Appendix C

Environmental Quality Code

19-1-102. Purposes. The purpose of this title is to:

(1) clarify the powers and duties of the Department of Environmental Quality in relationship to local health departments;

(2) provide effective, coordinated management of state environmental concerns;

(3) safeguard public health and quality of life by protecting and improving environmental quality while considering the benefits to public health, the impacts on economic development, property, wildlife, tourism, business, agriculture, forests, and other interests, and the costs to the public and to industry; and

(4) (a) strengthen local health departments' environmental programs;

(b) build consensus among the public, industry, and local governments in developing environmental protection goals; and

(c) appropriately balance the need for environmental protection with the need for economic and industrial development.

Enacted by Chapter 112, 1991 General Session
Download Code Section Zipped WP 6/7/8 19_01003.ZIP 3,948 Bytes

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Last revised: Thursday, July 12, 2001

19-1-104. Creation of department -- Appointment of executive director. (1) There is created within state government the Department of Environmental Quality. The department shall be administered by an executive director.

(2) The executive director shall be appointed by the governor with the advice and consent of the Senate and shall serve at the pleasure of the governor.

(3) The executive director shall have demonstrated the necessary administrative and professional ability through education and experience to efficiently and effectively manage the department's affairs.

(4) The Legislature shall fix the compensation of the executive director in accordance with Title 67, Chapter 22.

Enacted by Chapter 112, 1991 General Session
Download Code Section Zipped WP 6/7/8 19_01005.ZIP 3,757 Bytes

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Last revised: Thursday, July 12, 2001

19-1-105. Divisions of department -- Control by division directors. (1) The following divisions are created within the department:

(a) the Division of Air Quality, to administer Title 19, Chapter 2;

(b) the Division of Drinking Water, to administer Title 19, Chapter 4;

(c) the Division of Environmental Response and Remediation, to administer Title 19, Chapter 6, Parts 3 and 4;

(d) the Division of Radiation, to administer Title 19, Chapter 3;

(e) the Division of Solid and Hazardous Waste, to administer Title 19, Chapter 6, Parts 1, 2, and 5; and

(f) the Division of Water Quality, to administer Title 19, Chapter 5.

(2) Each division is under the immediate direction and control of a division director appointed by the executive director.

(3) Each division director shall possess the necessary administrative skills and training to adequately qualify him for his position. He shall have graduated from an accredited college or university with:

(a) a four-year degree in physical or biological science or engineering;

(b) a related degree; or

(c) a degree in law.

(4) Each director may be removed at the will of the executive director.

Enacted by Chapter 112, 1991 General Session
Download Code Section Zipped WP 6/7/8 19_01006.ZIP 4,104 Bytes

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Last revised: Thursday, July 12, 2001

19-1-106. Boards within department. (1) The following policymaking boards are created within the department:

(a) the Air Quality Board, appointed under Section **19-2-103**;

(b) the Radiation Control Board, appointed under Section **19-3-103**;

(c) the Drinking Water Board, appointed under Section **19-4-103**;

(d) the Water Quality Board, appointed under Section **19-5-103**; and

(e) the Solid and Hazardous Waste Control Board, appointed under Section **19-6-103**.

(2) The authority of the boards created in Subsection (1) is limited to the specific authority granted them under this title.

Enacted by Chapter 112, 1991 General Session
Download Code Section Zipped WP 6/7/8 19_01007.ZIP 3,715 Bytes

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Last revised: Thursday, July 12, 2001

19-1-107. Environmental Quality Coordinating Committee created -- Chair -- Function -- Meetings -- Per diem and expenses.

(1) There is created within the department the Environmental Quality Coordinating Committee.

(2) The committee comprises:

(a) the chairmen of the Air Quality Board, the Water Quality Board, the Drinking Water Board, and the Solid and Hazardous Waste Control Board;

(b) the executive directors of the Departments of Natural Resources, Health, and Environmental Quality;

(c) the commissioner of agriculture and food; and

(d) a local health officer.

(3) The executive director of the Department of Environmental Quality is the chair of the committee.

(4) The committee shall coordinate environmental policy decisions between departments and assist in the development of environmental quality plans for the state.

(5) The committee shall meet on a regular basis on a schedule established by the chair.

(6) (a) (i) Members who are not government employees shall receive no compensation or benefits for their services, but may receive per diem and expenses incurred in the performance of the member's official duties at the rates established by the Division of Finance under Sections **63A-3-106** and **63A-3-107**.

(ii) Members may decline to receive per diem and expenses for their service.

(b) (i) State government officer and employee members who do not receive salary, per diem, or expenses from their agency for their service may receive per diem and expenses incurred in the performance of their official duties from the committee at the rates established by the Division of Finance under Sections **63A-3-106** and **63A-3-107**.

(ii) State government officer and employee members may decline to receive per diem and expenses for their service.

(c) (i) Local government members who do not receive salary, per diem, or expenses from the entity that they represent for their service may receive per diem and expenses incurred in the performance of their official duties at the rates established by the Division of Finance under Sections **63A-3-106** and **63A-3-107**.

(ii) Local government members may decline to receive per diem and expenses for their service.

Amended by Chapter 82, 1997 General Session

Download Code Section Zipped WP 6/7/8 19_01008.ZIP 2,586 Bytes

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Last revised: Thursday, July 12, 2001

19-1-108. Creation of Environmental Quality Restricted Account -- Purpose of restricted account -- Sources of funds -- Uses of funds.

(1) There is created the Environmental Quality Restricted Account.

(2) The sources of monies for the restricted account are:

(a) radioactive waste disposal fees collected under Sections **19-3-106** and **19-3-106.4**;

(b) hazardous waste disposal fees collected under Section **19-6-118**;

(c) PCB waste disposal fees collected under Section **19-6-118.5**;

(d) nonhazardous solid waste disposal fees collected under Section **19-6-119**; and

(e) all investment income derived from money in the restricted account created in this section.

(3) In each fiscal year, the first $500,000 collected from all waste disposal fees listed in Subsection (2), collectively, shall be deposited in the General Fund as free revenue. The balance shall be deposited in the restricted account created in this section.

(4) The Legislature may annually appropriate monies from the Environmental Quality Restricted Account to:

(a) the department for the costs of administering radiation control programs;

(b) the department for the costs of administering solid and hazardous waste programs; and

(c) the Hazardous Substances Mitigation Fund, up to $400,000, for purposes set forth in Title 19, Chapter 6, Part 3, Hazardous Substances Mitigation Act.

(5) In order to stabilize funding for the radiation control program and the solid and hazardous waste program, the Legislature shall in years of excess revenues reserve in the restricted account sufficient monies to meet departmental needs in years of projected shortages.

