to the provisions of 21 CFR 1020.40.

"Certifying entity" means an independent certifying organization meeting the requirements of Appendix A in 10 CFR Part 34 or an agreement state meeting the requirements in Appendix A, Parts II and III, of 10 CFR Part 34.

"Collimator" means a small radiation shield of lead or other heavy metal that is placed on the end of a 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.

"Commission" or *"NRC"* means the Nuclear Regulatory Commission or its duly authorized representatives.

"Diagnostic clinical procedures manual" means a collection of written procedures that describes each method (and other instructions and precautions) by which the licensee performs diagnostic clinical procedures; describes where each diagnostic clinical procedure has been approved by the authorized user; and includes the radiopharmaceutical, dosage, and route of administration.

"Enclosed radiography" means industrial radiography conducted in an enclosed cabinet or room and includes cabinet radiography and shielded-room radiography.

"Field station" means a facility where registered radiation machines may be stored or used and from which equipment is dispatched.

"GED" means general educational development.

"Iowa HHS" means the Iowa department of health and human services. For purposes of this chapter, this definition applies unless otherwise specified. For any CFR provisions incorporated by reference in this chapter that use the term "department," the definition provided in 10 CFR 50.2 applies.

"Major processor" means a user processing, handling, or manufacturing radioactive material exceeding Type A quantities as unsealed sources or material, or exceeding four times Type B quantities as sealed sources, but does not include nuclear medicine programs, universities, industrial radiographers, or small industrial programs.

"Minimal threat" means that during the operations of electronic devices capable of generating or emitting fields of radiation:

1. No deliberate exposure of an individual occurs;
2. The radiation is not emitted in an open beam configuration; and
3. No known physical injury to an individual has occurred.

"Permanent radiographic installation" means an enclosed shielded room, cell, or vault, not located at a temporary job site, in which radiography is performed.

"Radiation safety officer" means an individual named by the registrant who has a knowledge of, responsibility for, and authority to enforce appropriate radiation protection rules, standards, and practices on behalf of the licensee or registrant and who meets the requirements of 641—subparagraph 39.10(2)*"g"*(5).

"Radiographer" means any individual who has successfully completed the training, testing, and documentation requirements of subparagraph 39.10(2)*"g"*(2), who performs or personally supervises industrial radiographic operations, and who is responsible to the registrant for ensuring compliance with the requirement of these rules and all license and certificate of registration conditions.

"Radiographer certification" means written approval received from a certifying entity stating that an individual has satisfactorily met certain established radiation safety, testing, and experience criteria.

"Radiographer's assistant" means any individual who has successfully completed the training, testing, and documentation requirements of 641—subparagraph 39.10(2)*"g"*(1) and who uses sources of radiation and related handling tools or radiation survey instruments under the direct supervision of a radiographer trainer.

"Radiographer trainer" or *"instructor"* means any individual who instructs and supervises radiographer's assistants during on-the-job training and who meets the requirements of subparagraph 39.10(2)*"g"*(3).

"Radiographic personnel" means any radiographer or radiographer's assistant.

"RAM" means radioactive materials.

"Residential location" means any area where structures in which people lodge or live are located, and the grounds on which such structures are located, including but not limited to houses, apartments, condominiums, and garages.

"Shielded-room radiography" means industrial radiography conducted in a room shielded so that radiation levels at every location on the exterior meet the limitations specified in 641—subrule 37.11(11).

"Temporary job site" means any location where radiographic operations are conducted and may be stored other than the location(s) listed in a certificate of registration.

641—39.3(136C) General regulatory requirements for incorporating CFR by reference.

39.3(1) Congress authorized the NRC in Section 274b of the Atomic Energy Act to enter into agreements that allow states to assume, and the NRC to discontinue, regulatory authority over byproduct, source, and small quantities of special nuclear material. The state can then regulate byproduct, source, and small quantities of special nuclear materials that are covered in the agreement, using its own legislation, regulations, or other legally binding provisions.

39.3(2) The Commission will enter into an agreement if the Commission finds the state program adequate to protect public health and safety and compatible with the NRC's regulatory program. The NRC ensures that an agreement state program remains adequate and compatible through periodic review and assessment under the Integrated Materials Performance Evaluation Program (IMPEP) as amended to August 1, 2025. The state of Iowa is an agreement state as of January 1, 1986.

39.3(3) As an agreement state, the requirements of 10 CFR Parts 19, 20, 30, 32, 33, 34, 35, 36, 37, 39, 40, 70, and 71 as amended to August 1, 2025, are hereby adopted by reference, as specified in the corresponding subrules of this chapter, unless specifically exempted. Where Iowa HHS forms are required, as specified in this chapter, such forms shall be submitted to Iowa HHS. A copy of 10 CFR is available at no charge from the NRC website.

39.3(4) All Iowa RAM facilities and personnel shall comply with the applicable provisions of this chapter; the related portions of 641—Chapters 37, 38, 40 and 42; and the referenced 10 CFR

parts. All CFR references in this chapter are as amended to August 1, 2025. Where differences exist, compliance with the most stringent applicable standard, whether CFR regulations or Iowa Administrative Code, shall apply.

641—39.4(136C) Notices, instructions and reports to workers: inspection and investigations.

39.4(1) In addition to the rules of this chapter, RAM facilities as defined in rule 641—37.2(136C) shall comply with the requirements of 10 CFR Part 19, "Notices, Instructions and Reports to Workers; Inspection and Investigations," except where specific exemptions apply.

39.4(2) The provisions of 10 CFR Part 19 are hereby adopted by reference and are subject to the following conditions:

a. Not adopted by reference are 10 CFR 19.1, 19.2(a)(2) through (4), 19.2(b), 19.4, 19.5, 19.8, 19.11(b)(e), 19.14(a), 19.17, 19.18, 19.20, 19.30, 19.32, and 19.40.

b. Where the word "NRC" appears in 10 CFR 19.3, 19.11(f), and 19.14, substitute the words "Iowa HHS."

c. Where the word "Commission" appears in 10 CFR 19.3 (definition of "worker"), 19.11(g), 19.12, 19.13, 19.14, 19.15, and 19.16, substitute the words "Iowa HHS."

d. Where the words "Nuclear Regulatory Commission" appear in 10 CFR 19.13(a), substitute the words "Iowa HHS."

e. Where the words "Administrator of the appropriate Commission Regional Office" appear in 10 CFR 19.16(a), substitute the words "Iowa HHS."

f. Where the words "Regional Office Administrator" appear in 10 CFR 19.16(a) and (b), substitute the words "Iowa HHS."

g. Where the sentence "Regulated activities means any activity carried on that is under the jurisdiction of the NRC under the Atomic Energy Act of 1954, as amended, or any title of the Energy Reorganization Act of 1972, as amended" appears in 10 CFR 19.3, substitute the sentence "Regulated activities means any activity carried on which is under the jurisdiction of the Iowa HHS under Iowa Code chapter 136C."

h. Where the sentence "Regulated entities means any individual, person, organization, or corporation that is subject to the regulatory jurisdiction of the NRC, including (but not limited to) an applicant for or holder of a standard design approval under subpart E of part 52 of this chapter or a standard design certification under subpart B of part 52 of this chapter" appears in 10 CFR 19.3, substitute the sentence "Regulated entities means any individual, person, organization, or corporation that is subject to the regulatory jurisdiction of Iowa HHS under Iowa Code chapter 136C."

i. In 10 CFR 19.11(a), the phrase "(except for a holder of an early site permit under subpart A of part 52 of this chapter, or a holder of a manufacturing license under subpart F of part 52 of this chapter)" is deleted and does not apply.

j. Where the sentence "Any notice of violation involving radiological working conditions, proposed imposition of civil penalty, or order issued pursuant to subpart B of part 2 of this chapter, and any response from the licensee" appears in 10 CFR Part 19.11(a)(4), substitute the sentence "Any notice of violation involving radiological working conditions, proposed imposition of civil penalty, or order issued by Iowa HHS, and any response from the licensee."

k. Where the words "the Act" appear in 10 CFR 19.16, substitute the words "Iowa Code chapter 136C."

l. Where the sentence "All persons who receive, possess, use, or transfer material licensed by the NRC under the regulations in parts 30 through 36, 39, 40, 60, 61, 63, 70, or 72 of this chapter, including persons licensed to operate a production or utilization facility under parts 50 or 52 of this chapter, persons licensed to possess power reactor spent fuel in an independent spent fuel storage installation (ISFSI) under part 72 of this chapter, and in accordance with 10 CFR 76.60 to persons required to obtain a certificate of compliance or an approved compliance plan under part 76 of this chapter" appears in 10 CFR Part 19.2(a)(1), substitute the sentence "All persons who receive, possess,

use, or transfer material licensed by Iowa HHS under the regulations in parts 30 through 36, 39, 40, or 70 of this chapter."

m. The Iowa form "Notice to Employees and Notice to Employees – Spanish" shall be posted in place of NRC Form 3 as specified in 10 CFR Part 19.

641—39.5(136C) Standards for protection against radiation. In addition to the rules of this chapter, RAM facilities shall comply with the requirements of 10 CFR Part 20, "Standards for Protections Against Radiation," unless specific exemptions apply.

39.5(1) The provisions of 10 CFR Part 20 are hereby adopted by reference and are subject to the following conditions:

a. Not adopted by reference are 10 CFR Part 20.1006, 20.1007, 20.1008, 20.1009, 20.1401(b), 20.1406(b), 20.1905(g), 20.2004(b)(1), 20.2201(a)(2)(i) and (b)(2)(i), 20.2202(d)(1), 20.2203(d), 20.2401, 20.2402, and Appendix D to Part 20.

b. Where the word "Commission" appears in 10 CFR 20.1002, 20.1003, 20.1204(c)(2), 20.1301(f), 20.1302(c), 20.1403(d) and (d)(1), 20.1404(a) and (a)(4), 20.1405, 20.1601(c), 20.1704, 20.1705, 20.1901(a), 20.2002, 20.2004(a)(3), 20.2102(b), 20.2103(b), 20.2104(f), 20.2105(b), 20.2106(f), 20.2107(b), 20.2108(b), 20.2201(e), 20.2202(c), 20.2204, 20.2205, 20.2301, 20.2302, and Appendix A to Part 20 (footnote c), substitute the words "Iowa HHS."

c. Where the words "under the Atomic Energy Act of 1954, as amended, and the Energy Reorganization Act of 1974, as amended" appear in 10 CFR Part 20.1001(a), substitute the words "under Iowa Code chapter 136C."

d. Where the words "Nuclear Regulatory Commission" appear in 10 CFR 20.1001(a), substitute the words "Iowa HHS."

e. Where the words "NRC Headquarters Operations Center by telephone at the numbers specified in appendix A to part 73 of this chapter" appear in 10 CFR 20.1906(d), substitute the words "Iowa HHS."

f. Where the words "Administrator of the appropriate NRC Regional Office listed in appendix D to part 20" appear in 10 CFR 20.2204, substitute the words "Iowa HHS."

g. Where the sentences "The criteria in this subpart apply to the decommissioning of facilities licensed under parts 30, 40, 50, 52, 60, 61, 63, 70, and 72 of this chapter, and release of part of a facility or site for unrestricted use in accordance with § 50.83 of this chapter, as well as other facilities subject to the Commission's jurisdiction under the Atomic Energy Act of 1954, as amended, and the Energy Reorganization Act of 1974, as amended. For high-level and low-level waste disposal facilities (10 CFR parts 60, 61, and 63), the criteria apply only to ancillary surface facilities that support radioactive waste disposal activities. The criteria do not apply to uranium and thorium recovery facilities already subject to appendix A to 10 CFR part 40 or the uranium solution extraction facilities" appear in 10 CFR Part 20.1401(a), substitute with the sentences "The criteria in this subpart apply to the decommissioning of facilities licensed under parts 30, 40, 61, and 70 of this chapter, as well as other facilities subject to Iowa HHS's jurisdiction under Iowa Code chapter 136C. For high-level and low-level waste disposal facilities (10 CFR parts 61), the criteria apply only to ancillary surface facilities that support radioactive waste disposal activities. The criteria do not apply to uranium and thorium recovery facilities already subject to appendix A to 10 CFR part 40 or the uranium solution extraction facilities."

h. The following are excluded from adoption by reference of 10 CFR Part 20:

(1) 10 CFR 20.1401(c): the phrase "or after part of a facility or site has been released for unrestricted use in accordance with § 50.83 of this chapter and in accordance with the criteria in this subpart";

(2) 10 CFR 20.1403(d) and 20.1404(a)(4): references to "50.82(a) and (b)" and "72.54";

(3) 10 CFR 20.1501(b): references to "50.75(g)" and "72.30(d)";

(4) 10 CFR 20.2106(d): the phrase "These records are protected by most State privacy laws and, when transferred to the NRC, are protected by the Privacy Act of 1974, Public Law 93-579, 5 U.S.C. 552a, and the Commission's regulations in 10 CFR part 9."

i. Reports required in 10 CFR 20.2201, 20.2202, 20.2203, 20.2204, 20.2205, and 20.2207 shall be submitted to Iowa HHS.

39.5(2) The following conditions apply to 10 CFR Part 20, Appendix G:

a. Where the words "Commission or Agreement State license" appear in 10 CFR Part 20 Appendix G Section I, substitute the words "Iowa HHS, U.S. Nuclear Regulatory Commission, or Agreement State license."

b. Where the word "Commission" appears in 10 CFR Part 20, Appendix G, Section II and Section III.D.2, substitute the words "Iowa HHS."

c. Where the words "Administrator of the nearest Commission Regional Office listed in appendix D of this part" appear in 10 CFR Part 20 Appendix G, Section III.B.8, Section III.C.11, and Section III.D.3, substitute the words "Iowa HHS."

d. Where the words "nearest Commission Regional Office listed in appendix D of this part" appear in 10 CFR Part 20 Appendix G Section III.E.2, substitute the words "Iowa HHS."

e. Where the words "appropriate NRC Regional Office" appear in 10 CFR Part 20 Appendix G Section III.E.2, substitute the words "Iowa HHS."

f. Where the sentence "Licensees are not required by NRC to comply with the manifesting requirements of this part when they ship" appears in 10 CFR Part 20 Appendix G Section I, substitute the sentence "Licensees are not required by Iowa HHS to comply with the manifesting requirements of this part when they ship."

641—39.6(136C) Rules of general applicability to licensing of byproduct material. In addition to the rules of this chapter, RAM facilities shall comply with the requirements of 10 CFR Part 30, "Rules of General Applicability to Domestic Licensing of Byproduct Material," unless specific exemptions apply.

39.6(1) *Adoption by reference—conditions.* The provisions of 10 CFR Part 30 are hereby adopted by reference and are subject to the following conditions:

a. Not adopted by reference are 10 CFR 30.3(b), (c), (d), 30.4 (definition of commencement of construction – paragraph 2), 30.4 (definition of "construction" – paragraph 9ii), 30.8, 30.11(c), 30.19, 30.21(c), 30.32(f), 30.33(a)(5), 30.34(d), (e)(1), (e)(3), (k), 30.41(b)(6), 30.55, 30.63, 30.64.

b. Where the word "NRC" appears in 10 CFR 30.10(a)(2), 30.35(a)(2),(b)(2),(h), 30.36(d)(4), (e)(2),(f), 30.50(a),(b), Appendix A, Appendix C, Appendix D, and Appendix E, substitute the words "Iowa HHS."

c. Where the word "Commission" appears in 10 CFR 30.5, 30.7(a), 30.7(a)(1)(i) and (iii) through (iv); 30.7(c) and (e)(2); 30.9; 30.10(a)(1); 30.10(c)(1); 30.31; 30.32; 30.34(a), (b)(1), (c), (e), and (f); 30.35(f)(2)(i) through (iii) and (g); 30.36(a) through (c), (f), (g)(1), (g)(2), (g)(5), and (k); 30.39 (where the word is the title); 30.41(b)(5), (7), and (c); 30.51(b) and (c)(1) through (2); 30.52(a) through (b); 30.53; 30.61(b); 30.62; and Appendices A, C, D, and E, substitute the words "Iowa HHS."

d. Where the words "General Counsel" appear in 10 CFR 30.5, substitute the words "Iowa HHS."

e. Where the words "NRC Regional Office specified in § 30.6" appear in 10 CFR 30.34(f), 30.51(d) through (f), substitute the words "Iowa HHS."

f. Where the words "NRC Regional Administrator" appear in 10 CFR 30.34(h)(1), substitute the words "Iowa HHS."

g. Where the words "appropriate NRC Regional Office" appear in 10 CFR 30.51(d) and (f), substitute the words "Iowa HHS."

h. For the purpose of this chapter, where 10 CFR Part 30.32 requires "NRC Form 313," licensees shall use "Iowa HHS Form 313."

i. For the purpose of this chapter, where 10 CFR Part 30.36(j)(1) requires "NRC Form 314," licensees shall use "Iowa HHS Form 314."

j. The Iowa HHS form "Notice to Employees and Notice to Employees – Spanish" shall be posted in place of NRC Form 3 as specified in 10 CFR 30.7(e).

k. In 10 CFR 30.3(a), the phrase "as provided in paragraphs (b)(2), (b)(3), (c)(2), and (c)(3) of this section" is deleted and does not apply.

l. In 10 CFR 30.7(e)(3), the phrase "writing to the Regional Administrator of the appropriate U.S. Nuclear Regulatory Commission Regional Office listed in appendix D to part 20 of this chapter, via email to *Forms.Resource@nrc.gov*, or by" is deleted and does not apply.

m. Where the words "Administrator of the appropriate Regional Office" appears in 10 CFR 30.9(b), substitute the words "Iowa HHS."

n. Where the sentence "Upon a determination that an application meets the requirements of the Act, and the regulations of the Commission, the Commission will issue a specific license authorizing the possession and use of byproduct material" appears in 10 CFR 30.33(b), substitute the sentence "Upon a determination that an application meets the requirements of Iowa Code 136C and the regulations of Iowa HHS, Iowa HHS will issue a specific license authorizing the possession and use of byproduct material."

o. Where the words "NRC operations center" appear in 10 CFR 30.32(i)(3)(viii), substitute the words "Iowa HHS."

p. Where the words "NRC Headquarters Operations Center at the numbers specified in appendix A to part 73 of this chapter" appear in 10 CFR 30.50(c)(1) and the words "NRC using an appropriate method listed in § 30.6(a)" appear in 10 CFR 30.50(c)(2), substitute the words "Iowa HHS."

q. In 10 CFR 30.50(c)(2), the phrase "and a copy must be sent to the appropriate NRC Regional office listed in appendix D to part 20 of this chapter" is deleted and does not apply.

r. Where the words "Commission under § 32.210 of this chapter, with an Agreement State" appear in 10 CFR 30.32(g), substitute in the words "Iowa HHS, the U.S. Nuclear Regulatory Commission under § 10 CFR 32.210 of this chapter, or with an Agreement State."

s. Where the words "Director, Office of Nuclear Material Safety and Safeguards" appear in 10 CFR 30.35(h)(3), substitute the word "Iowa HHS."

t. In 10 CFR 30.36(d), the phrase "consistent with the administrative directions" is deleted and does not apply.

u. Where the words "Atomic Energy Commission, the Commission, or an Agreement State" appear in 10 CFR 30.41(b)(5), substitute the words "Iowa HHS, the U.S. Nuclear Regulatory Commission, or with an Agreement State."

v. Where the words "Commission or an Agreement State" and "Commission or with an Agreement State" appear in 10 CFR 30.41(c), substitute the words "Iowa HHS, the U.S. Nuclear Regulatory Commission, or an Agreement State."

w. Where the words "Commission or the licensing department of an Agreement State" appears in 10 CFR 30.41(d)(4) and (d)(5), substitute the words "Iowa HHS, the U.S. Nuclear Regulatory Commission, or the licensing department of an Agreement State,"

x. Where the words "section 81 of the Act" appear in 10 CFR 30.13, 30.14, 30.15, 30.18, 30.19, 30.20, 30.21, and 30.22, substitute the words "Iowa Code chapter 136C."

y. Where the word "Act" appears in 10 CFR 30.32(d), 30.33(a)(1), 30.34(a), 30.34(b)(1), 30.34(e)(4), and 30.41(b)(2) and (b)(3), substitute the words "Iowa Code chapter 136C."

z. Where the words "section 183b.- d., inclusive, of the Act" appear in 10 CFR 30.34(d), substitute the words "Iowa Code chapter 136C."

aa. Where 10 CFR Part 30 references fees listed in 10 CFR parts 170 and 171, licensees shall comply with the fee requirements specified in rule 641—37.9(136C).

39.6(2) *Reciprocity—out-of-state radiation machines.*

a. Whenever any radiation machine is to be brought into the state for temporary use, the person proposing to bring such machine into the state shall:

(1) Use Iowa HHS Form 241;

(2) Submit the form to Iowa HHS at least three working days before such machine is to be used; and

(3) Submit the appropriate fee as specified in 641—subrule 37.9(4).

b. The form shall contain complete and accurate information and shall include all of the following:

(1) The type of radiation machine;

(2) The nature, duration, and scope of use;

(3) The exact location(s) where the radiation machine is to be used; and

(4) States in which the machine is registered.

c. If, for a specific case, the three-working-day period would impose an undue hardship on the person, upon application to the department, approval to proceed sooner may be granted.

d. Persons seeking to bring an out of state radiation machine into the state shall:

(1) Comply with all applicable rules of the department;

(2) Supply the department with information as the department may reasonably request; and

(3) Not operate within the state on a temporary basis in excess of 180 calendar days in a 365-day period. The 365-day period starts on the day the department receives the appropriate fee, as specified in 641—subrule 37.9(4), and ends at the conclusion of those 365 days. It is the registrant's responsibility to ensure the 180-day limit is not exceeded and to ensure that the reciprocal recognition is renewed 30 days prior to the expiration of the 365-day reciprocity period.

39.6(3) *Reciprocal recognition of licenses.*

a. Licenses of byproduct, source, and special nuclear material in quantities not sufficient to form a critical mass.

(1) Subject to the provisions set forth in this chapter, any person who holds a specific license from the Commission or an agreement state, and having jurisdiction in where the licensee maintains an office for directing the licensed activity and at which radiation safety records are normally maintained, is granted a general license to conduct the activities authorized in the licensing document issued by the department having jurisdiction within Iowa.

1. This general license shall be for a period not in excess of 180 days in a 365-day period. The one-year period starts on the day the licensee's reciprocity fee, as specified in 641—subrule 37.9(4) is received by the department and ends exactly 365 days later.

2. Licensees are responsible for ensuring they do not exceed the 180-day limit within the 365-day period and must apply for renewal 30 days prior to the expiration date of the 365-day reciprocal recognition period.

3. Out-of-state persons wishing to operate in the state in excess of 180 calendar days must obtain a full Iowa radioactive materials license.

(2) The licensing document issued by the department having jurisdiction, as referenced in subparagraph 39.6(3)*"a"*(1), cannot limit the activity authorized by the document to specified installations or locations.

(3) The out-of-state licensee shall notify the department in writing at least three working days prior to engaging in activities in the state.

1. The initial notification shall include all of the following:

A. The location of use;

B. The period of time for use;

C. The type of proposed possession and use within the state; and

D. A copy of the pertinent licensing document.

2. If, for a specific case, the three-day period would impose an undue hardship on the out-of-state licensee, the licensee may, upon application to the department, obtain permission to proceed with use sooner.

3. The department may waive the requirement for filing additional written notifications during the remainder of the 365-day reciprocity period following the receipt of the initial notification from a person wishing to engage in activities under the general license granted by subparagraph 39.6(3)*"a"*(1).

(4) The out-of-state licensee shall comply with all applicable rules of the department and with all the terms and conditions of the licensing document, with the exception of any terms and conditions that may be inconsistent with the applicable rules of this chapter.

(5) The out-of-state licensee shall supply other information upon the request of the department.

(6) The out-of-state licensee cannot transfer or dispose of radioactive material possessed or used under the general license granted by subrule 39.6(3), except by transfer to a person specifically licensed by the department, another agreement state, or the Commission to receive such material.

(7) Notwithstanding the provisions of this chapter, any person who holds a specific license issued by the Commission or an agreement state authorizing the holder to manufacture, transfer, install, or service a device described in 641—subrule 37.8(3) within areas subject to the jurisdiction of the licensing body is hereby granted a general license to install, transfer, demonstrate, or service such a device in this state provided that all of the following requirements are met:

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

2. The device has been manufactured, labeled, installed, and serviced in accordance with applicable provisions of the specific license issued to such person by the Commission or an agreement state;

3. Such person shall ensure that any labels required to be affixed to the device, under regulations of the authority that licensed manufacture of the device, bear a statement that "Removal of this label is prohibited";

4. The holder of the specific license shall furnish a copy of the general license contained in rule 641—37.8(136C), or in equivalent regulations of the department having jurisdiction over the manufacture and distribution of the device, to each general licensee to whom the holder transfers such device to or on whose premises the holder installs such device.

(8) The department may withdraw, limit, or qualify its acceptance of any specific license, equivalent licensing document issued by the Commission or an agreement state, or any product distributed pursuant to such licensing document upon determining that such action is necessary in order to prevent undue hazard to public health and safety or to property.

(9) Enforcement and revocation of industrial radiographer ID cards.

1. Any industrial radiographer who violates these rules shall be subject to formal enforcement action. The department may require the radiographer to appear at a formal hearing to show cause why the ID card should not be suspended or revoked.

2. When the department issues an order directing an industrial radiographer to cease and desist from the use of radioactive material, or suspending or revoking an ID card, the radiographer shall immediately surrender the ID card to the department. The ID card shall not be reissued until the order has been modified or rescinded or the period of suspension has expired.

3. An inspector of the department is authorized, with prior approval of the department, to confiscate an industrial radiographer's ID card during an inspection or investigation if the inspector determines that the radiographer's activities constitute a severity level of I, II, or III, as specified in rule 641—37.10(136C). Upon confiscation, the department shall transmit the ID card(s) to the issuing entity and notify the U.S. Nuclear Regulatory Commission and all applicable agreement states.

b. Licenses of naturally occurring or accelerator-produced radioactive material.

(1) Any person who holds a specific license from the Commission or an agreement state, and issued by the department for directing the licensed activity and at which radiation safety records are

normally maintained, is granted a general license to conduct the activities authorized in the licensing document issued by the department having jurisdiction within Iowa.

1. This general license shall be for a period not in excess of 180 days in a 365-day period. The one-year period starts on the day the licensee's reciprocity fee, as specified in 641—subrule 37.9(4), is received by the department and ends exactly 365 days later.

2. Licensees are responsible for ensuring they do not exceed the 180-day limit within the 365-day period and must apply for renewal 30 days prior to the expiration date of the 365-day reciprocal recognition period.

3. Out-of-state persons wishing to operate in the state in excess of 180 calendar days must obtain an Iowa radioactive materials license, which requires that the person have a permanent office in Iowa where records pertaining to licensed activities are maintained and where material can be stored. This office must have at least one full time employee and a telephone.

(2) The licensing document issued by the department having jurisdiction, as referenced in subparagraph 39.6(3)*"a"*(1), cannot limit the activity authorized by the document to specified installations or locations.

(3) The out-of-state licensee shall notify the department in writing at least three days prior to engaging in activities in the state.

1. The notification shall include all of the following:

A. The location of use;

B. The period of time for use;

C. The type of proposed possession and use within the state;

D. A copy of the pertinent licensing document;

2. If, for a specific case, the three-day period would impose an undue hardship on the out-of-state licensee, the licensee may, upon application to the department, obtain permission to proceed with use sooner.

3. The department may waive the requirement for filing additional written notifications during the remainder of the 365-day reciprocity period following the receipt of the initial notification from a person wishing to engage in activities under the general license granted by subparagraph 39.6(3)*"b"*(1).

(4) The out-of-state licensee shall comply with all applicable rules of the department and with all the terms and conditions of the licensing document, with the exception of any terms and conditions that may be inconsistent with the applicable rules of this chapter.

(5) The out-of-state licensee shall supply other information upon the request of at the department.

(6) The out-of-state licensee cannot transfer or dispose of radioactive material possessed or used under the general license granted by paragraph 39.6(3)*"b,"* except by transfer to a person who meets either of the following criteria:

1. The person is specifically licensed by the department, another agreement state, or the Commission to receive such material; or

2. The person is exempt from the requirements for a license for such material under Appendix E of this chapter.

(7) Notwithstanding the provisions of this chapter, any person who holds a specific license issued by the Commission or an agreement state authorizing the holder to manufacture, transfer, install, or service a device described in 10 CFR 31.5 within areas subject to the jurisdiction of the licensing body is granted a general license to install, transfer, demonstrate, or service such a device in this state provided that all of the following requirements are met:

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

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

3. Such person shall ensure that any labels required to be affixed to the device, under regulations of the authority that licensed manufacture of the device, bear a statement that "Removal of this label is prohibited";

4. The holder of the specific license shall furnish a copy of the general license contained in subparagraph 39.6(3)*"b"*(1), or in equivalent regulations of the department having jurisdiction over the manufacture and distribution of the device, to each general licensee to whom the holder transfers such device or on whose premises the holder installs such device.