(6) The Legislature may not appropriate money from the General Fund to the department as a supplemental appropriation to cover the costs of the radiation control program and the solid and hazardous waste program in an amount exceeding 25% of the amount of waste disposal fees collected during the most recent prior fiscal year.

(7) The Legislature may annually appropriate not more than $200,000 from this account to the Department of Public Safety, created in Section **53-1-103**, to be used by that department solely for hazardous materials:

(a) management training; and

(b) response preparation and emergency response training.

(8) All funds appropriated under this part that are not expended at the end of the fiscal year lapse into the account created in Subsection (1).

(9) For fiscal year 1998-99, up to $537,000 in the Environmental Quality Restricted Account may be appropriated by the Legislature to fund legislative priorities.

Amended by Chapter 314, 2001 General Session
Download Code Section Zipped WP 6/7/8 19_01009.ZIP 3,076 Bytes

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Last revised: Thursday, July 12, 2001

19-1-201. Powers of department.

(1) The department shall:

(a) enter into cooperative agreements with the Department of Health to delineate specific responsibilities to assure that assessment and management of risk to human health from the environment are properly administered;

(b) consult with the Department of Health and enter into cooperative agreements, as needed, to ensure efficient use of resources and effective response to potential health and safety threats from the environment, and to prevent gaps in protection from potential risks from the environment to specific individuals or population groups; and

(c) coordinate implementation of environmental programs to maximize efficient use of resources by developing, with local health departments, a Comprehensive Environmental Service Delivery Plan that:

(i) recognizes that the department and local health departments are the foundation for providing environmental health programs in the state;

(ii) delineates the responsibilities of the department and each local health department for the efficient delivery of environmental programs using federal, state, and local authorities, responsibilities, and resources;

(iii) provides for the delegation of authority and pass through of funding to local health departments for environmental programs, to the extent allowed by applicable law, identified in the plan, and requested by the local health department; and

(iv) is reviewed and updated annually.

(2) The department may:

(a) investigate matters affecting the environment;

(b) investigate and control matters affecting the public health when caused by environmental hazards;

(c) prepare, publish, and disseminate information to inform the public concerning issues involving environmental quality;

(d) establish and operate programs, as authorized by this title, necessary for protection of the environment and public health from environmental hazards;

(e) use local health departments in the delivery of environmental health programs to the extent provided by law;

(f) enter into contracts with local health departments or others to meet responsibilities established under this title;

(g) acquire real and personal property by purchase, gift, devise, and other lawful means;

(h) prepare and submit to the governor a proposed budget to be included in the budget submitted by the governor to the Legislature;

(i) (i) establish a schedule of fees that may be assessed for actions and services of the department according to the procedures and requirements of Section **63-38-3.2**; and

(ii) in accordance with Section **63-38-3.2**, all fees shall be reasonable, fair, and reflect the cost of services provided;

(j) prescribe by rule reasonable requirements not inconsistent with law relating to environmental quality for local health departments;

(k) perform the administrative functions of the boards established by Section **19-1-106**, including the acceptance and administration of grants from the federal government and from other sources, public or private, to carry out the board's functions; and

(l) upon the request of any board or the executive secretary, provide professional, technical, and clerical staff and field and laboratory services, the extent of which are limited by the funds available to the department for the staff and services.

Amended by Chapter 324, 1995 General Session
Amended by Chapter 28, 1995 General Session
Download Code Section Zipped WP 6/7/8 19_01010.ZIP 10,103 Bytes

19-1-202. Duties and powers of the executive director. (1) The executive director shall:

(a) administer and supervise the department;

(b) coordinate policies and program activities conducted through boards, divisions, and offices of the department;

(c) approve the proposed budget of each board, division, and office within the department;

(d) approve all applications for federal grants or assistance in support of any department program; and

(e) with the governor's specific, prior approval, expend funds appropriated by the Legislature necessary for participation by the state in any fund, property, or service provided by the federal government.

(2) The executive director may:

(a) issue orders to enforce state laws and rules established by the department except where the enforcement power is given to a board created under Section **19-1-106**, unless the executive director finds that a condition exists which creates a clear and present hazard to the public health or the environment and which requires immediate action, and if the enforcement power is vested with a board created under Section **19-1-106**, the executive director may with the concurrence of the governor order any person causing or contributing to the condition to reduce, mitigate, or eliminate the condition;

(b) with the approval of the governor, participate in the distribution, disbursement, or administration of any fund or service, advanced, offered, or contributed by the federal government for purposes consistent with the powers and duties of the department;

(c) accept and receive funds and gifts available from private and public groups for the purposes of promoting and protecting the public health and the environment and expend the funds as appropriated by the Legislature;

(d) make policies not inconsistent with law for the internal administration and government of the department, the conduct of its employees, and the custody, use, and preservation of the records, papers, books, documents, and property of the department;

(e) create advisory committees as necessary to assist in carrying out the provisions of this title;

(f) appoint division directors who may be removed at the will of the executive director and who shall be compensated in an amount fixed by the executive director;

(g) advise, consult, and cooperate with other agencies of the state, the federal government, other states and interstate agencies, affected groups, political subdivisions, and industries in carrying out the purposes of this title;

(h) consistent with Title 67, Chapter 19, Utah State Personnel Management Act, employ employees necessary to meet the requirements of this title;

(i) authorize any employee or representative of the division to conduct inspections as permitted in this title;

(j) encourage, participate in, or conduct any studies, investigations, research, and demonstrations relating to hazardous materials or substances releases necessary to meet the requirements of this title;

(k) collect and disseminate information about hazardous materials or substances releases; and

(l) review plans, specifications, or other data relating to hazardous substances releases as

provided in this title.

Renumbered and Amended by Chapter 112, 1991 General Session
Download Code Section Zipped WP 6/7/8 19_01011.ZIP 5,252 Bytes

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ast revised: Thursday, July 12, 2001

19-1-203. Representatives of department authorized to enter regulated premises. (1) Authorized representatives of the department, upon presentation of appropriate credentials, may enter at reasonable times upon the premises of properties regulated under this title to perform inspections to insure compliance with rules made by the department.

(2) The inspection authority provided in this section does not apply to chapters in this title which provide for specific inspection procedures and authority.

Enacted by Chapter 112, 1991 General Session
Download Code Section Zipped WP 6/7/8 19_01012.ZIP 3,625 Bytes

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Last revised: Thursday, July 12, 2001

19-1-204. Legal advice and representation for department. (1) The attorney general is the legal adviser for the department and the executive director and shall defend them in all actions and proceedings brought against either of them.

(2) The attorney general or the county attorney of the county in which a cause of action arises or a public offense occurs shall bring any civil or criminal action requested by the executive director or any board created in Section **19-1-106** to abate a condition which exists in violation of, or to prosecute for the violation of or for the enforcement of, the laws or standards, orders, and rules of the department.