(8) The department may withdraw, limit, or qualify its acceptance of any specific license or equivalent licensing document issued by the Commission or an agreement state, or any product distributed pursuant to such licensing document, upon determining that such action is necessary in order to prevent undue hazard to public health and safety or to property.

(9) The department may revoke or suspend an out-of-state radiographer's ID card issued by the Commission, a licensing state, or another agreement state in accordance with the provisions of 10 CFR 30.61.

641—39.7(136C) General domestic licenses for byproduct material.

39.7(1) In addition to the rules of this chapter, RAM facilities shall comply with the requirements of 10 CFR Part 31, "General Domestic Licenses for Byproduct Material," unless specific exemptions apply.

39.7(2) The provisions of 10 CFR Part 31 are hereby adopted by reference and are subject to the following conditions:

a. Not adopted by reference are 10 CFR 31.4, 31.22, and 31.23.

b. Where the word "NRC" appears in 10 CFR 31.5(c)(8)(iii), (c)(13)(ii), and (c)(13)(iv) and in 31.12(a)(5), (c)(1), (c)(2), (c)(4), and (c)(5), substitute the words "Iowa HHS."

c. Where the words "Nuclear Regulatory Commission" appear in 10 CFR 31.5(c)(11), substitute the words "Iowa HHS."

d. Where the word "Commission" appears in 10 CFR 31.5(c)(5)(first and third mention), (c)(13)(ii)(both mentions), (c)(13)(iii), and (c)(13)(iv); 10 CFR 31.8(c)(2) (second mention), 31.11(b)(1), and (d)(2)(second mention); and 10 CFR 31.21, substitute the words "Iowa HHS."

e. Where the words "Office of Nuclear Material Safety and Safeguards" appear in 10 CFR 31.5(c)(5), 31.5(c)(14), and 31.12(c)(1), substitute the words "Iowa HHS at 321 E. 12th Street Des Moines, IA 50319."

f. For the purpose of this chapter, where 10 CFR Part 31.11(b)(1) requires "NRC Form 483," licensees shall use "Iowa HHS Form 483."

641—39.8(136C) Specific domestic licenses to manufacture or transfer certain items containing byproduct material.

39.8(1) In addition to the rules of this chapter, RAM facilities shall comply with the requirements of 10 CFR Part 32, "Specific Domestic Licenses to Manufacture or Transfer Certain Items Containing Byproduct Material," unless specific exemptions apply.

39.8(2) The provisions of 10 CFR Part 32 are hereby adopted by reference and are subject to the following conditions:

a. Not adopted by reference are 10 CFR 32.1(c)(1), 32.2, 32.8, 32.11, 32.12, 32.13, 32.14, 32.15, 32.16, 32.18, 32.19, 32.20, 32.21, 32.21a, 32.22, 32.23, 32.25, 32.26, 32.27, 32.28, 32.29, 32.30, 32.31, 32.32, 32.74(c), 32.211, 32.301, and 32.303.

b. Where the word "NRC" appears in 10 CFR 32.51a(a)(5) and (b)(1) and 32.210(a) and (d)(all mentions), substitute the words "Iowa HHS."

c. Where the words "Agreement State" appear in 10 CFR 32.51(c), 32.51a(b), 32.51a(b)(1), 32.55(d), 32.56(b), 32.59, and 32.62(e), substitute the words "U.S. NRC or an Agreement State."

d. Where the words "to the NRC and to any appropriate Agreement State" appear in 10 CFR 32.51(c), 32.51a(b), 32.51a(b)(1), 32.55(d), 32.56(b), 32.59, and 32.62(e), substitute the words "to Iowa HHS, the NRC and to any appropriate Agreement State."

e. Where the words "U.S. NRC or an Agreement State" appear in 10 CFR 32.54(b)(2)(iv), substitute the words "HHS, NRC, or an Agreement State."

f. Where the words "Director, Office of Nuclear Material Safety and Safeguards, ATTN: GLTS, by an appropriate method listed in § 30.6(a) of this chapter" appear in 10 CFR 32.52(a) and 32.56(a), substitute the words "Iowa HHS."

g. Where the words "NRC's Office of Nuclear Material Safety and Safeguards, ATTN: SSDR by an appropriate method listed in § 30.6(a) of this chapter" appear in 10 CFR 32.210(b), substitute the words "Iowa HHS."

h. Where the words "US Nuclear Regulatory Commission" appear in 10 CFR 32.74(a)(3), substitute the words "Iowa HHS."

i. Where the words "Commission or an Agreement State" appear in 10 CFR 32.72(b)(5)(i) and (b)(5)(ii), substitute the words "Iowa HHS, Commission, or an Agreement State."

j. Where the word "Commission" appears in 10 CFR 32.3, 32.6(c)(1) and (e), 32.51(a)(3) and (b), 32.51a(c), 32.53(b)(6) and (d), 32.54(a) and (b) and (b)(2)(v), 32.57(b)(7) and (d), 32.61(b)(8) and (e), 32.72(b)(5), 32.74(b)(2), 32.210(e) and (h)(all mentions), substitute the words "Iowa HHS."

k. For the purpose of this chapter, where 10 CFR 32.11 requires "NRC Form 313," licensees shall use "Iowa HHS Form 313."

l. For the purpose of this chapter, where 10 CFR 32.52(a) requires "NRC Form 653," licensees shall use "Iowa HHS Form 653."

m. Where 10 CFR Part 30 references fees listed in 10 CFR Parts 170 and 171, licensees shall comply with the fee requirements specified in rule 641—37.9(136C).

641—39.9(136C) Specific domestic licenses of broad scope for byproduct material.

39.9(1) In addition to the rules of this chapter, RAM facilities shall comply with the requirements of 10 CFR Part 33, "Specific Domestic Licenses of Broad Scope for Byproduct Material," unless specific exemptions apply.

39.9(2) The provisions of 10 CFR Part 33 are hereby adopted by reference and are subject to the following conditions:

a. Not adopted by reference are 10 CFR 33.8, 33.21, and 33.23.

b. Where the word "Commission" appears in 10 CFR 33.16 and 33.17(a)(3), substitute the words "Iowa HHS."

c. For the purpose of this chapter, where 10 CFR 33.8 and 33.12 require "NRC Form 313," licensees shall use "Iowa HHS Form 313."

d. Where 10 CFR Part 30 references fees listed in 10 CFR Parts 170 and 171, licensees shall comply with the fee requirements specified in rule 641—37.9(136C).

641—39.10(136C) Licenses for industrial radiography and radiation safety requirements for industrial radiographic operations. In addition to the rules of this chapter, RAM facilities shall comply with the requirements of 10 CFR Part 34, "Licenses for Industrial Radiography and Radiation Safety Requirements for Industrial Radiographic Operations," unless specific exemptions apply.

39.10(1) *Adoption by reference—conditions.* The provisions of 10 CFR Part 34 are hereby adopted by reference and are subject to the following conditions:

a. Not adopted by reference are 10 CFR 34.5, 34.8, 34.11, 34.41(b), 34.41(c), and 34.121.

b. Where the word "NRC" appears in 10 CFR 34.42(c)(1), 34.42(d), 34.43(b)(1)(both mentions) and (c)(1)(both mentions), and 34.89(b)(2), substitute the words "Iowa HHS."

c. Where the words "NRC or an Agreement State" appear in 10 CFR 34.27(a), substitute the words "Iowa HHS, NRC, or an Agreement State."

d. Where the words "Director, Office of Nuclear Material Safety and Safeguards by appropriate methods listed in 30.6(a) of this chapter" appear in 10 CFR 34.27(d) and 34.43(a)(1), substitute the words "Iowa HHS."

e. In 10 CFR 34.27(d), the sentence "A copy of the report must be sent to the Administrator of the appropriate Nuclear Regulatory Commission's Regional Office listed in appendix D of 10 CFR part 20 of this chapter "Standards for Protection Against Radiation"" is deleted and does not apply.

f. Where the word "Commission" appears in 10 CFR 34.3, 34.20(a)(2), 34.27(d), 34.41(b), 34.42(b), 34.43(a)(2) and (e) and (e)(3), 34.61(both mentions), 34.81, 34.83(c) and (d), 34.111, and Appendix A, substitute the words "Iowa HHS."

g. Where the words "Commission or an Agreement State" appear in 10 CFR 34.27(b) and (c)(both mentions) and (e) and 34.41(c), substitute the words "Iowa HHS, NRC, or an Agreement State."

h. Where the words "NRC's office of Nuclear Material Safety and Safeguards" and "NRC regional office" appear in 10 CFR 34.101, substitute the words "Iowa Health and Human Services – Bureau of Radiological Health, 321 E 12th Street, Des Moines, Iowa 50319."

i. Where the words "When operating under reciprocity pursuant to 150.20 of this chapter, a copy of the Agreement State license authorizing the use of licensed materials" appears in 10 CFR 34.89(b)(12), substitute the words "When operating under reciprocity pursuant to 150.20 of this chapter, a copy of the NRC or Agreement State license authorizing the use of licensed materials."

j. For the purpose of this chapter, where 10 CFR 34.8 and 34.11 require "NRC Form 313," licensees shall use "Iowa HHS Form 313."

k. Where 10 CFR Part 30 references fees listed in 10 CFR Parts 170 and 171, licensees shall comply with the fee requirements specified in rule 641—37.9(136C).

39.10(2) *General requirements for use of radiation machines in industrial radiography.* The requirements of this subrule are in addition to, and not in substitution for, other applicable requirements of 10 CFR 34, 641—Chapter 37, and this chapter. These rules apply to all licensees or registrants who use radiation for industrial or nonhuman purposes.

a. Exemptions.

(1) Uses of certified and certifiable cabinet X-ray systems designed to exclude individuals are exempt from the requirements of this chapter, except for the requirements of subparagraphs 39.10(2) *"e"*(2) and *"f"*(3).

(2) Radiation machines determined by the agency to constitute a minimal threat to human health and safety in accordance with 641—subrule 37.3(1) are exempt from the rules in this chapter, except for the requirements of this subrule.

b. Receipt, transfer, and disposal of sources of radiation. Each registrant shall maintain records showing the receipt, transfer, and disposal of machine-produced sources of radiation.

(1) These records shall include all of the following:

1. The date;
2. The name of the individual making the record; and
3. The make, model, and serial number of each source of radiation and device, as appropriate.

(2) Records shall be maintained for three years after they are made.

c. Radiation survey instruments.

(1) The licensee or registrant shall maintain sufficient calibrated and operable radiation survey instruments at each location where sources of radiation are present to make physical radiation surveys as required by this chapter and 641—subrule 37.11(13). Instrumentation required by this subrule shall have a range such that two millirems (0.02 millisievert) per hour through one rem (0.01 sievert) per hour can be measured.

(2) Notwithstanding the requirements of 641—paragraph 37.11(13)*"c,"* each radiation survey instrument shall be calibrated:

1. At energies appropriate for use and at intervals not to exceed six months and after each instrument servicing;

2. Such that accuracy within plus or minus 20 percent of the calibration source can be demonstrated at each point checked;

3. At 2 points located approximately 1/3 and 2/3 of full-scale on each scale for linear scale instruments; at midrange of each decade, and at 2 points of at least 1 decade for logarithmic scale instruments; and at 3 points between 2 and 1,000 mrem per hour for digital instruments; and

4. By a person licensed or registered by the agency, another agreement state, or the Commission to perform such service.

(3) Records of these calibrations shall be maintained for three years after the calibration date for inspection by the agency.

(4) Each radiation survey instrument shall be checked with a radiation source at the beginning of each day of use and at the beginning of each work shift to ensure it is operating properly.

d. Utilization logs.

(1) Each registrant shall maintain current logs of the use of each source of radiation. The logs shall include all of the following:

1. A unique identification, which includes the make, model and serial number of each source of radiation;

2. The identity of the radiographer using the source of radiation;

3. The date(s) each source of radiation is energized or used and the number of exposures made.

(2) Utilization logs must be kept on clear, legible records containing all the information required by this chapter. Copies of utilization logs shall be maintained for agency inspection for three years from the date of the recorded event. The records shall be kept at the location specified by the license or certificate of registration.

e. Inspection and maintenance.

(1) Each registrant shall perform visual and operability checks on survey meters, radiation machines and associated equipment before use on each day that the components are to be used to ensure that the components are in good working condition and that required labeling is present. Survey instrument operability must be performed using check sources or other appropriate means.

(2) Each registrant shall have written procedures and conduct a program at intervals not to exceed three months, or prior to the first use thereafter, of inspection and maintenance of radiation machines, survey instruments, and associated equipment to ensure proper functioning of components important to safety.

1. All appropriate parts shall be maintained in accordance with manufacturer's specifications.

2. Replacement components shall meet design specifications.

3. This program shall cover, as a minimum, the items in Appendix F of this chapter.

(3) If equipment defects or issues are found, the equipment must be removed from service until repaired.

(4) A record of equipment defects or issues and of any maintenance performed under the requirements of this chapter must be retained for three years after the record is made. The record must include all of the following:

1. The date of check or inspection;

2. The name of the inspector;

3. The specific equipment involved;

4. Any problems found; and

5. What repair or maintenance was performed, if any.

f. Permanent radiographic installations. Permanent radiographic installations having high radiation area entrance controls of the type described in 641—subparagraphs 37.11(15)*"a"*(2) and *"a"*(3) shall also meet all of the following requirements:

(1) Each entrance that is used for personnel access to the high radiation area shall have both visible and audible warning signals to warn of the presence of radiation.

1. The visible signal shall be activated by radiation.

2. The audible signal shall be activated when an attempt is made to enter the installation while the source is exposed.

(2) The control device or alarm system shall be tested for proper operation at the beginning of each day of equipment use.

1. If a control device or alarm system is operating improperly, it shall be immediately labeled as defective and repaired before industrial radiographic operations are resumed.

2. Records of these tests shall be maintained for inspection by the agency for three years from the date of the event.

g. Training and testing for radiographic personnel.