Enacted by Chapter 112, 1991 General Session
Download Code Section Zipped WP 6/7/8 19_01013.ZIP 3,728 Bytes

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Last revised: Thursday, July 12, 2001

19-1-205. Assumption of responsibilities. The department assumes all the policymaking functions, regulatory and enforcement powers, rights, duties, and responsibilities of the Division of Environmental Health, the Air Conservation Committee, the Solid and Hazardous Waste Committee, the Utah Safe Drinking Water Committee, and the Water Pollution Control Committee previously vested in the Department of Health and its executive director:

(1) including programs for individual wastewater disposal systems, liquid scavenger operations, and vault and earthen pit privies; but

(2) excluding all other sanitation programs, which shall be administered by the Department of Health.

Enacted by Chapter 112, 1991 General Session
Download Code Section Zipped WP 6/7/8 19_01014.ZIP 3,775 Bytes

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Last revised: Thursday, July 12, 2001

19-1-301. Adjudicative proceedings. The department and its boards shall comply with the procedures and requirements of Title 63, Chapter 46b, Administrative Procedures Act.

Enacted by Chapter 112, 1991 General Session
Download Code Section Zipped WP 6/7/8 19_01015.ZIP 3,397 Bytes

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Last revised: Thursday, July 12, 2001

19-1-302. Violation of laws and orders unlawful. It is unlawful for any person:

(1) to violate the provisions of the laws of this title or the terms of any order or rule issued under it; or

(2) to fail to remove or abate from private property under the person's control at his own expense within 48 hours, or such other reasonable time as the department determines, after being ordered to do so, any nuisance, source of filth, or other sanitation violation.

Enacted by Chapter 112, 1991 General Session
Download Code Section Zipped WP 6/7/8 19_01016.ZIP 3,676 Bytes

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Last revised: Thursday, July 12, 2001

19-1-303. Criminal and civil penalties -- Liability for violations.

(1) (a) Any person who violates any provision of this title or lawful orders or rules adopted under this title by the department shall:

(i) in a civil proceeding be assessed a penalty not to exceed the sum of $5,000; or

(ii) in a criminal proceeding:

(A) for the first violation, be guilty of a class B misdemeanor; and

(B) for a subsequent similar violation within two years, be guilty of a class A misdemeanor.

(b) In addition, a person is liable for any expense incurred by the department in removing or abating any violation.

(2) Assessment or conviction under this title does not relieve the person assessed or convicted from civil liability for any act which was also a violation of the public health laws.

(3) Each day of violation of this title or rules made by the department under it may be considered a separate violation.

(4) The enforcement procedures and penalties provided in Subsections (1) through (3) do not apply to chapters in this title which provide for other specific enforcement procedures and penalties.

(5) Unless otherwise specified in statute, the department shall deposit all civil penalties and fines imposed and collected under this title into the General Fund.

Amended by Chapter 324, 1995 General Session
Download Code Section Zipped WP 6/7/8 19_01017.ZIP 2,678 Bytes

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Last revised: Thursday, July 12, 2001

19-1-304. Principal and branch offices of department. (1) The principal office of the department shall be in Salt Lake County.

(2) The department may establish branch offices at other places in the state to furnish comprehensive and effective environmental programs and to coordinate with and assist local health officers.

Enacted by Chapter 112, 1991 General Session
Download Code Section Zipped WP 6/7/8 19_01018.ZIP 3,554 Bytes

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Last revised: Thursday, July 12, 2001

19-1-305. Administrative enforcement proceedings - Tolling of limitation period.

The issuance of an administrative enforcement notice of a violation or an order under Section **19-1-202**, **19-2-110**, **19-4-107**, **19-6-404**, **19-5-111**, or **19-6-112**, or issuance of a notice of agency action under Section **19-3-109** or **19-6-407** tolls the running of the period of limitation for commencement of a civil action brought to assess or collect a penalty until the date the notice of violation, order, or agency action becomes final under Title 63, Chapter 46b, Administrative Procedures Act, or for a period of three years, whichever occurs first.

Enacted by Chapter 155, 1991 General Session
Renumbered and Amended by Chapter 112, 1991 General Session
Download Code Section Zipped WP 6/7/8 19_01019.ZIP 8,946 Bytes

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Last revised: Thursday, July 12, 2001

19-1-306. Records of the department. (1) Except as provided in this section, records of the department shall be subject to Title 63, Chapter 2, Government Records Access and Management Act.

(2) (a) The standards of the federal Freedom of Information Act, 5 U.S.C. Sec. 552, and not the standards of Subsections **63-2-304**(1) and (2), shall govern access to records of the department for which business confidentiality has been claimed under Section **63-2-308**, to the extent those records relate to a program:

(i) that is delegated, authorized, or for which primacy has been granted to the state;

(ii) for which the state is seeking delegation, authorization, or primacy; or

(iii) under the federal Comprehensive Environmental Response, Compensation, and Liability Act.

(b) The regulation of the United States Environmental Protection Agency interpreting the federal Freedom of Information Act, as it appeared at 40 C.F.R. Part 2 on January 1, 1992, shall also apply to the records described in Subsection (1).

(3) (a) The department may, upon request, make trade secret and confidential business records available to the United States Environmental Protection Agency insofar as they relate to a delegated program, to a program for which the state is seeking delegation, or to a program under the federal Comprehensive Environmental Response, Compensation and Liability Act.

(b) In the event a record is released to the United States Environmental Protection Agency under Subsection (3)(a), the department shall convey any claim of confidentiality to the United States Environmental Protection Agency and shall notify the person who submitted the information of its release.

(4) Trade secret and confidential business records under Subsection (2) shall be managed as protected records under the Government Records Access and Management Act, and all provisions of that act shall apply except Subsections **63-2-304**(1) and (2).

(5) Records obtained from the United States Environmental Protection Agency and requested by that agency to be kept confidential shall be managed as protected records under the Government Records Access and Management Act, and all provisions of that act shall apply except to the extent they conflict with this subsection.

Enacted by Chapter 280, 1992 General Session
Download Code Section Zipped WP 6/7/8 19_01020.ZIP 4,312 Bytes

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Last revised: Thursday, July 12, 2001

Radiation Control Act

Radiation Control Act

CHAPTER 3
RADIATION CONTROL ACT

Sunset Act. - See Section 63-55-219 for the repeal date of this chapter.

Renumbered. - Former Title 19, Chapter 3, providing for annexation of lands to drainage districts, was renumbered in 1990 as §§ 17A-2-529 and 17A-2-530.

Part 1

General Provisions.