(1) Radiographer's assistant requirements. No registrant shall permit any individual to act as a radiographer's assistant, as defined in this chapter, until it has been documented on the appropriate agency form or equivalent that such individual has received copies of, and has demonstrated an understanding of, the following:

1. The subjects outlined in Appendix A;

2. The rules contained in this chapter and the applicable sections of 641—Chapter 37.

3. The appropriate conditions of certificate(s) of registration;

4. The registrant's operating and emergency procedures;

5. A developed competence to use, under the personal supervision of the radiographer, the registrant's radiation machine and radiation survey instruments that the assistant will use;

(2) Radiographer requirements. No registrant shall permit any individual to act as a radiographer until it has been documented to the agency that such individual has:

1. Completed the requirements of numbered paragraph 39.10(2)*"g"*(4);

2. Completed on-the-job training as a radiographic trainee supervised by one or more radiographic trainers. The on-the-job training shall be documented on the appropriate agency form or equivalent and shall include a minimum of one month (160 hours) of active participation in the performance of industrial radiography utilizing radiation machines. Active participation does not include safety meetings or classroom training;

3. Demonstrated competence in the use of radiation machines and radiation survey instruments that may be employed in industrial radiographic assignments by successful completion of a practical examination covering this material;

4. Completed, within the last five years, an appropriate examination and possesses a current ID card.

(3) Radiographer trainer. No individual shall act as a radiographer trainer unless such individual:

1. Has met the requirements of subparagraph 39.10(2)*"g"*(1) and numbered paragraph 39.10(2)*"g"*(2)"2";

2. Has one year of documented experience as an industrial radiographer and possesses a current ID card issued at least one year prior to acting as a trainer; and

3. Is named on the certificate of registration issued by the agency and under which an individual is acting as a radiographer trainer.

(4) Radiation safety officer (RSO). The RSO, as defined in rule 641—37.2(136C), shall ensure that radiation safety activities are being performed in accordance with approved procedures and regulatory requirements in the daily operation of the registrant's program.

1. An RSO shall be designated for every certificate of registration issued by the agency.

2. The RSO's qualifications shall include the following:

A. Possession of a high school diploma or a certificate of high school equivalency based on the GED tests;

B. Completion of the training and testing requirements of subparagraphs 39.10(2)*"g"*(1), *"g"*(3), and *"g"*(4).

C. Formal training in the establishment and maintenance of a radiation protection program.

D. The agency will consider alternatives when the RSO has either appropriate training or experience, or both, in the field of ionizing radiation and, in addition, has adequate formal training with respect to the establishment and maintenance of a radiation safety protection program.

3. The specific duties of the RSO include but are not limited to the following:

A. To establish and oversee operating, emergency, and ALARA procedures and to review them regularly to ensure that the procedures are current and conform with these rules;

B. To oversee and approve all phases of the training program for radiographic personnel so that appropriate and effective radiation protection practices are taught;

C. To ensure that required radiation surveys are performed and documented in accordance with these rules, including any corrective measures when levels of radiation exceed established limits;

D. To ensure that personnel monitoring devices are calibrated and used properly by occupationally exposed personnel, that records are kept of the monitoring results, and that timely notifications are made as required by rule 641—37.11(136C);

E. To ensure that any required interlock switches and warning signals are functioning and that radiation signs, ropes, and barriers are properly posted and positioned;

F. To investigate and report to the agency each known or suspected case of radiation exposure to an individual or radiation level detected in excess of limits established by these rules, and each theft or loss of source(s) of radiation, to determine the cause, and to take steps to prevent its recurrence;

G. To have a thorough knowledge of management policies and administrative procedures of the registrant;

H. To assume control and have the authority to institute corrective actions, including shutdown of operations when necessary in emergency situations or unsafe conditions;

I. To maintain records as required by these rules (Appendix C contains more information);

J. To ensure the proper storing, labeling, transport, and use of sources of radiation;

K. To ensure that quarterly inventory and inspection and maintenance programs are performed in accordance with the requirements of this chapter;

L. To ensure that personnel are complying with these rules, the conditions of the registration, and the operating and emergency procedures of the registrant; and

M. To ensure that annual refresher safety training has been provided for each radiographer and radiographer's assistant at intervals not to exceed 12 months.

(5) Training and testing records. Each registrant shall maintain, for agency inspection, training and testing records that demonstrate that the applicable requirements of subparagraphs 39.10(2)*"g"*(1) and *"g"*(2) are met.

1. Records of training for all industrial radiographic personnel must include all of the following:

A. Personnel certification documents and verification of certification status;

B. Copies of written tests;

C. Dates of oral and practical examinations; and

D. The names of individuals conducting and receiving the oral and practical examinations.

2. Records of annual refresher training and semiannual inspection of job performance for all industrial radiographic personnel must include all of the following:

A. The topics discussed during the refresher safety training;

B. The dates the annual refresher safety training was conducted; and

C. The names of the instructors and attendees.

3. For inspections of job performance, the records must also include a list showing the items checked and any noncompliance observed by the RSO.

4. Records shall be maintained until disposal is authorized by the agency. The agency cannot release records for disposal unless the records have been maintained at least three years.

(6) Reciprocity.

1. Reciprocal recognition by the agency of an individual radiographer certification will be granted provided that all of the following conditions are met:

A. The individual holds a valid certification in the appropriate category and class issued by a certifying entity as defined in this chapter;

B. The requirements and procedures of the certifying entity issuing the certification require the same or comparable certification standards as those required by subparagraphs 39.10(2)*"g"*(1) through *"g"*(5); and

C. The individual submits a legible copy of the certification to the agency prior to entry into Iowa.

2. Enforcement actions with the agency, another agreement state, or the Commission or any sanctions by an independent certifying entity may be considered when reviewing a request for reciprocal recognition from a licensee, registrant, or certified radiographer.

3. Certified radiographers who are granted reciprocity by the agency shall maintain the certification upon which the reciprocal recognition was granted or, prior to the expiration of such certification, shall meet the requirements of subparagraph 39.10(2)*"g"*(2).

h. Internal audits.

(1) The RSO or designee shall conduct an inspection program of the job performance of each radiographer and radiographer's assistant to ensure that these rules and the registrant's operating and emergency procedures are followed. The inspection program must:

1. Include observation of the performance of each radiographer and radiographer's assistant during an actual industrial radiographic operation, at intervals not to exceed six months; and

2. Provide that, if a radiographer or radiographer's assistant has not participated in an industrial radiographic operation for more than six months since the last audit, the radiographer or radiographer's assistant must demonstrate understanding of the subjects contained in Appendix A of this chapter by a practical examination before the individual can participate in a radiographic operation.

(2) When a single individual serves as both radiographer and RSO and performs all radiography operations, an inspection program is not required. Alternatives shall be submitted and approved by the department in these situations.

(3) Records of audits shall be maintained by the licensee or registrant for agency inspection for three years from the date of the audit.

i. Personnel monitoring control.

(1) The personnel monitoring program shall meet the applicable requirements of rule 641—37.11(136C).

(2) Records of pocket dosimeter readings of personnel exposures and yearly operability checks required in 10 CFR 34.47(c) shall be maintained for three years by the licensee or registrant for agency inspection.

1. If the dosimeter readings were used to determine external radiation dose (i.e., no TLD or film badge exposure records exist), the records shall be maintained for three years after they are recorded.

2. Records of estimates of exposures as a result of off-scale personal direct reading dosimeters, or lost or damaged film badges, OSLs, or TLDs, shall be maintained until the agency terminates the license.

(3) Reports received from the film badge, OSL device or TLD processor shall be kept for inspection by the agency until the agency terminates the license.

j. Access control. During each industrial radiographic operation, a radiographer or radiographer's assistant shall maintain continuous, direct visual surveillance of the operation to protect against unauthorized entry into a restricted area, radiation area, or high radiation area, except at permanent radiographic installations where all entryways are locked to protect against unauthorized or accidental entry and the requirements of paragraph 39.10(2)*"f"* are met.

k. Posting.

(1) Notwithstanding any provisions in 641—subrule 37.11(21), areas in which radiography is being performed shall be conspicuously posted as required by 641—paragraphs 37.11(20)*"a"* and *"b."*

(2) Whenever practicable, ropes or barriers shall be used in addition to appropriate signs to designate areas in accordance with 641—subrule 37.11(20) and to help prevent unauthorized entry.

(3) Notwithstanding the requirements of subparagraph 39.10(2)*"k"*(1), a restricted area may be established in accordance with 641—subrule 37.11(20) and may be posted in accordance with 641—paragraphs 37.11(20)*"a"* and *"b,"* i.e., both signs may be posted at the same location at the boundary of the restricted area.

l. Temporary job site requirements. Each registrant conducting industrial radiography at a temporary job site shall have the following records available at that site for inspection by the department:

(1) Appropriate certificate of registration or equivalent document;

(2) The appropriate operating and emergency procedures;

(3) The applicable agency rules; and

(4) Survey records required pursuant to subparagraph 39.10(3)*"e"*(4) for the period of operation at the site.

m. Notifications.

(1) The agency shall be notified of thefts or losses of sources of radiation, overexposures, and excessive levels in accordance with 641—subrule 37.13(1) and 10 CFR 20.2203.

(2) Each registrant shall submit a written report within 30 days to the department whenever one of the following events occurs:

1. An indicator on a radiation-producing machine fails to show that radiation is being produced; and

2. An exposure switch fails to terminate production of radiation when turned to the off position.

(3) The licensee or registrant shall include the following information in each report submitted in accordance with 10 CFR 34.101 and 641—subrule 37.13(4):

1. The licensee or registrant name and license or registration number;

2. The name of the prescribing physician, if applicable;

3. A description of the event, including:

A. The probable cause;

B. The manufacturer and model number (if applicable) of any equipment that failed or malfunctioned;

4. The exact location of the event;

5. The date and time of the event;

6. The isotopes, quantities, and chemical and physical form of the licensed material involved;

7. Corrective actions taken or planned to prevent recurrence and the results of any evaluations or assessments;

8. The extent of exposure of individuals to radiation or to radioactive materials, without identification of individuals by name, and the effect, if any, on the individual(s) who received the administration or exposure; and

9. Certification that the licensee or registrant notified the individual or the individual's responsible relative or legal guardian and the referring physician in compliance with the requirements of this chapter and, if not, why not.

n. Copies of operating and emergency procedures. Each registrant shall maintain a copy of current operating and emergency procedures until the agency terminates the license. Superseded material must be retained for three years.

39.10(3) *Radiation safety requirements for the use of radiation machines in industrial radiography.* The requirements of this subrule are in addition to, and not in substitution for, other applicable requirements of 10 CFR 34, 641—Chapter 37, and this chapter. These rules apply to all licensees or registrants who use radiation for industrial or nonhuman purposes.

a. Locking of sources of radiation. The control panel of each radiation machine shall be equipped with a locking device that will prevent the unauthorized use of an X-ray system or the

accidental production of radiation. The radiation machine shall be kept locked and the key removed at all times, except when under the direct visual surveillance of a radiographer.

b. Permanent storage precautions. Radiation machines shall be secured while in storage to prevent tampering or removal by unauthorized individuals.

c. Requirements for radiation machines used in industrial radiographic operations.

(1) Equipment used in industrial radiographic operations involving radiation machines manufactured after January 1, 1992, shall be certified at the time of manufacture to meet the criteria set forth by ANSI N537-1976.

(2) The registrant's name and city or town where the main business office is located shall be prominently displayed with a durable, clearly visible label(s) on all vehicles used to transport radiation machines for temporary job site use.

d. Operating and emergency procedures.

(1) The registrant's operating and emergency procedures shall include instructions in, at a minimum, the following:

1. Operation and safety instruction on the radiation machine(s) to be used;
2. Methods and occasions for conducting radiation surveys;
3. Methods for controlling access to radiographic areas;
4. Methods and occasions for locking and securing sources of radiation;
5. Personnel monitoring and the use of personnel monitoring equipment, including steps that must be taken immediately by radiography personnel in the event a pocket dosimeter is found to be off-scale;
6. Minimizing exposure of individuals in the event of an accident;
7. The procedure for notifying proper personnel in the event of an accident;
8. Maintenance of records; and
9. Inspection and maintenance of radiation machines.

(2) Each registrant shall provide, as a minimum, two radiographic personnel when radiation machines are used for any industrial radiography conducted other than at a permanent radiographic installation (shielded room, bay, or bunker). If one of the personnel is a radiographer's assistant, the other shall be a radiographer trainer authorized by the certificate of registration.

(3) No individual other than a radiographer or a radiographer's assistant who is under the direct supervision of a radiographer trainer shall manipulate controls or operate equipment used in industrial radiographic operations.

e. Radiation surveys and survey records.

(1) No radiographic operation shall be conducted unless calibrated and operable radiation survey instrumentation, as described in paragraph 39.10(2)*"c,"* is available and used at each site where radiographic exposures are made.

(2) A physical radiation survey shall be made after each radiographic exposure using radiation machines to determine that the machine is off.

(3) All potential radiation areas where industrial radiographic operations are to be performed shall be posted in accordance with paragraph 39.10(2)*"c,"* based on calculated dose rates, before industrial radiographic operations begin. An area survey shall be performed during the first radiographic exposure to confirm that paragraph 39.10(2)*"c"* requirements have been met and that unrestricted areas do not have radiation levels in excess of the limits specified in 641—subparagraph 37.11(11)*"a"*(1).

(4) Records shall be kept of the surveys required by subparagraphs 39.10(3)*"e"*(1) and *"e"*(2). Such records shall be maintained for inspection by the agency for three years after completion of the survey. If the survey was used to determine an individual's exposure, however, the records of the survey shall be maintained until the agency authorizes their disposition.

f. Special requirements and exemptions for enclosed radiography.

(1) Systems for enclosed radiography, including shielded-room radiography and cabinet radiography, designed to allow admittance of individuals shall:

1. Comply with all applicable requirements of this chapter and 641—subparagraph 37.11(11) *"a"*(1). If such a system is a certified cabinet X-ray system, it shall comply with all applicable requirements of this chapter and 21 CFR 1020.40.

2. Be evaluated at intervals not to exceed one year to ensure compliance with the applicable requirements as specified in 641—subparagraph 37.11(11)*"a"*(1). Records of these evaluations shall be maintained for inspection by the agency for a period of three years after the evaluation.

(2) Certified and certifiable cabinet X-ray systems are exempt from the requirements of this chapter, except for the following:

1. Operating personnel must be provided with individual monitoring devices in accordance with the appropriate provisions of 641—subrule 37.11(14);

2. No registrant shall permit any individual to operate a cabinet X-ray system until such individual has received a copy of, and instruction in, the operating procedures for the unit and has demonstrated competence in its use. Records that demonstrate compliance with this subparagraph shall be maintained for inspection by the agency until disposition is authorized by the agency.

3. Tests for proper operation of interlocks used to control entry to the high radiation area or alarm systems, where applicable, shall be conducted and recorded every three months. Records of these tests shall be maintained for agency inspection until disposal is authorized by the agency.

4. The registrant shall perform an evaluation, at intervals not to exceed one year, to determine conformance with 641—subparagraph 37.11(11)*"a"*(1).

A. If such a system is a certified cabinet X-ray system, it shall be evaluated at intervals not to exceed one year to determine conformance with 21 CFR 1020.40.

B. Records of these evaluations shall be maintained for inspection by the agency for a period of three years after the evaluation.

(3) Certified cabinet X-ray systems shall be maintained in compliance with 21 CFR 1020.40 unless prior approval has been granted by the agency pursuant to 641—subrule 37.3(1).

g. Registration for industrial radiographic operations.

(1) No person shall receive, possess, use, transfer, own, or acquire an analytical X-ray device, except as authorized by a registration issued in accordance with rule 641—37.8(136C).

(2) Each industrial radiography device shall be registered in accordance with the requirements of 641—subrule 37.8(2).

(3) In addition to the registration requirements of 641—subrule 37.8(2), an application for a certificate of registration shall include all of the following information:

1. A schedule or description of the program for training radiographic personnel that specifies:

A. Initial training,

B. Periodic training,

C. On-the-job training, and

D. Methods to be used by the registrant to determine the knowledge, understanding, and ability of radiographic personnel to comply with agency rules, registration requirements, and the operating and emergency procedures of the applicant.

2. Written operating and emergency procedures, including all items listed in Appendix B.

3. A description of the internal inspection system or other management control to ensure that radiographic personnel follow registration provisions, rules of the agency, and the applicant's operating and emergency procedures.

4. A list of permanent radiographic installations and descriptions of permanent storage and use locations.

5. A description of the organization of the industrial radiographic program, including delegations of authority and responsibility for operation of the radiation safety program.

(4) A certificate of registration will be issued if the requirements of rule 641—37.8(136C) and this subrule are met.

641—39.11(136C) Medical use of byproduct material.

39.11(1) In addition to the rules of this chapter, RAM facilities shall comply with the requirements of 10 CFR Part 35, "Medical Use of Byproduct Material," unless specific exemptions apply.

39.11(2) The provisions of 10 CFR Part 35 are hereby adopted by reference and are subject to the following conditions:

a. Not adopted by reference are 10 CFR 35.8, 35.10, 35.11(c)(1), 35.11(c)(2), 35.13(a)(1), 35.13(a)(2), 35.13(b)(5), 35.4001, and 35.4002.

b. Where the word "NRC" appears in 10 CFR 35.6(c), 35.13(b)(4)(i), 35.57(c), 35.3045(g), 35.3047(f)(1), and 35.3204(a), substitute the words "Iowa HHS."

c. Where the words "NRC Operations Center" appear in 10 CFR 35.3045(c), 35.3047(c), and 35.3204(a), substitute the words "Iowa HHS."

d. Where the words "The commercial telephone number of the NRC Operations Center is (301) 816–5100" appear in the footnote of 10 CFR 35.3045, substitute the words "The 24-hour emergency phone number of Iowa HHS is 515-725-4160."

e. Where the words "appropriate NRC Regional Office listed in § 30.6 of this chapter" appear in 10 CFR 35.3045(d), 35.3047(d), 35.3067, and 35.3204(b), substitute the words "Iowa HHS."

f. In 10 CFR 35.3067, the phrase "with a copy to the Director, Office of Nuclear Material Safety and Safeguards" is deleted and does not apply.

g. Where the word "Commission" appears in 10 CFR 35.5, 35.12(d)(4), 35.14(a) and (b), 35.18, 35.19, 35.24, 35.26, and 35.1000, substitute the words "Iowa HHS."

h. Where the words "Commission or an Agreement State" appears in 10 CFR 35.2, 35.11, 35.13, 35.14, 35.50, 35.51, 35.55, 35.57, 35.67, 35.190, 35.290, 35.390, 35.392, 35.394, 35.396, 35.433, 35.490, 35.590, 35.605, 35.655, and 35.690, substitute the words "Iowa HHS, NRC, or an Agreement State."

i. For the purpose of this chapter, where 10 CFR 35.8 requires "NRC Form 313, including NRC Form 313A" licensees shall use "Iowa HHS Form 313, including Iowa HHS Form 313A."

j. For the purpose of this chapter, where 10 CFR 35.12(b)(1), 35.12(c)(1)(i), 35.12(c)(1)(ii), and 35.18(a)(1) require "NRC Form 313," licensees shall use "Iowa HHS Form 313A."

k. Where 10 CFR Part 35 references fees listed in 10 CFR Parts 170 and 171, licensees shall comply with the fee requirements specified in rule 641—37.9(136C).

641—39.12(136C) Licenses and radiation safety requirements for irradiators.

39.12(1) In addition to the rules of this chapter, RAM facilities shall comply with the requirements of 10 CFR Part 36, "Licenses and Radiation Safety Requirements for Irradiators," unless specific exemptions apply.

39.12(2) The provisions of 10 CFR Part 36 are hereby adopted by reference and are subject to the following conditions:

a. Not adopted by reference are 10 CFR 36.2, paragraph (2) of the definition of commencement of construction, along with 10 CFR 36.5, 36.8, 36.91, and 36.93.

b. Where the sentence "The application and one copy must be sent to the appropriate NRC Regional Office listed in appendix D to part 20 of this chapter" appears in 10 CFR 36.11, substitute the phrase "Application must be sent to Iowa HHS."

c. Where the word "NRC" appears in 10 CFR 36.15, 36.51(a)(1) and (a)(2), and 36.83(a)(both mentions), substitute the words "Iowa HHS."

d. Where the words "Any activities undertaken prior to the issuance of a license are entirely at the risk of the applicant and have no bearing on the issuance of a license with respect to the requirements of the Atomic Energy Act of 1954 (Act), as amended, and rules, regulations, and orders issued under the Act" appear in 10 CFR 36.15, substitute the words "Any activities undertaken prior to the issuance are entirely at the risk of the applicant and have no bearing on the issuance of a license by Iowa HHS."

e. Where the words "NRC or an Agreement State" appear in 10 CFR 36.59(c), substitute the words "Iowa HHS, NRC, or an Agreement State."

f. Where the word "Commission" appears in 10 CFR 36.13, 36.13(b)(4) and (f), 36.17(a) and (b), 36.19(a)(both mentions) and (b)(both mentions), 36.53(c), 36.69(a) and (b), and 36.81(a) and (d) and (e), substitute the words "Iowa HHS."

g. Where the words "Commission or an Agreement State" appear in 10 CFR 36.13(g) and 10 CFR 36.59(a)(both mentions), substitute the words "Iowa HHS, NRC, or an Agreement State."

h. For the purpose of this chapter, where 10 CFR 36.8(c)(1) and 36.11 requires "NRC Form 313," licensees shall use "Iowa HHS Form 313."

i. Where 10 CFR Part 36 references fees listed in 10 CFR Parts 170 and 171, licensees shall comply with the fee requirements specified in rule 641—37.9(136C).

641—39.13(136C) Physical protection of category 1 and category 2 quantities of radioactive material.

39.13(1) In addition to the rules of this chapter, RAM facilities shall comply with the requirements of 10 CFR Part 37, "Physical Protection of Category 1 and Category 2 Quantities of Radioactive Material," unless specific exemptions apply.

39.13(2) The provisions of 10 CFR Part 37 are hereby adopted by reference and are subject to the following conditions:

a. Not adopted by reference are 10 CFR 37.7, 37.9, 37.11(b), 37.13, 37.107, and 37.109.

b. Where the word "NRC" appears in 10 CFR 37.31(d), 37.43(c)(3)(iii), 37.57(a), 37.57(c), 37.77(except "the NRC's Web site" in 37.77(a)(1)), substitute the words "Iowa HHS."

c. Where the word "Commission" appears in 10 CFR 37.5(definition of "person"), 37.11(a), 37.43(a)(3), 37.43(c)(1)(ii), 37.101, 37.103, and 37.105, substitute the words "Iowa HHS."

d. Where the words "Commission or an Agreement State" appear in 10 CFR 37.71 and 10 CFR 37.77(f), substitute the words "Iowa HHS, NRC, or an Agreement State."

e. Where the words "Director, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001, ATTN: Source Management and Protection Branch" appear in 10 CFR 37.23(b)(2), substitute the words "Iowa HHS."

f. Where the words "NRC regional office" appear in 10 CFR 37.41(a)(3) and 37.81, substitute the words "Iowa HHS."

g. Where the words "appropriate NRC regional office listed in § 30.6(a)(2) of this chapter" appear in 10 CFR 37.45(b), substitute the words "Iowa HHS."

h. Where the words "NRC's Operational Center (301-816-5100)" appear in 10 CFR 37.57(a), 37.57(b), and 37.81, substitute the words "Bureau of Radiological Health and Human Services (515-725-4160)."

i. Where the words "NRC's Director, Office of Nuclear Security and Incident Response, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001. The notification to the NRC may be made by email to RAMQC_SHIPMENTS@nrc.gov or by fax to 301-816-5151" appear in 10 CFR 37.77(a)(1), substitute the words "Iowa HHS."

j. Where the words "NRC's Director, Office of Nuclear Security and Incident Response, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001" appear in 10 CFR 37.77(c)(1), 37.77(c)(2), and 37.77(d), substitute the words "Iowa HHS."

k. Where the words "NRC by an appropriate method listed in 10 CFR § 37.7" appear in 10 CFR 37.81(g), substitute the words "Iowa HHS."

641—39.14(136C) Licenses and radiation safety requirements for well logging.

39.14(1) In addition to the rules of this chapter, RAM facilities shall comply with the requirements of 10 CFR Part 39, "Licenses and Radiation Safety Requirements for Well Logging," unless specific exemptions apply.

39.14(2) The provisions of 10 CFR Part 39 are hereby adopted by reference and are subject to the following conditions:

a. Not adopted by reference are 10 CFR 39.5, 39.8, 39.91, 39.101, and 39.103.

b. Where the words "NRC or an Agreement State" appear in 10 CFR 39.35(d), substitute the words "Iowa HHS, NRC, or an Agreement State."

c. Where the words "Commission or an Agreement State" appear in 10 CFR 39.35(b) and 10 CFR 39.43(d) and (e), substitute the words "Iowa HHS, NRC, or an Agreement State."

d. Where the word "Commission" appears in 10 CFR 39.2, 39.13, 39.15, 39.17, 39.33, 39.35(a), 39.37, 39.39, 39.45, 39.65, 35.67, 39.77 and 39.91, substitute the words "Iowa HHS."

e. Where the word "NRC" appears in 10 CFR 39.61, 39.73 and 39.77, substitute the words "Iowa HHS."

f. Where the words "NRC Regional Office listed in appendix D of part 20 of this chapter" appear in 10 CFR 39.11 and 10 CFR 39.35, substitute the words "Iowa HHS."

g. Where the words "NRC Regional Office" appear in 10 CFR 39.61, 39.73 and 39.77, substitute the words "Iowa HHS."

h. Where the words "Commission under 10 CFR § 32.210 of this chapter or with an Agreement State" appear in 10 CFR 39.41(f), substitute the words "Iowa HHS, NRC, or an Agreement State."

i. Where the words "Commission pursuant to 10 CFR § 39.13(c) or by an Agreement State" appear in 10 CFR 39.43(c) and 10 CFR 39.51, substitute the words "Iowa HHS, NRC, or an Agreement State."

j. For the purpose of this chapter, where 10 CFR Part 39.11 requires "NRC Form 313," licensees shall use "Iowa HHS Form 313."

k. Where 10 CFR Part 39 references fees listed in 10 CFR Parts 170 and 171, licensees shall comply with the fee requirements specified in rule 641—37.9(136C).

641—39.15(136C) Domestic licensing of source material.

39.15(1) In addition to the rules of this chapter, RAM facilities shall comply with the requirements of 10 CFR Part 40 unless specific exemptions apply.

39.15(2) The provisions of 10 CFR Part 40 are hereby adopted by reference and are subject to the following conditions:

a. Not adopted by reference are 10 CFR 40.2a; 40.4(definitions of "commencement of construction," "construction," "foreign obligations," "reconciliation," and residual radioactive material"); 40.5; 40.6; 40.7; 40.8; 40.10(b); 40.20(b) and (c); 40.12(b); 40.13(c)(5)(iv); 40.23; 40.27; 40.28; 40.31(c), (e), (f), (g), (j), (k), (l), and (m); 40.32(d), (e), and (g); 40.33; 40.38; 40.41(d), (e)(1), (e)(3), (g), and (h); 40.51(b)(6); 40.52; 40.53; 40.56; 40.64; 40.66; 40.67; 40.71; 40.81; 40.82, Appendix A (criteria 11 and 12).

b. Where the word "NRC" appears in 10 CFR 40.2, 40.7(e)(1) and (e)(2), 40.7(f)(both mentions), 40.10(a)(2)(both mentions), 40.22(b)(1) and (4), 40.22(c), 40.36(b)(2)(both mentions), 40.36(g), 40.42(c)(2) and (d)(both mentions) and (d)(4), 40.60(a) and (b), and Appendix A (criteria 4 and 6), substitute the words "Iowa HHS."

c. Where the words "U.S. NRC or an Agreement State" appear in 10 CFR 40.35(b), substitute the words "Iowa HHS, NRC, or an Agreement State."

d. Where the words "Director, Office of Nuclear Material Safety and Safeguards, by an appropriate method listed in 10 CFR § 40.5, with a copy to the appropriate NRC Regional Administrator" appear in 10 CFR 40.25(c)(1), substitute the words "Iowa HHS."

e. Where the words "NRC Headquarters Operations Center at the numbers specified in appendix A of this chapter" appear in 10 CFR 40.60(c)(1), substitute the words "Iowa HHS."

f. Where the words "NRC Document Controls Desk by an appropriate method listed in § 40.5, with a copy to the appropriate NRC regional office listed in appendix D to part 20 of this chapter" appear in 10 CFR 40.60(c)(2), substitute the words "Iowa HHS."

g. Where the words “appropriate NRC regional office” appear in 10 CFR 40.61(d) and (f), and Appendix A (criterion 8), substitute the words “Iowa HHS.”

h. Where the words “Director, Office of Nuclear Material Safety and Safeguards, using an appropriate method listed in § 40.5, with a copy to the appropriate NRC Regional Office shown in appendix D to part 20 of this chapter” appear in 10 CFR 40.65(a)(1), substitute the words “Iowa HHS.”

i. Where the words “appropriate NRC Regional Administrator” appear in 10 CFR 40.41(f)(1), substitute the words “Iowa HHS.”