Part 2

Interstate Compact on Low-level Radioactive Waste.

Part 3

Placement of High Level Nuclear Waste.

19-3-101. Short title.

This chapter is known as the "Radiation Control Act."

History: C. 1953, 19-3-101, enacted by L. 1991, ch. 112, § 66.

COLLATERAL REFERENCES

Brigham Young Law Review. - Radiation Injury and the Law, 1989 B.Y.U. L. Rev. 1155.

Journal of Energy, Natural Resources & Environmental Law. - State Regulation of Nuclear Power and National Energy Policy, 12 J. Energy, Nat. Resources, & Envtl. L. 1 (1992).

Am. Jur. 2d. - 61A Am. Jur. 2d Pollution Control §§ 274 to 276.

19-3-102. Definitions.

As used in this chapter:

(1) "Board" means the Radiation Control Board created under Section 19-1-106.

(2) (a) "Broker" means a person who performs one or more of the following functions for a generator:

(i) arranges for transportation of the radioactive waste;

(ii) collects or consolidates shipments of radioactive waste; or

(iii) processes radioactive waste in some manner.

(b) "Broker" does not include a carrier whose sole function is to transport the radioactive waste.

(3) "Byproduct material" has the same meaning as in 42 U.S.C. Sec. 2014(e)(2).

(4) "Class B and class C low-level radioactive waste" has the same meaning as in 10 CFR 61.55.

(5) "Executive secretary" means the executive secretary of the board.

(6) "Generator" means a person who:

(a) possesses any material or component:

(i) that contains radioactivity or is radioactively contaminated; and

(ii) for which the person foresees no further use; and

(b) transfers the material or component to:

(i) a commercial radioactive waste treatment or disposal facility; or

(ii) a broker.

(7) (a) "High-level nuclear waste" means spent reactor fuel assemblies, dismantled nuclear reactor components, and solid and liquid wastes from fuel reprocessing and defense-related wastes.

(b) "High-level nuclear waste" does not include medical or institutional wastes, naturally-occurring radioactive materials, or uranium mill tailings.

(8) (a) "Low-level radioactive waste" means waste material which contains radioactive nuclides emitting primarily beta or gamma radiation, or both, in concentrations or quantities which exceed applicable federal or state standards for unrestricted release.

(b) "Low-level radioactive waste" does not include waste containing more than 100 nanocuries of transuranic contaminants per gram of material, nor spent reactor fuel, nor material classified as either high-level waste or waste which is unsuited for disposal by near-surface burial under any applicable federal regulations.

(9) "Radiation" means ionizing and nonionizing radiation, including gamma rays, X-rays, alpha and beta particles, high speed electrons, and other nuclear particles.

(10) "Radioactive" means any solid, liquid, or gas which emits radiation spontaneously from decay of unstable nuclei.

History: C. 1953, 26-1-26.5, enacted by L. 1990, ch. 297, § 2; renumbered by L. 1991, ch. 112, § 67; 1992, ch. 282, § 1; 1994, ch. 188, § 1; 2001, ch. 314, § 2.

Link to 2001 Legislation Affecting this Section

Amendment Notes. - The 1994 amendment, effective May 2, 1994, added Subsection (2), renumbering the subsequent subsections accordingly.

The 2001 amendment, effective April 30, 2001, added Subsections (2) and (3), deleted definitions of "facility," "host state," and "mixed waste," and redesignated subsections accordingly; rewrote the definition of "generator," adding the designations and specifying both a possession element and a transfer element; inserted "radioactive" in Subsections (8)(a) and (b) and deleted "in Sections 19-3-201 through 19-3-205" after the defined term in Subsection (8)(a); and substituted "100 nanocuries" for "10 nanocuries" in Subsection (8)(b).

19-3-103. Radiation Control Board - Members - Organization - Meetings - Per diem and expenses.

(1) The board created under Section 19-1-106 comprises 11 members, one of whom shall be the executive director, or his designee, and the remainder of whom shall be appointed by the governor, with the advice and consent of the Senate.

(2) No more than five appointed members shall be from the same political party.

(3) The appointed members shall be knowledgeable about radiation protection and shall be as follows:

(a) one physician;

(b) one dentist;

(c) one health physicist or other professional employed in the field of radiation safety;

(d) two representatives of regulated industry, at least one of whom represents the radioactive waste management industry;

(e) one registrant or licensee representative from academia;

(f) one representative of a local health department;

(g) one elected county official; and

(h) two members of the general public, at least one of whom represents organized environmental interests.

(4) (a) Except as required by Subsection (b), as terms of current board members expire, the governor shall appoint each new member or reappointed member to a four-year term.

(b) Notwithstanding the requirements of Subsection (a), the governor shall, at the time of appointment or reappointment, adjust the length of terms to ensure that the terms of board members are staggered so that approximately half of the board is appointed every two years.

(5) Each board member is eligible for reappointment to more than one term.

(6) Each board member shall continue in office until the expiration of his term and until a successor is appointed, but not more than 90 days after the expiration of his term.

(7) When a vacancy occurs in the membership for any reason, the replacement shall be appointed for the unexpired term by the governor, after considering recommendations by the department and with the consent of the Senate.

(8) The board shall annually elect a chair and vice chair from its members.

(9) The board shall meet at least quarterly. Other meetings may be called by the chair, by the executive secretary, or upon the request of three members of the board.

(10) Reasonable notice shall be given each member of the board prior to any meeting.

(11) Six members constitute a quorum. The action of a majority of the members present is the action of the board.

(12) (a) (i) Members who are not government employees shall receive no compensation or benefits for their services, but may receive per diem and expenses incurred in the performance of the member's official duties at the rates established by the Division of Finance under Sections 63A-3-106 and 63A-3-107.

(ii) Members may decline to receive per diem and expenses for their service.

(b) (i) State government officer and employee members who do not receive salary, per diem, or expenses from their agency for their service may receive per diem and expenses incurred in the performance of their official duties from the board at the rates established by the Division of Finance under Sections 63A-3-106 and 63A-3-107.

(ii) State government officer and employee members may decline to receive per diem and expenses for their service.

(c) (i) Local government members who do not receive salary, per diem, or expenses from the entity that they represent for their service may receive per diem and expenses incurred in the performance of their official duties at the rates established by the Division of Finance under Sections 63A-3-106 and 63A-3-107.

(ii) Local government members may decline to receive per diem and expenses for their service.

History: C. 1953, 19-3-103, enacted by L. 1991, ch. 112, § 68; 1993, ch. 212, § 11; 1994, ch. 188, § 2; 1996, ch. 243, § 51.