j. Where the word “Commission” appears in 10 CFR 40.1(a), 40.3, 40.9(a) and (b)(all mentions), 40.10(a)(1) and (c)(1), 40.11(all mentions), 40.13(i), 40.14(a), 40.20(a), 40.22(a)(1)(both mentions) and (e), 40.26(b)(both mentions), 40.26(c)(2) 40.31(a) and (b)(both mentions) and (c) and (d) and (f) and (g) and (g)(1), 40.34(b) and (c), 40.35(e) and (f)(all mentions), 40.36(e)(1) and (e)(2)(i) (both mentions) and (e)(2)(ii) and (e)(2)(iii) and (f), 40.41(a) and (c), 40.42(a) and (b)(all mentions) and (c) and (e)(2) and (f)(all mentions) and (g)(1) and (g)(2)(both mentions) and (g)(5) and (i)(both mentions) and (i)(5) and (k), 40.45, 40.46(a), 40.51(b)(2) and (b)(7) and (d)(4) and (d)(5), 40.54(b), 40.55(d)(3) and (e), 40.61(a)(2) and (a)(3) and (c)(1) and (c)(2)(all mentions), 40.62(a) and (b), 40.63(both mentions), 40.65 (a)(1)(all mentions), and Appendix A, substitute the words “Iowa HHS.”

k. Where the words “Director, Office of Nuclear Material Safety and Safeguards, with a copy to the Regional Administrator of the appropriate U.S. Nuclear Regulatory Commission Regional Office listed in appendix D of part 20 of this chapter” appear in 10 CFR 40.25(c)(2) and (d)(4), substitute the words “Iowa HHS.”

l. Where the words “appropriate NRC regional office as indicated in appendix D to part 20 of this chapter, or the Director, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555” appear in 10 CFR 40.26(c)(2), substitute the words “Iowa HHS.”

m. Where the words “Director, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555” appear in 10 CFR 40.55(d)(1), substitute the words “Iowa HHS.”

n. Where the words “Commission or an Agreement State” appear in 10 CFR 40.51(b)(5) and (c)(both mentions), substitute the words "Iowa HHS, NRC, or an Agreement State.”

o. Where the words “Act”, “Atomic Energy Act of 1954, as amended (68 Stat. 919)”, “section 62 of the Act”, and “section 182 of the Act” appear in 10 CFR 40.12, 40.13, 40.31(d), 40.32(a), 40.41(a), (b), and (e)(4), 40.46, and 40.51(b)(2), (b)(3), substitute the words “Iowa Code chapter 136C.”

p. Where the words “Administrator of the appropriate Regional Office” appear in 10 CFR 40.9(b), substitute the words “Iowa HHS.”

q. Where the words “Director of the Office of Nuclear Material Safety and Safeguards by an appropriate method listed in 40.5” appear in 10 CFR 40.22(b)(4) and (c), and where the words “Director, Office of Nuclear Materials Safety and Safeguards, by an appropriate method listed in 40.5” appear in 10 CFR 40.35(e)(1) and (f), substitute the words “Iowa HHS.”

r. Where the words “Director, Office of Nuclear Material Safety and Safeguards” appear in 10 CFR 40.36(g)(3), substitute the words “Iowa HHS.”

s. Where the words “Agreement State agency” and “Agreement State” appear in 10 CFR 40.55, substitute the words “Agreement State or the NRC.”

t. Where the words “appropriate NRC regional office as indicated in appendix D to 10 CFR part 20 of this chapter, or the Director, Office of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, DC 20555–0001” appear in Appendix A (criterion 8A), substitute the words “Iowa HHS.”

u. For the purpose of this chapter, where 10 CFR 40.42 requires “NRC Form 314,” licensees shall use “Iowa HHS Form 314.”

v. For the purpose of this chapter, where 10 CFR 40.25 and 10 CFR 40.35 requires "NRC Form 244," licensees shall use "Iowa HHS Form 244."

w. Where 10 CFR Part 40 references fees listed in 10 CFR Parts 170 and 171, licensees shall comply with the fee requirements specified in rule 641—37.9(136C).

641—39.16(136C) Domestic licensing of special nuclear material.

39.16(1) In addition to the rules of this chapter, RAM facilities shall comply with the requirements of 10 CFR Part 70, "Domestic Licensing of Special Nuclear Material," unless specific exemptions apply.

39.16(2) The provisions of 10 CFR Part 70 are hereby adopted by reference and are subject to the following conditions:

a. Not adopted by reference are 10 CFR 70.1(c), (d), and (e), Construction Paragraph 9ii; 70.4; 70.5; 70.6; 70.7; 70.8; 70.10(b); 70.13; 70.14; 70.17(c) and (d); 70.20a; 70.20b; 70.21 (a)(1), (a)(2), (a)(3), (b), (c), (d), and (e), (f), (g), (h); 70.22(b), (c), (f), (g), (h), (i), (j), (k), (l), (m), and (n); 70.23(a)(1), (a)(6), (a)(7), (a)(8), (a)(9), (a)(10), (a)(11), (a)(12), and (b); 70.23a; 70.24; 70.25(a)(1); 70.31(c), (d), and (e); 70.32 (a)(1), (a)(4), (a)(5), (a)(6), (a)(7), (b)(1), (b)(3), (b)(4), (c), (d), (e), (f), (g), (h), (i), (j), and (k); 70.34; 70.37; 70.40; 70.42(b)(6); 70.44; 70.50(c)(2)(iv) and (d); 70.52; 70.55(c); 70.59; 70.60; 70.61; 70.62; 70.64; 70.65; 70.66; 70.72; 70.73; 70.74; 70.76; 70.81; 70.82; 70.91; 70.92, and Appendix A.

b. Where the word "NRC" appears in 10 CFR 70.2, 70.10(a)(2)(both mentions), 70.25(b)(2) (both mentions) and (h), 70.38(c)(2) and (d)(both mentions) and (d)(4), and 70.50(a) and (b), substitute the words "Iowa HHS."

c. Where the words "NRC Headquarters Operations Center at the number specified in appendix A to part 73 of this chapter" appear in 10 CFR 70.50(c)(1), substitute the words "Iowa HHS."

d. Where the words "appropriate NRC Regional Administrator" appear in 10 CFR 70.32(a)(9)(i), substitute the words "Iowa HHS."

e. Where the words "appropriate NRC Regional Office" appear in 10 CFR 70.51(a), substitute the words "Iowa HHS."

f. Where the word "Commission" appears in 10 CFR 70.1(a), 70.3, 70.9(a)(both mentions) and (b)(both mentions), 70.10(a)(1) and (c)(1), 70.17(a), 70.18, 70.22(a)(8) and (d)(both mentions), 70.23(a) and (a)(5), 70.25(f)(1) and (f)(2)(i)(both mentions) and (f)(2)(ii) and (f)(2)(iii) and (g), 70.31(a)(both mentions), 70.32(a)(8) and (b), 70.33, 70.35, 70.36(a), 70.38(a) and (b)(all mentions) and (c) and (e)(2) and (f)(all mentions) and (g)(1) and (g)(2)(both mentions) and (g)(5) and (i)(5) and (k), 70.39(a)(4), 70.42(b)(7), 70.51(c)(1) and (c)(2)(all mentions), 70.55(a) and (b) and (c)(1) and (c)(2), 70.56(both mentions), substitute the words "Iowa HHS."

g. Where the words "Commission or an Agreement State" and "Commission or with an Agreement State" appear in 70.42(c)(both mentions), substitute the words "Iowa HHS, NRC or an Agreement State."

h. Where the words "Commission or the licensing agency of an Agreement State" appear in 10 CFR 70.42(d)(4) and (d)(5), substitute the words "Iowa HHS, the U.S. Regulatory Commission, or the licensing agency of an Agreement State."

i. For the purpose of this chapter, where 10 CFR Part 70.38(j)(1) requires "NRC Form 314," licensees shall use "Iowa HHS Form 314."

j. Where the words "the Atomic Energy Act of 1954, as amended (68 Stat. 919) and Title II of the Energy Reorganization Act of 1974 (88 Stat. 1242)" appear in 10 CFR 70.1(b), substitute the words "Iowa Code chapter 136C."

k. Where the word "Act" appears in 10 CFR 70.21(b), 70.32(a)(3), and 70.36(a), substitute the words "Iowa Code chapter 136C."

l. Where the words "Administrator of the appropriate Regional Office" appear in 10 CFR 70.9(b), substitute the words "Iowa HHS."

m. Where the words "Any person in a non-agreement State who holds a specific license issued by the Commission or the Atomic Energy Commission" appear in 10 CFR 70.19(a)(1), substitute the words "Any person who holds a specific license issued by Iowa HHS."

n. Where the words "Any Government agency, as defined in 10 CFR § 70.4 of this chapter, which holds a specific license issued under this chapter" appear in 10 CFR 70.19(a)(2), substitute the words "Any person who holds a specific license issued by the NRC."

o. Where the words "Director, Office of Nuclear Material Safety and Safeguards" appear in 10 CFR 70.25(h)(3), substitute the words "Iowa HHS."

p. In 10 CFR 70.25(a), "(a)(1) and" is deleted and does not apply.

q. In 10 CFR 70.38(d), the phrase "consistent with the administrative directions in 10 CFR § 70.5" is deleted and does not apply.

r. In 10 CFR 70.50(c)(1), the phrase "and by § 70.74 and appendix A of this part, if applicable" is deleted and does not apply.

s. Where 10 CFR Part 70 references fees listed in 10 CFR Parts 170 and 171, licensees shall comply with the fee requirements specified in rule 641—37.9(136C).

641—39.17(136C) Packaging and transportation of radioactive material.

39.17(1) In addition to the rules of this chapter, RAM facilities shall comply with the requirements of 10 CFR Part 71, "Packaging and Transportation of Radioactive Material," unless specific exemptions apply.

39.17(2) The provisions of 10 CFR Part 71 are hereby adopted by reference and are subject to the following conditions:

a. Not adopted by reference are 71.1, 71.2, 71.6, 71.9, 71.11, 71.14(b), 71.19, 71.31, 71.33, 71.35, 71.37, 71.38, 71.39, 71.41, 71.43, 71.45, 71.51, 71.55, 71.59, 71.61, 71.63, 71.64, 71.65, 71.70, 71.71, 71.73, 71.74, 71.75, 71.77, 71.85(a) through (c), 71.91(b), 71.99, 71.100, 71.101(c)(2) and (d) and (e), 71.107, 71.109, 71.111, 71.113, 71.115, 71.117, 71.119, 71.121, 71.123, and 71.125.

b. Where the word "NRC" appears in 10 CFR 71.0(a) and (c) and (d)(both mentions) and (g), 71.5(a), 71.8(b)(2)(both mentions), 71.10, 71.93(c), 71.95(a)(1) and (a)(2) and (c), 71.101(f), and 71.106(a)(all mentions) and (a)(1) and (b)(all mentions) and (b)(1), substitute the words "Iowa HHS."

c. Where the word "Commission" appears in 10 CFR 71.0(c), 71.3, 71.4, 71.7(a)(both mentions) and (b)(all mentions), 71.8(b)(1) and (d)(1), 71.10, 71.11, 71.12, 71.17(a) and (b), 71.21(a) and (b), 71.22(a) and (b), 71.23(a) and (b), 71.91(c), and 71.101(c) and (c)(2) and (f)(all mentions), substitute the words "Iowa HHS."

d. Where the words "the Director, Office of Nuclear Materials Safety and Safeguards, US Nuclear Regulatory Commission, Washington, DC 20555-0001" appear in 10 CFR 71.5(b), substitute the words "Iowa HHS."

e. Where the words "Notification must be provided to the Administrator of the appropriate Regional Office within 2 working days of identifying the information" appear in 10 CFR 71.7(b), substitute the words "Notification must be provided to Iowa HHS within 2 working days of identifying the information."

f. Where the words "the Director, Office of Nuclear Materials Safety and Safeguards, US Nuclear Regulatory Commission, Washington, DC 20555-0001" appear in 10 CFR 71.5(b), substitute the words "Iowa HHS."

g. Where the section "*Approval of program.* (1) Before the use of any package for the shipment of licensed material subject to this subpart, each licensee shall obtain Commission approval of its quality assurance program. Using an appropriate method listed in § 71.1(a), each licensee shall file a description of its quality assurance program, including a discussion of which requirements of this subpart are applicable and how they will be satisfied, by submitting the description to: ATTN: Document Control Desk, Director, Division of Fuel Management, Office of Nuclear Material Safety and Safeguards," appears in 10 CFR 71.101(c), substitute with "*Approval of program.* (1) Before the use of any package for the shipment of licensed material subject to this subpart, each licensee shall

obtain Iowa HHS's approval of its quality assurance program. Each licensee shall file a description of its quality assurance program, including a discussion of which requirements of this subpart are applicable and how they will be satisfied, with Iowa HHS."

641—39.18(136C) Reciprocal recognition of licenses.

39.18(1) In addition to the rules of this chapter, RAM facilities shall comply with the requirements of 10 CFR Part 150, "Packaging and Transportation of Radioactive Material," unless specific exemptions apply.

39.18(2) The provisions of 10 CFR Part 150 are hereby adopted by reference and are subject to the following conditions:

a. Not adopted by reference are 10 CFR 150.3 definition of "foreign obligations," 150.4, 150.5, 150.7, 150.8, 150.10, 150.14, 150.15, 150.15a, 150.16, 150.17, 150.17a, 150.19, 150.21, 150.30, and 150.33.

b. Where the words "Recognition of Agreement State licenses" appear in the title of 10 CFR Part 150.20, substitute the words "Recognition of U.S. Nuclear Regulatory Commission or Agreement State licenses."

c. Where the sentence "Provided that the provisions of paragraph (b) of this section have been met, any person who holds a specific license from an Agreement State, where the licensee maintains an office for directing the licensed activity and retaining radiation safety records, is granted a general license to conduct the same activity in" appears in 10 CFR 150.20(a)(1), substitute the sentence "Provided that the provisions of paragraph (b) of this section have been met, any person who holds a specific license from the U.S. Nuclear Regulatory Commission or an Agreement State, where the licensee maintains an office for directing the licensed activity and retaining radiation safety records, is granted a general license to conduct the same activity in Iowa."

d. Where the words "specific Agreement State license" appear in 10 CFR 150.20(a)(2), substitute the words "specific U.S. Nuclear Regulatory Commission or Agreement State license."

e. Where 10 CFR 150.20(b) states "Notwithstanding any provision to the contrary in any specific license issued by an Agreement State to a person engaging in activities in a non-Agreement State, in an area of exclusive Federal jurisdiction within an Agreement State, or in offshore waters under the general licenses provided in this section, the general licenses provided in this section are subject to all the provisions of the Act, now or hereafter in effect, and to all applicable rules, regulations, and orders of the Commission including the provisions of §§ 30.7(a) through (f), 30.9, 30.10, 30.34, 30.41, and 30.51 through 30.63 of this chapter; §§ 40.7(a) through (f), 40.9, 40.10, 40.41, 40.51, 40.61 through 40.63, 40.71, and 40.81 of this chapter; §§ 70.7(a) through (f), 70.9, 70.10, 70.32, 70.42, 70.52, 70.55, 70.56, 70.60 through 70.62 of this chapter; §§ 74.11, 74.15, and 74.19 of this chapter; and to the provisions of 10 CFR parts 19, 20 and 71 and subparts C through H of part 34, §§ 39.15 and 39.31 through 39.77 of this chapter. In addition, any person engaging in activities in non-Agreement States, in areas of exclusive Federal jurisdiction within Agreement States, or in offshore waters under the general licenses provided in this section," substitute with the sentences "Notwithstanding any provision to the contrary in any specific license issued by the U.S. Nuclear Regulatory Commission or an Agreement State to a person engaging in activities in Iowa under the general licenses provided in this section, the general licenses provided in this section are subject to all the provisions of Iowa Code chapter 136C, now or hereafter in effect, and to all applicable rules, regulations, and orders of Iowa HHS including the provisions of 10 CFR §§ 30.9, 10 CFR 30.10, 10 CFR 30.34, 10 CFR 30.41, and 10 CFR 30.51 through 10 CFR 30.62 of this chapter; 10 CFR §§ 40.9, 10 CFR 40.10(a), 10 CFR 40.41, 10 CFR 40.51, 10 CFR 40.61 through 10 CFR 40.63 of this chapter; 10 CFR §§ 70.9, 10 CFR 70.10(a), 10 CFR 70.32, 10 CFR 70.42, 10 CFR 70.55, 10 CFR 70.56 of this chapter; 10 CFR §§ 74.11, 10 CFR 74.15, and 10 CFR 74.19 of this chapter; and to the provisions of 10 CFR parts 19, 20 and 71 and subparts C through F of part 34, 10 CFR §§ 39.15 and 10 CFR 39.31 through 39.77 of this chapter. In addition, any person engaging in activities in Iowa under the general licenses provided in this section."

f. Where the words "file a submittal containing an NRC Form 241, 'Report of Proposed Activities in Non-Agreement States' a copy of its Agreement State specific license, and the appropriate fee as prescribed in § 170.31 of this chapter with the Regional Administrator of the U.S. Nuclear Regulatory Commission Regional Office listed on the NRC Form 241 and in appendix D to part 20 of this chapter for the Region in which the Agreement State that issued the license is located" appear in 10 CFR 150.20(b)(1), substitute the words "file a copy of its U.S. Nuclear Regulatory Commission or Agreement State specific license, with Iowa HHS."

g. For the purpose of this chapter, where 10 CFR 150.20(b)(1)(i), (b)(1)(iii), and (b)(2) require "NRC Form 241," licensees shall use "Iowa HHS Form 241."

h. Where the word "Region" appears in 10 CFR 150.20(b)(1)(i) and (b)(1)(ii), substitute the words "Iowa HHS."

i. Where the words "Regional Administrator" appear in 10 CFR 150.20(b)(1) and (b)(2), substitute the words "Iowa HHS."

j. Where the words "a copy of the Agreement State license, and the fee payment" appear in 10 CFR 150.20(b)(iii), substitute the words "a copy of the U.S. Nuclear Regulatory Commission or Agreement State license."

k. Where the sentence "Shall not, in any non-Agreement State, in an area of exclusive Federal jurisdiction within an Agreement State, or in offshore waters, transfer or dispose of radioactive material possessed or used under the general licenses provided in this section, except by transfer to a person who is specifically licensed by the Commission to receive this material." appears in 10 CFR 150.20(b)(3), substitute the sentence "Shall not, in Iowa, transfer or dispose of radioactive material possessed or used under the general licenses provided in this section, except by transfer to a person who is specifically licensed by Iowa HHS to receive this material."

l. Where the sentence "Shall not, under the general license concerning activities in non-Agreement States or in areas of exclusive Federal jurisdiction within Agreement States, possess or use radioactive materials, or engage in the activities authorized in paragraph (a) of this section, for more than 180 days in any calendar year, except that the general license in paragraph (a) of this section concerning activities in offshore waters authorizes that person to possess or use radioactive materials, or engage in the activities authorized, for an unlimited period of time" appears in 10 CFR 150.20(b)(4), substitute the sentence "Shall not, under the general license concerning activities in Iowa, possess or use radioactive materials, or engage in the activities authorized in paragraph (a) of this section, for more than 180 days in any calendar year."

m. Where the words "specific license issued by an Agreement State" appear in 10 CFR 150.20(b)(5), substitute the words "specific license issued by the U.S. Nuclear Regulatory Commission or an Agreement State."

These rules are intended to implement Iowa Code chapter 136C.

CHAPTER 39—APPENDIX A

SUBJECTS FOR INSTRUCTION OF RADIOGRAPHER'S ASSISTANTS

Training provided to qualify individuals as radiographer's assistants in compliance with paragraph 39.10(2)*"g"* shall be presented on a formal basis. The training shall include the following subjects:

I. Fundamentals of radiation safety
- A. Characteristics of radiation
- B. Units of radiation dose and quantity of radioactivity
- C. Significance of radiation dose
  1. Radiation protection standards
  2. Biological effects of radiation
  3. Case histories of radiography accidents
- D. Levels of radiation from sources of radiation
- E. Methods of controlling radiation dose
  1. Working time
  2. Working distances
  3. Shielding

II. Radiation detection instrumentation to be used
- A. Use of radiation survey instruments
  1. Operation
  2. Calibration
  3. Limitations
- B. Survey techniques
- C. Use of personnel monitoring equipment
  1. Film badges
  2. Thermoluminescent dosimeters (TLDs)
  3. Pocket dosimeters
  4. OSL devices

III. The requirements of pertinent federal and state regulations

IV. The registrant's written operating and emergency procedures

V. Radiographic equipment to be used for operation and control of X-ray equipment

CHAPTER 39—APPENDIX B

OPERATING AND EMERGENCY PROCEDURES

The licensee's or registrant's operating and emergency procedures shall include instructions in at least the following:

A. Handling and use of sources of radiation for industrial radiography such that no individual is likely to be exposed to radiation doses that exceed the limits established in 641—Chapter 37;

B. Methods and occasions for conducting radiation surveys, including lock-out survey requirements;

C. Methods for controlling access to industrial radiography areas;

D. Methods and occasions for locking and securing sources or radiation;

E. Personnel monitoring and the use of personnel monitoring equipment, including steps to be taken immediately by industrial radiographic personnel in the event a pocket dosimeter is found to be off-scale;

F. Methods of transporting equipment to field locations, including packing of sources of radiation in the vehicles, placarding of vehicles, and controlling of sources of radiation during transportation (including applicable U.S. Department of Transportation requirements);

G. Methods or procedures for minimizing exposure of individuals in the event of an accident, including procedures for a disconnect accident, a transportation accident, and loss of a sealed source;

H. Procedures for notifying proper personnel in the event of an accident;

I. Specific posting requirements;

J. Maintenance of records (Appendix C); and

K. Inspection and maintenance of radiographic exposure devices, source changers, storage containers, transport containers, source guide tubes, crank-out devices, and radiation machines.

CHAPTER 39—APPENDIX C

TIME REQUIREMENTS FOR RECORDKEEPING

Specific Section	Name of Record	Time Interval Required for Recordkeeping
39.10(2)*"b"*	Receipt, transfer and disposal.	3 years.
39.10(2)*"c"*(2)	Survey instrument calibrations.	3 years.
39.10(2)*"g"*(4)"3"(K)	Quarterly inventory.	3 years.
39.10(2)*"d"*	Utilization logs.	3 years.
39.10(2)*"e"*	Quarterly inspection and maintenance.	3 years.
39.10(2)*"j"*	High radiation area control devices or alarm systems.	Until disposal is authorized by the department.
39.10(2)*"g"*	Training and testing records.	3 years.
39.10(2)*"i"*	Pocket dosimeter readings.	3 years.
	Pocket dosimeter calibrations.	3 years.
	Film badge, OSL device, or TLD reports.	Until the agency terminates the license.
	Alarming ratemeter calibrations.	3 years.
	Alarming ratemeter functions.	3 years.
	Estimates of overexposures.	Until the agency terminates the license.
39.10(2)	Current operating and emergency procedures.	Until the license is terminated.
	Superseded material.	3 years after change.
39.10(2)*"h"*	Internal audit program.	3 years.
39.10(2)*"h"*	Radiographer audits.	3 years.
39.10(3)*"e"*	Radiation surveys.	2 years or until disposal is authorized by the agency if a survey was used to determine an individual's exposure.
39.10(2)*"l"*	Records at temporary job sites.	During temporary job site operations.
39.10(3)*"f"*	Annual evaluation of enclosed X-ray systems.	2 years.
10 CFR 34.67	Leak tests.	3 years or until the source in storage is removed.
39.10(3)*"f"*	Evaluation of certified cabinet X-ray systems.	2 years.

CHAPTER 39—APPENDIX D

EXEMPT CONCENTRATIONS

Element (atomic number)	Radionuclide	Column I Gas concentration μCi/ml 1/	Column II Liquid and solid concentration μCi/ml 2/
Antimony (51)	Sb-122		3×10^{-4}
	Sb-124		2×10^{-4}
	Sb-125		1×10^{-3}
Argon (18)	Ar-37	1×10^{-3}	
	Ar-41	4×10^{-7}	
Arsenic (33)	As-73		5×10^{-3}
	As-74		5×10^{-4}
	As-76		2×10^{-4}
	As-77		8×10^{-4}
Barium (56)	Ba-131		2×10^{-3}
	Ba-140		3×10^{-4}
Beryllium (4)	Be-7		2×10^{-2}
Bismuth (83)	Bi-206		4×10^{-4}
Bromine (35)	Br-82	4×10^{-7}	3×10^{-3}
Cadmium (48)	Cd-109		2×10^{-3}
	Cd-115m		3×10^{-4}
	Cd-115		3×10^{-4}
Calcium (20)	Ca-45		9×10^{-5}
	Ca-47		5×10^{-4}
Carbon (6)	C-14	1×10^{-6}	8×10^{-3}
Cerium (58)	Ce-141		9×10^{-4}
	Ce-143		4×10^{-4}
	Ce-144		1×10^{-4}
Cesium (55)	Cs-131		2×10^{-2}
	Cs-134m		6×10^{-2}
	Cs-134		9×10^{-5}
Chlorine (17)	Cl-38	9×10^{-7}	4×10^{-3}
Chromium (24)	Cr-51		2×10^{-2}
Cobalt (27)	Co-57		5×10^{-3}
	Co-58		1×10^{-3}
	Co-60		5×10^{-4}
Copper (29)	Cu-64		3×10^{-3}
Dysprosium (66)	Dy-165		4×10^{-3}
	Dy-166		4×10^{-4}
Erbium (68)	Er-169		9×10^{-4}
	Er-171		1×10^{-3}

Element (atomic number)	Radionuclide	Column I Gas concentration μCi/ml 1/	Column II Liquid and solid concentration μCi/ml 2/
Europium (63)	Eu-152(9.2 h)		6×10^{-4}
	Eu-155		2×10^{-3}
Fluorine (9)	F-18	2×10^{-6}	8×10^{-3}
Gadolinium (64)	Gd-153		2×10^{-3}
	Gd-159		8×10^{-4}
Gallium (31)	Ga-72		4×10^{-4}
Germanium (32)	Ge-71		2×10^{-2}
Gold (79)	Au-196		2×10^{-3}
	Au-198		5×10^{-4}
	Au-199		2×10^{-3}
Hafnium (72)	Hf-181		7×10^{-4}
Hydrogen (1)	H-3	5×10^{-6}	3×10^{-2}
Indium (49)	In-113m		1×10^{-2}
	In-114m		2×10^{-4}
Iodine (53)	I-126	3×10^{-9}	2×10^{-5}
	I-131	3×10^{-9}	2×10^{-5}
	I-132	8×10^{-8}	6×10^{-4}
	I-133	1×10^{-8}	7×10^{-5}
	I-134	2×10^{-7}	1×10^{-3}
Iridium (77)	Ir-190		2×10^{-3}
	Ir-192		4×10^{-4}
	Ir-194		3×10^{-4}
Iron (26)	Fe-55		8×10^{-3}
	Fe-59		6×10^{-4}
Krypton (36)	Kr-85m	1×10^{-6}	
	Kr-85	3×10^{-6}	
Lanthanum (57)	La-140		2×10^{-4}
Lead (82)	Pb-203		4×10^{-3}
Lutetium (71)	Lu-177		1×10^{-3}
Manganese (25)	Mn-52		3×10^{-4}
	Mn-54		1×10^{-3}
	Mn-56		1×10^{-3}
Mercury (80)	Hg-197m		2×10^{-3}
	Hg-197		3×10^{-3}
	Hg-203		2×10^{-4}
Molybdenum (42)	Mo-99		2×10^{-3}
Neodymium (60)	Nd-147		6×10^{-4}
	Nd-149		3×10^{-3}

Element (atomic number)	Radionuclide	Column I Gas concentration μCi/ml 1/	Column II Liquid and solid concentration μCi/ml 2/
Nickel (28)	Ni-65		1×10^{-3}
Niobium (Columbium) (41)	Nb-95		1×10^{-3}
	Nb-97		9×10^{-3}
Osmium (76)	Os-185		7×10^{-4}
	Os-191m		3×10^{-2}
	Os-191		2×10^{-3}
	Os-193		6×10^{-4}
Palladium (46)	Pd-103		3×10^{-3}
	Pd-109		9×10^{-4}
Phosphorus (15)	P-32		2×10^{-4}
Platinum (78)	Pt-191		1×10^{-3}
	Pt-193m		1×10^{-2}
	Pt-197m		1×10^{-2}
	Pt-197		1×10^{-3}
Potassium (19)	K-42		3×10^{-3}
Praseodymium (59)	Pr-142		3×10^{-4}
	Pr-143		5×10^{-4}
Promethium (61)	Pm-147		2×10^{-3}
	Pm-149		4×10^{-4}
Rhenium (75)	Re-183		6×10^{-3}
	Re-186		9×10^{-4}
	Re-188		6×10^{-4}
Rhodium (45)	Rh-103m		1×10^{-1}
	Rh-105		1×10^{-3}
Rubidium (37)	Rb-86		7×10^{-4}
Ruthenium (44)	Ru-97		4×10^{-3}
	Ru-103		8×10^{-4}
	Ru-105		1×10^{-3}
	Ru-106		1×10^{-4}
Samarium (62)	Sm-153		8×10^{-4}
Scandium (21)	Sc-46		4×10^{-4}
	Sc-47		9×10^{-4}
	Sc-48		3×10^{-4}
Selenium (34)	Se-75		3×10^{-3}
Silicon (14)	Si-31		9×10^{-3}
Silver (47)	Ag-105		1×10^{-3}
	Ag-110m		3×10^{-4}
	Ag-111		4×10^{-4}