Amendment Notes. - The 1994 amendment, effective May 2, 1994, substituted "the radioactive waste management industry" for "a nondestructive testing discipline" in Subsection (3)(d); rewrote Subsection (4), which formerly read: "Members shall be appointed for a four-year term"; and added Subsections (6) to (8), renumbering former Subsections (5) to (9) as Subsections (9) to (13).

The 1996 amendment, effective April 29, 1996, substituted present Subsections (5) and (7) for former Subsections (4), (5), and (8), revising provisions relating to terms of members and filling vacancies; deleted former Subsection (13), relating to members' expenses; added Subsection (12); and made appropriate redesignations of subsections and stylistic changes.

19-3-103.5. Board authority and duties.

(1) The board may:

(a) require submittal of specifications or other information relating to licensing applications for radioactive materials or registration of radiation sources for review, approval, disapproval, or termination;

(b) issue orders necessary to enforce the provisions of this part, enforce the orders by appropriate administrative and judicial proceedings, and institute judicial proceedings to secure compliance with this part;

(c) hold hearings and compel the attendance of witnesses, the production of documents, and other evidence, administer oaths and take testimony, and receive evidence it finds proper, or appoint hearing officers and authorize them to exercise the powers under this subsection;

(d) settle or compromise any administrative or civil action initiated to compel compliance with this part or any rules adopted under this part;

(e) advise, consult, cooperate with, and provide technical assistance to other agencies of the state and federal government, other states, interstate agencies, and affected groups, political subdivisions, industries, and other persons in carrying out the provisions of this part;

(f) promote the planning and application of pollution prevention and radioactive waste minimization measures to prevent the unnecessary waste and depletion of natural resources;

(g) cooperate with any persons in studies, research, or demonstration projects regarding radioactive waste management or control of radiation sources;

(h) accept, receive, and administer grants or other funds or gifts from public and private agencies, including the federal government, for the purpose of carrying out any of the functions of this part;

(i) exercise all incidental powers necessary to carry out the purposes of this part;

(j) submit an application to the U.S. Food and Drug Administration for approval as an accrediting body in accordance with 42 U.S.C. 263b, Mammography Quality Standards Act of 1992;

(k) accredit mammography facilities, pursuant to approval as an accrediting body from the U.S. Food and Drug Administration, in accordance with 42 U.S.C. 263b, Mammography Quality Standards Act of 1992; and

(l) review the qualifications of and issue certificates of approval to individuals who survey mammography equipment and oversee quality assurance practices at mammography facilities.

(2) The board shall:

(a) hear appeals of final decisions made by the executive secretary or appoint a hearing officer to hear the appeal and make recommendations to the board;

(b) prepare a radioactive waste management plan in compliance with Section 19-3-107 as soon as practicable; and

(c) impound radioactive material as authorized in Section 19-3-111.

(3) Representatives of the board upon presentation of appropriate credentials may enter at reasonable times upon the premises of public and private properties subject to regulation under this part to perform inspections to insure compliance with this part and rules made by the board.

History: C. 1953, 19-3-103.5, enacted by L. 1994, ch. 188, § 3; 1995, ch. 90, § 1.

19-3-104. Registration and licensing of radiation sources by department - Assessment of fees - Rulemaking authority and procedure - Siting criteria.

(1) The board may require the registration or licensing of radiation sources that constitute a significant health hazard.

(2) All sources of ionizing radiation, including ionizing radiation producing machines, shall be registered or licensed by the department.

(3) The board may make rules:

(a) necessary for controlling exposure to sources of radiation that constitute a significant health hazard;

(b) to meet the requirements of federal law relating to radiation control to ensure the radiation control program under this part is qualified to maintain primacy from the federal government; and

(c) to establish:

(i) board accreditation requirements and procedures for mammography facilities; and

(ii) certification procedure and qualifications for persons who survey mammography equipment and oversee quality assurance practices at mammography facilities.

(4) (a) The department shall assess fees for registration, licensing, and inspection of radiation sources under this section.

(b) The department shall comply with the requirements of Section 63-38-3.2 in assessing fees for licensure and registration.

5) The department shall coordinate its activities with the Department of Health rules made under Section 26-21a-203.

(6) (a) Except as provided in Subsection (7), the board may not adopt rules, for the purpose of the state assuming responsibilities from the United States Nuclear Regulatory Commission with respect to regulation of sources of ionizing radiation, that are more stringent than the corresponding federal regulations which address the same circumstances.

(b) In adopting those rules, the board may incorporate corresponding federal regulations by reference.

(7) (a) The board may adopt rules more stringent than corresponding federal regulations for the purpose described in Subsection (6) only if it makes a written finding after public comment and hearing and based on evidence in the record that corresponding federal regulations are not adequate to protect public health and the environment of the state.

(b) Those findings shall be accompanied by an opinion referring to and evaluating the public health and environmental information and studies contained in the record which form the basis for the board's conclusion.

(8) (a) The board shall by rule:

(i) authorize independent qualified experts to conduct inspections required under this chapter of x-ray facilities registered with the division; and

(ii) establish qualifications and certification procedures necessary for independent experts to conduct these inspections.

(b) Independent experts under this Subsection (8) are not considered employees or representatives of the division or the state when conducting the inspections.

(9) (a) The board may by rule establish criteria for siting commercial low-level radioactive waste treatment or disposal facilities.

(b) Any facility for which a radioactive material license is required by this section shall comply with those criteria.

(c) A facility may not receive a radioactive material license until siting criteria have been established by the board. The criteria also apply to facilities that have applied for but not received a radioactive material license.

(10) The board shall by rule establish financial assurance requirements for closure and postclosure care of radioactive waste land disposal facilities, taking into account existing financial assurance requirements.

History: C. 1953, 26-1-27, enacted by L. 1981, ch. 126, § 2; 1987, ch. 12, § 1; 1988, ch. 168, § 1; 1989, ch. 180, § 1; renumbered by L. 1991, ch. 112, §§ 69, 242; 1991, ch. 126, § 1; 1994, ch. 188, § 4; 1995, ch. 28, § 8; 1995, ch. 90, § 2; 2001, ch. 311, § 1.

Link to 2001 Legislation Affecting this Section

Administrative Rules. - This section is implemented by, interpreted by, or cited as authority for the following administrative rule(s): R313-12, R313-15, R313-16, R313-17, R313-18, R313-19, R313-21, R313-22, R313-25, R313-28, R313-30, R313-32, R313-34, R313-35, R313-36, R313-38, R313-70.

Amendment Notes. - The 1994 amendment, effective May 2, 1994, added Subsection (3)(b), making related designation and grammatical changes; inserted "by rule" in Subsection (8)(a); and rewrote Subsection (9).

The 1995 amendment by ch. 28, effective May 1, 1995, substituted "63-38-3.2" for "63-38-3" in Subsection (4)(b).