Element (atomic number)	Radionuclide	Column I Gas concentration μCi/ml 1/	Column II Liquid and solid concentration μCi/ml 2/
Sodium (11)	Na-24		2×10^{-3}
Strontium (38)	Sr-85		1×10^{-3}
	Sr-89		1×10^{-4}
	Sr-91		7×10^{-4}
	Sr-92		7×10^{-4}
Sulfur (16)	S-35	9×10^{-8}	6×10^{-4}
Tantalum (73)	Ta-182		4×10^{-4}
Technetium (43)	Tc-96m		1×10^{-1}
	Tc-96		1×10^{-3}
Tellurium (52)	Te-125m		2×10^{-3}
	Te-127m		6×10^{-4}
	Te-127		3×10^{-3}
	Te-129m		3×10^{-4}
	Te-131m		6×10^{-4}
	Te-132		3×10^{-4}
Terbium (65)	Tb-160		4×10^{-4}
Thallium (81)	Tl-200		4×10^{-3}
	Tl-201		3×10^{-3}
	Tl-202		1×10^{-3}
	Tl-204		1×10^{-3}
Thulium (69)	Tm-170		5×10^{-4}
	Tm-171		5×10^{-3}
Tin (50)	Sn-113		9×10^{-4}
	Sn-125		2×10^{-4}
Tungsten (Wolfram) (74)	W-181		4×10^{-3}
	W-187		7×10^{-4}
Vanadium (23)	V-48		3×10^{-4}
Xenon (54)	Xe-131m	4×10^{-6}	
	Xe-133	3×10^{-6}	
	Xe-135	1×10^{-6}	
Ytterbium (70)	Yb-175		1×10^{-3}
Yttrium (39)	Y-90		2×10^{-4}
	Y-91m		3×10^{-2}
	Y-91		3×10^{-4}
	Y-92		6×10^{-4}
	Y-93		3×10^{-4}
Zinc (30)	Zn-65		1×10^{-3}
	Zn-69m		7×10^{-4}

Element (atomic number)	Radionuclide	Column I Gas concentration μCi/ml 1/	Column II Liquid and solid concentration μCi/ml 2/
	Zn-69		2×10^{-2}
Zirconium (40)	Zr-95		6×10^{-4}
	Zr-97		2×10^{-4}
Beta- and/or gamma-emitting radioactive material not listed above with half-life of less than 3 years.		1×10^{-10}	1×10^{-6}

1/ Values are given in Column I only for those materials normally used as gases.

2/ μCi/g for solids.

NOTE 1: Many radionuclides transform into other radionuclides. In expressing the concentrations in Appendix A, the activity stated is that of the parent radionuclide and takes into account the radioactive decay products.

NOTE 2: For purposes of rule 641—39.6(136C) where there is involved a combination of radionuclides, the limit for the combination should be derived as follows: Determine for each radionuclide in the product the ratio between the radioactivity concentration present in the product and the exempt radioactivity concentration established in Appendix A for the specific radionuclide when not in combination. The sum of such ratios may not exceed "1."

EXAMPLE: Concentration of Radionuclide A in Product

+ Exempt concentration of Radionuclide A

Concentration of Radionuclide B in Product

≤1 Exempt concentration of Radionuclide B

NOTE 3: To convert μCi/ml to SI units of megabecquerels per liter multiply the above values by 37.

EXAMPLE: Zirconium (40) Zr-97 (2×10^{-4} μCi/ml multiplied by 37 is equivalent to 74×10^{-4} MBq/l)

CHAPTER 39—APPENDIX E
EXEMPT QUANTITIES

Radioactive Material	Microcuries
Antimony-122 (Sb 122)	100
Antimony-124 (Sb 124)	10
Antimony-125 (Sb 125)	10
Arsenic-73 (As 73)	100
Arsenic-74 (As 74)	10
Arsenic-76 (As 76)	10
Arsenic-77 (As 77)	100
Barium-131 (Ba 131)	10
Barium-133 (Ba 133)	10
Barium-140 (Ba 140)	10
Bismuth-210 (Bi 210)	1
Bromine-82 (Br 82)	10
Cadmium-109 (Cd 109)	10
Cadmium-115m (Cd 115m)	10
Cadmium-115 (Cd 115)	100
Calcium-45 (Ca 45)	10
Calcium-47 (Ca 47)	10
Carbon-14 (C 14)	100
Cerium-141 (Ce 141)	100
Cerium-143 (Ce 143)	100
Cerium-144 (Ce 144)	1
Cesium-129 (Cs 129)	100
Cesium-131 (Cs 131)	1,000
Cesium-134m (Cs 134m)	100
Cesium-134 (Cs 134)	1
Cesium-135 (Cs 135)	10
Cesium-136 (Cs 136)	10
Cesium-137 (Cs 137)	10
Chlorine-36 (Cl 36)	10
Chlorine-38 (Cl 38)	10
Chromium-51 (Cr 51)	1,000
Cobalt-57 (Co 57)	100
Cobalt-58m (Co 58m)	10
Cobalt-58 (Co 58)	10
Cobalt-60 (Co 60)	1
Copper-64 (Cu 64)	100
Dysprosium-165 (Dy 165)	10
Dysprosium-166 (Dy 166)	100
Erbium-169 (Er 169)	100
Erbium-171 (Er 171)	100
Europium-152 (Eu 152)9.2h	100
Europium-152 (Eu 152)13 yr	1

Radioactive Material	Microcuries
Europium-154 (Eu 154)	1
Europium-155 (Eu 155)	10
Fluorine-18 (F 18)	1,000
Gadolinium-153 (Gd 153)	10
Gadolinium-159 (Gd 159)	100
Gallium-67 (Ga 67)	100
Gallium-72 (Ga 72)	10
Germanium-68 (Ge 68)	10
Germanium-71 (Ge 71)	100
Gold-195 (Au 195)	10
Gold-198 (Au 198)	100
Gold-199 (Au 199)	100
Hafnium-181 (Hf 181)	10
Holmium-166 (Ho 166)	100
Hydrogen-3 (H 3)	1,000
Indium-111 (In 111)	100
Indium-113m (In 113m)	100
Indium-114m (In 114m)	10
Indium-115m (In 115m)	100
Indium-115 (In 115)	10
Iodine-123 (I 123)	100
Iodine-125 (I 125)	1
Iodine-126 (I 126)	1
Iodine-129 (I 129)	0.1
Iodine-131 (I 131)	1
Iodine-132 (I 132)	10
Iodine-133 (I 133)	1
Iodine-134 (I 134)	10
Iodine-135 (I 135)	10
Iridium-192 (Ir 192)	10
Iridium-194 (Ir 194)	100
Iron-52 (Fe 52)	10
Iron-55 (Fe 55)	100
Iron-59 (Fe 59)	10
Krypton-85 (Kr 85)	100
Krypton-87 (Kr 87)	10
Lanthanum-140 (La 140)	10
Lutetium-177 (Lu 177)	100
Manganese-52 (Mn 52)	10
Manganese-54 (Mn 54)	10
Manganese-56 (Mn 56)	10
Mercury-197m (Hg 197m)	100
Mercury-197 (Hg 197)	100
Mercury-203 (Hg 203)	10
Molybdenum-99 (Mo 99)	100

Radioactive Material	Microcuries
Neodymium-147 (Nd 147)	100
Neodymium-149 (Nd 149)	100
Nickel-59 (Ni 59)	100
Nickel-63 (Ni 63)	10
Nickel-65 (Ni 65)	100
Niobium-93m (Nb 93m)	10
Niobium-95 (Nb 95)	10
Niobium-97 (Nb 97)	10
Osmium-185 (Os 185)	10
Osmium-191m (Os 191m)	100
Osmium-191 (Os 191)	100
Osmium-193 (Os 193)	100
Palladium-103 (Pd 103)	100
Palladium-109 (Pd 109)	100
Phosphorus-32 (P 32)	10
Platinum-191 (Pt 191)	100
Platinum-193m (Pt 193m)	100
Platinum-193 (Pt 193)	100
Platinum-197m (Pt 197m)	100
Platinum-197 (Pt 197)	100
Polonium-210 (Po 210)	0.1
Potassium-42 (K 42)	10
Potassium-43 (K 43)	10
Praseodymium-142 (Pr 142)	100
Praseodymium-143 (Pr 143)	100
Promethium-147 (Pm 147)	10
Promethium-149 (Pm 149)	10
Rhenium-186 (Re 186)	100
Rhenium-188 (Re 188)	100
Rhodium-105 (Rh 105)	100
Rubidium-81 (Rb 81)	10
Rubidium-86 (Rb 86)	10
Rubidium-87 (Rb 87)	10
Ruthenium-97 (Ru 97)	100
Ruthenium-103 (Ru 103)	10
Ruthenium-105 (Ru 105)	10
Ruthenium-106 (Ru 106)	1
Samarium-151 (Sm 151)	10
Samarium-153 (Sm 153)	100
Scandium-46 (Sc 46)	10
Scandium-47 (Sc 47)	100
Scandium-48 (Sc 48)	10
Selenium-75 (Se 75)	10
Silicon-31 (Si 31)	100
Silver-105 (Ag 105)	10

Radioactive Material	Microcuries
Silver-110m (Ag 110m)	1
Silver-111 (Ag 111)	100
Sodium-22 (Na 22)	10
Sodium-24 (Na 24)	10
Strontium-85 (Sr 85)	10
Strontium-89 (Sr 89)	1
Strontium-90 (Sr 90)	0.1
Strontium-91 (Sr 91)	10
Strontium-92 (Sr 92)	10
Sulphur-35 (S 35)	100
Tantalum-182 (Ta 182)	10
Technetium-96 (Tc 96)	10
Technetium-97m (Tc 97m)	100
Technetium-97 (Tc 97)	100
Technetium-99m (Tc 99m)	100
Technetium-99 (Tc 99)	10
Tellurium-125m (Te 125m)	10
Tellurium-127m (Te 127m)	10
Tellurium-127 (Te 127)	100
Tellurium-129m (Te 129m)	10
Tellurium-129 (Te 129)	100
Tellurium-131m (Te 131m)	10
Tellurium-132 (Te 132)	10
Terbium-160 (Tb 160)	10
Thallium-200 (Tl 200)	100
Thallium-201 (Tl 201)	100
Thallium-202 (Tl 202)	100
Thallium-204 (Tl 204)	10
Thulium-170 (Tm 170)	10
Thulium-171 (Tm 171)	10
Tin-113 (Sn 113)	10
Tin-125 (Sn 125)	10
Tungsten-181 (W 181)	10
Tungsten-185 (W 185)	10
Tungsten-187 (W 187)	100
Vanadium-48 (V 48)	10
Xenon-131m (Xe 131m)	1,000
Xenon-133 (Xe 133)	100
Xenon-135 (Xe 135)	100
Ytterbium-175 (Yb 175)	100
Yttrium-87 (Y 87)	10
Yttrium-88 (Y 88)	10
Yttrium-90 (Y 90)	10
Yttrium-91 (Y 91)	10
Yttrium-92 (Y 92)	100

Radioactive Material	Microcuries
Yttrium-93 (Y 93)	100
Zinc-65 (Zn 65)	10
Zinc-69m (Zn 69m)	100
Zinc-69 (Zn 69)	1,000
Zirconium-93 (Zr 93)	10
Zirconium-95 (Zr 95)	10
Zirconium-97 (Zr 97)	10
Any radioactive material not listed above other than alpha-emitting radioactive material	0.1

NOTE 1: For purposes of rule 641—39.6(136C) where there is involved a combination of radionuclides, the limit for the combination should be derived as follows:

Determine the amount of each radionuclide possessed and 1,000 times the amount in Appendix B for each of those radionuclides when not in combination. The sum of the ratios of those quantities may not exceed 1.

EXAMPLE:

$$\frac{\text{Amt. of Radionuclide A possessed}}{1000 \times \text{Appendix B quantity for Radionuclide A}} + \frac{\text{Amt. of Radionuclide B possessed}}{1000 \times \text{Appendix B quantity for Radionuclide B}} \mu 1$$

NOTE 2: To convert microcuries (μCi) to SI units of kilobecquerels (kBq), multiply the above values by 37.

EXAMPLE: Zirconium-97 (10 μCi multiplied by 37 is equivalent to 370 kBq).

CHAPTER 39—APPENDIX F

GENERAL REQUIREMENTS FOR INSPECTION OF INDUSTRIAL RADIOGRAPHIC EQUIPMENT

I. Panoramic devices (devices in which the sealed source is physically removed from the shielded container during exposure) shall be inspected for:

A. Radiographic exposure unit:

1. Abnormal surface radiation levels anywhere on camera, collimator, or guide tube;
2. Condition of safety plugs;
3. Proper operation of locking mechanism;
4. Condition of pigtail connector;
5. Condition of carrying device (straps, handle, etc.);
6. Proper labeling.

B. Source tube:

1. Rust, dirt, or sludge buildup inside the source tube;
2. Condition of source tube connector;
3. Condition of source stop;
4. Kinks or damage that could prevent proper operation;
5. Presence of radioactive contamination.

C. Control cables and drive mechanism:

1. Proper drive mechanism with camera, as appropriate;
2. Changes in general operating characteristics;
3. Condition of connector on drive cable;
4. Drive cable flexibility, wear, and rust;
5. Excessive wear or damage to crank assembly parts;
6. Damage to drive cable conduit that could prevent the cable from moving easily;
7. Connection of the control cable connector with the pigtail connector for proper mating;
8. Proper operation of source position indicator, if applicable;
9. Presence of radioactive contamination.

II. Directional beam devices shall be inspected for:

A. Abnormal surface radiation;
B. Changes in the general operating characteristics of the unit;
C. Proper operation of shutter mechanism;
D. Chafing or binding of shutter mechanism;
E. Damage to the device that might impair its operation;
F. Proper operation of locking mechanism;
G. Proper drive mechanism with camera, as appropriate;
H. Condition of carrying device (strap, handle, etc.);
I. Proper labeling.

III. X-ray equipment shall be inspected for:

A. Change in the general operating characteristics of the unit;
B. Wear of electrical cables and connectors;
C. Proper labeling of console;
D. Proper console with machine, as appropriate;
E. Proper operation of locking mechanism;
F. Timer run-down cutoff;

G. Damage to tube head housing that might result in excessive radiation levels.