The 1995 amendment by ch. 90, effective May 1, 1995, added Subsection (3)(c), changed the code reference in Subsection (4)(b) from 63-38-3, and made stylistic changes.

The 2001 amendment, effective April 30, 2001, added Subsection (8) and made related designation changes.

19-3-105. Legislative and gubernatorial approval required. (1) (a) A person may not own, construct, modify, or operate any facility for the purpose of commercially transferring, storing, decaying in storage, treating, or disposing of radioactive waste without first submitting and receiving the approval of the board for a radioactive material license for the facility.

(b) A person may not construct a new commercial radioactive waste transfer, storage, decay in storage, treatment, or disposal facility until:

(i) the requirements of Section **19-3-104** have been met;

(ii) in addition and subsequent to the approval required in Subsection (a), the governor and the Legislature have approved the facility; and

(iii) local planning and zoning has authorized the facility.

(c) For purposes of this section, the following items shall be treated as submission of a new license application:

(i) the submission of a revised application specifying a different geographic site than a previously submitted application;

(ii) an application for amendment of a commercial radioactive waste license for transfer, storage, decay in storage, treatment, or disposal facilities, including incinerators, if the construction would cost 50% or more of the cost of construction of the original transfer, storage, decay in storage, treatment, or disposal facility or the modification would result in an increase in capacity or throughput of a cumulative total of 50% of the total capacity or throughput which was approved in the facility license as of January 1, 1990, or the initial approval facility license if the initial license approval is subsequent to January 1, 1990; or

(iii) any request for approval for a commercial radioactive waste transfer, storage, decay in storage, treatment, or disposal facility to receive class B or class C low-level radioactive waste, including the submission of a new license application, revised license application, or major license amendment.

(2) A person need not obtain gubernatorial or legislative approval for the construction of a radioactive waste facility for which a license application has been approved by the Department of Health or submitted to the federal Nuclear Regulatory Commission and to the Department of Health for approval before January 1, 1990, and which has been determined, on or before October 31, 1990, by the Department of Health to be complete in accordance with state and federal requirements.

(3) The board shall suspend acceptance of further applications for commercial radioactive waste facilities upon a finding that they cannot adequately oversee existing and additional radioactive waste facilities for license compliance, monitoring, and enforcement. The board shall report the suspension to the Legislative Management Committee.

(4) The board shall review each proposed radioactive waste license application to determine whether the application complies with the provisions of this chapter and the rules of the board.

(5) (a) If the radioactive license application is determined to be complete, the board shall issue a notice of completeness.

(b) If the plan is determined by the board to be incomplete, the board shall issue a notice of deficiency, listing the additional information to be provided by the applicant to complete the application.

Amended by Chapter 188, 1994 General Session
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Last revised: Thursday, July 12, 2001

19-3-106. Fee for commercial radioactive waste disposal or treatment.

(1) (a) An owner or operator of a commercial radioactive waste treatment or disposal facility that receives radioactive waste shall collect a fee from the generator of the waste as provided in Subsection (1)(b).

(b) (i) On and after July 1, 1994 through June 30, 2001, the fee is $2.50 per ton, or fraction of a ton, of radioactive waste, other than byproduct material, received at the facility for disposal or treatment.

(ii) On and after July 1, 2001, the fee is equal to the sum of the following amounts:

(A) 10 cents per cubic foot, or fraction of a cubic foot, of radioactive waste, other than byproduct material, received at the facility for disposal or treatment; and

(B) $1 per curie, or fraction of a curie, of radioactive waste, other than byproduct material, received at the facility for disposal or treatment.

(2) (a) The owner or operator shall remit the fees imposed under this section to the department on or before the 15th day of the month following the month in which the fee accrued.

(b) The department shall deposit all fees received under this section into the Environmental Quality Restricted Account created in Section 19-1-108.

(c) The owner or operator shall submit to the department with the payment of the fee under this subsection a completed form as prescribed by the department that provides information the department requires to verify the amount of waste received and the fee amount for which the owner or operator is liable.

(3) The Legislature shall appropriate to the department funds to cover the cost of radioactive waste disposal supervision.

History: C. 1953, 26-1-27.3, enacted by L. 1990, ch. 297, § 4; renumbered by L. 1991, ch. 112, § 71; 1992, ch. 282, § 2; 1995, ch. 324, § 4; 2001, ch. 314, § 3.

Link to 2001 Legislation Affecting this Section

Amendment Notes. - The 1995 amendment, effective July 1, 1995, substituted "restricted account created in Section 19-1-108" for "General Fund" in Subsection (2)(b); deleted former Subsection (3), relating to disposition of radioactive waste disposal fees; and redesignated former Subsection (4) as Subsection (3).

The 2001 amendment, effective April 30, 2001, rewrote Subsection (1) and made stylistic changes in Subsection (2).

19-3-106.2. Fee for perpetual care and maintenance of commercial radioactive waste disposal facilities - Radioactive Waste Perpetual Care and Maintenance Fund created - Contents - Use of fund monies.

(1) As used in this section, "perpetual care and maintenance" means perpetual care and maintenance of a commercial radioactive waste treatment or disposal facility, excluding sites within the facility used for the disposal of byproduct material, as required by applicable laws, rules, and license requirements beginning 100 years after the date of final closure of the facility.

(2) (a) On and after July 1, 2002, the owner or operator of an active commercial radioactive waste treatment or disposal facility shall pay an annual fee of $400,000 to provide for the perpetual care and maintenance of the facility.

(b) The owner or operator shall remit the fee to the department on or before July 1.

(3) The department shall deposit fees received under Subsection (2) into the Radioactive Waste Perpetual Care and Maintenance Fund created in Subsection (4).

(4) (a) There is created the Radioactive Waste Perpetual Care and Maintenance Fund to finance perpetual care and maintenance of commercial radioactive waste treatment or disposal facilities, excluding sites within those facilities used for the disposal of byproduct material.

(b) The sources of revenue for the fund are:

(i) the fee imposed under this section; and

(ii) investment income derived from money in the fund.

(c) (i) The revenues for the fund shall be segregated into subaccounts for each commercial radioactive waste treatment or disposal facility covered by the fund.

(ii) Each subaccount shall contain:

(A) the fees paid by each owner or operator of a commercial radioactive waste treatment or disposal facility; and

(B) the associated investment income.

(5) The Legislature may appropriate money from the Radioactive Waste Perpetual Care and Maintenance Fund for:

(a) perpetual care and maintenance of a commercial radioactive waste treatment or disposal facility, excluding sites within the facility used for the disposal of byproduct material, beginning 100 years after the date of final closure of the facility; or

(b) maintenance or monitoring of, or implementing corrective action at, a commercial radioactive waste treatment or disposal facility, excluding sites within the facility used for the disposal of byproduct material, before the end of 100 years after the date of final closure of the facility, if:

(i) the owner or operator is unwilling or unable to carry out postclosure maintenance, monitoring, or corrective action; and

(ii) the financial surety arrangements made by the owner or operator, including any required under applicable law, are insufficient to cover the costs of postclosure maintenance, monitoring, or corrective action.

(6) The money appropriated from the Radioactive Waste Perpetual Care and Maintenance Fund for the purposes specified in Subsection (5)(a) or (5)(b) at a particular commercial radioactive waste treatment or disposal facility may be appropriated only from the subaccount established under Subsection (4)(c) for the facility.

(7) The attorney general shall bring legal action against the owner or operator or take other steps to secure the recovery or reimbursement of the costs of maintenance, monitoring, or corrective action, including legal costs, incurred pursuant to Subsection (5)(b).

(8) (a) The board shall direct an evaluation of the adequacy of the Radioactive Waste Perpetual Care and Maintenance Fund every five years, beginning in 2006. The evaluation shall determine whether the fund is adequate to provide for perpetual care and maintenance of commercial radioactive waste treatment or disposal facilities.

(b) The board shall submit a report on the evaluation to the Legislative Management Committee on or before October 1 of the year in which the report is due.

(9) This section does not apply to a uranium mill licensed under 10 C.F.R. Part 40, Domestic Licensing of Source Material.

History: C. 1953, 19-3-106.2, enacted by L. 2001, ch. 314, § 4.

Link to 2001 Legislation Affecting this Section

Effective Dates. - Laws 2001, ch. 314 became effective on April 30, 2001, pursuant to Utah Const., Art. VI, Sec. 25.

19-3-106.4. Generator site access permits.

1) A generator or broker may not transfer radioactive waste to a commercial radioactive waste treatment or disposal facility in the state without first obtaining a generator site access permit from the executive secretary.

(2) The board may make rules pursuant to Section 19-3-104 governing a generator site access permit program.

(3) (a) Except as provided in Subsection (3)(b), the department shall establish fees for generator site access permits in accordance with Section 63-38-3.2.

(b) On and after July 1, 2001 through June 30, 2002, the fees are:

(i) $1,300 for generators transferring 1,000 or more cubic feet of radioactive waste per year;

(ii) $500 for generators transferring less than 1,000 cubic feet of radioactive waste per year; and

(iii) $5,000 for brokers.

(c) The department shall deposit fees received under this section into the Environmental Quality Restricted Account created in Section 19-1-108.

(4) This section does not apply to a generator or broker transferring radioactive waste to a uranium mill licensed under 10 C.F.R. Part 40, Domestic Licensing of Source Material.

History: C. 1953, 19-3-106.4, enacted by L. 2001, ch. 314, § 5.

Link to 2001 Legislation Affecting this Section

Effective Dates. - Laws 2001, ch. 314 became effective on April 30, 2001, pursuant to Utah Const., Art. VI, Sec. 25.

19-3-107. State radioactive waste plan.

1) The board shall prepare a state plan for management of radioactive waste by July 1, 1993.

(2) The plan shall:

(a) provide an estimate of radioactive waste capacity needed in the state for the next 20 years;

(b) assess the state's ability to minimize waste and recycle;

(c) evaluate radioactive waste treatment and disposal options, as well as radioactive waste needs and existing capacity;

(d) evaluate facility siting, design, and operation;

(e) review funding alternatives for radioactive waste management; and

(f) address other radioactive waste management concerns that the board finds appropriate for the preservation of the public health and the environment.

History: C. 1953, 26-1-27.4, enacted by L. 1990, ch. 297, § 5; renumbered by L. 1991, ch. 112, § 72.

Compiler's Notes. - The radioactive waste management plan prepared under Subsection (1) may be viewed at the offices of the Division of Radiation Control.

19-3-108. Powers and duties of executive secretary.

1) The executive director shall appoint an executive secretary, with the approval of the board, to serve under the direction of the executive director.

(2) The executive secretary may:

(a) develop programs to promote and protect the public from radiation sources in the state;

(b) advise, consult, and cooperate with other agencies, states, the federal government, political subdivisions, industries, and other groups to further the purposes of this chapter;

(c) as authorized by the board:

(i) issue licenses, registrations, and certifications;

(ii) review and approve plans;

(iii) enforce rules through the issuance of orders and assess penalties in accordance with Section 19-3-109;

(iv) impound radioactive material under Section 19-3-111; and

(v) authorize employees or representatives of the department to enter at reasonable times and upon reasonable notice in and upon public or private property for the purpose of inspecting and investigating conditions and records concerning radiation sources.

History: C. 1953, 19-3-108, enacted by L. 1991, ch. 112, § 73.

Administrative Rules. - This section is implemented by, interpreted by, or cited as authority for the following administrative rule(s): R313-12, R313-15, R313-18, R313-19, R313-22, R313-25, R313-32, R313-35, R313-36.

19-3-109. Civil penalties - Appeals.

1) A person who violates any provision of Sections 19-3-104 through 19-3-113, any rule or order issued under the authority of those sections, or the terms of a license, permit, or registration certificate issued under the authority of those sections is subject to a civil penalty not to exceed $5,000 for each violation.

(2) The board may assess and make a demand for payment of a penalty under this section and may compromise or remit that penalty.

(3) In order to make demand for payment of a penalty assessed under this section, the board shall issue a notice of agency action, specifying, in addition to the requirements for notices of agency action contained in Title 63, Chapter 46b, Administrative Procedures Act:

(a) the date, facts, and nature of each act or omission charged;

(b) the provision of the statute, rule, order, license, permit, or registration certificate that is alleged to have been violated;

(c) each penalty that the bureau proposes to impose, together with the amount and date of effect of that penalty; and

(d) that failure to pay the penalty or respond may result in a civil action for collection.

(4) A person notified according to Subsection (3) may request an adjudicative proceeding.

(5) Upon request by the board, the attorney general may institute a civil action to collect a penalty imposed under this section.

(6) (a) Except as provided in Subsection (b), the department shall deposit all monies collected from civil penalties imposed under this section into the General Fund.

(b) The department may reimburse itself and local governments from monies collected from civil penalties for extraordinary expenses incurred in environmental enforcement activities.

(c) The department shall regulate reimbursements by making rules that:

(i) define qualifying environmental enforcement activities; and

(ii) define qualifying extraordinary expenses.

History: C. 1953, 26-1-28.1, enacted by L. 1986, ch. 163, § 1; 1987, ch. 161, § 47; 1989, ch. 238, § 1; renumbered by L. 1991, ch. 112, § 74.

Administrative Rules. - This section is implemented by, interpreted by, or cited as authority for the following administrative rule(s): R313-14.

19-3-110. Criminal penalties.

1) Any person who knowingly violates any provision of Sections 19-3-104 through 19-3-113 or lawful orders or rules adopted by the department under those sections shall in a criminal proceeding:

(a) for the first violation, be guilty of a class B misdemeanor; and

(b) for a subsequent similar violation within two years, be guilty of a third degree felony.

(2) In addition, a person is liable for any expense incurred by the department in removing or abating any violation.

(3) Conviction under Sections 19-3-104 through 19-3-113 does not relieve the person convicted from civil liability for any act which was also a violation of the public health laws.

History: C. 1953, 19-3-110, enacted by L. 1991, ch. 112, § 75; 1998, ch. 271, § 2.

Amendment Notes. - The 1998 amendment, effective May 4, 1998, substituted "third degree felony" for "class A misdemeanor" at the end of Subsection (1)(b).

Cross-References. - Sentencing for felonies, §§ 76-3-201, 76-3-203, 76-3-301.

Sentencing for misdemeanors, §§ 76-3-201, 76-3-204, 76-3-301.

19-3-111. Impounding of radioactive material.

1) The board may impound the radioactive material of any person if:

(a) the material poses an imminent threat or danger to the public health or safety; or

(b) that person is violating:

(i) any provision of Sections 19-3-104 through 19-3-113;

(ii) any rules or orders enacted or issued under the authority of those sections; or

(iii) the terms of a license, permit, or registration certificate issued under the authority of those sections.

(2) Before any dispositive action may be taken with regard to impounded radioactive materials, the board shall comply with the procedures and requirements of Title 63, Chapter 46b, Administrative Procedures Act.

History: C. 1953, 26-1-28.1, enacted by L. 1986, ch. 164, § 1; recompiled as 26-1-28.2; L. 1987, ch. 161, § 48; 1991, ch. 87, § 1; renumbered by L. 1991, ch. 112, § 76.

Administrative Rules. - This section is implemented by, interpreted by, or cited as authority for the following administrative rule(s): R313-14.

19-3-112. Notification by the department to certain persons of release of radiation from Nevada Test Site - Notification to certain news outlets.

(1) When informed by the United States Department of Energy of any release of radiation exceeding the Nuclear Regulatory Commission's limits for unrestricted use in air or water from the Nevada Test Site which is detected outside its boundaries, the department shall, unless prohibited by federal law, immediately convey to the persons specified in Subsection (2) all information that is made available to it, including:

(a) the date;

(b) the time and duration of each release of radiation;

(c) estimates of total amounts of radiation released;

(d) the types and amounts of each isotope detected off-site;

(e) the locations of monitoring stations detecting off-site radiation; and

(f) current and projected wind direction, wind velocity, and precipitation for the region.

(2) Unless prohibited by federal law, the department shall provide the information required under Subsection (1) to the following:

(a) members of the Utah congressional delegation or their designated representatives;

(b) the director of the Division of Comprehensive Emergency Management;

(c) the attorney general;

(d) the regional director of the Federal Emergency Management Agency;

(e) the regional director of the National Oceanic and Atmospheric Administration;

(f) the executive director of the Utah League of Cities and Towns;

(g) the executive director of the Department of Health; and

(h) the chairpersons of the county commissions of affected counties.

(3) If the state is informed by the United States Department of Energy that any radiation released from the Nevada Test Site has been detected by the United States Department of Energy or United States Environmental Protection Agency or the department within the boundaries of the state of Utah, the department shall, unless prohibited by federal law, immediately provide all information available to it as specified in Subsection (1) to the Associated Press and United Press International outlets in the state.

History: C. 1953, § 26-1-28.5, enacted by L. 1987, ch. 121, § 1; 1990, ch. 93, § 11; renumbered by L. 1991, ch. 112, § 77.

19-3-113. Federal-state agreement regarding radiation control.

1) The governor, on behalf of the state, may enter into agreements with the federal government providing for discontinuation of the federal government's responsibilities with respect to sources of ionizing radiation and the assumption thereof by the state, pursuant to Section 19-3-104.

(2) Any person who, on the effective date of an agreement under Subsection (1) possesses a license issued by the federal government is considered to possess a federal license pursuant to a license issued by the department which shall expire either 90 days after receipt from the department of a notice of expiration of the license, or on the date of expiration specified in the federal license, whichever is earlier.

History: C. 1953, 26-1-29, enacted by L. 1981, ch. 126, § 2; renumbered by L. 1991, ch. 112, § 78.

Administrative Rules. - This section is implemented by, interpreted by, or cited as authority for the following administrative rule(s): R313-38.

19-3-201. Interstate Compact on Low-level Radioactive Waste - Policy and purpose of compact.

The party states recognize that low-level radioactive wastes are generated by essential activities and services that benefit the citizens of the states. It is further recognized that the protection of the health and safety of the citizens of the party states and the most economical management of low-level radioactive wastes can be accomplished through cooperation of the states in minimizing the amount of handling and transportation required to dispose of the wastes and through the cooperation of the states in providing facilities that serve the region. It is the policy of the party states to undertake the necessary cooperation to protect the health and safety of the citizens of the party states and to provide for the most economical management of low-level radioactive wastes on a continuing basis. It is the purpose of this compact to provide the means for a cooperative effort among the party states so that the protection of the citizens of the states and the maintenance of the viability of the states' economies will be enhanced while sharing the responsibilities of radioactive low-level waste management.

History: L. 1982, ch. 37, § 1; c. 1953, 26-14c-1; renumbered by L. 1991, ch. 112, § 79.

COLLATERAL REFERENCES

Am. Jur. 2d. - 61A Am. Jur. 2d Pollution Control § 244 et seq.

A.L.R. - Validity of local regulation of hazardous waste, 67 A.L.R.4th 822.

State or local regulation of transportation of hazardous materials as pre-empted by Hazardous Materials Transportation Act (49 USCS § 1801 et seq.), 78 A.L.R. Fed. 289.

19-3-201.1. Definitions.

As used in this compact:

(1) "Facility" means any site, location, structure, or property used or to be used for the storage, treatment, or disposal of low-level waste, excluding federal waste facilities.

(2) "Generator" means any person, partnership, association, corporation, or any other entity whatsoever which, as a part of its activities, produces low-level radioactive waste.

(3) "Host state" means a state in which a facility is located.

(4) (a) "Low-level waste" means waste material which contains radioactive nuclides emitting primarily beta or gamma radiation, or both, in concentrations or quantities which exceed applicable federal or state standards for unrestricted release.

(b) "Low-level waste" does not include waste containing more than ten nanocuries of transuranic contaminants per gram of material, nor spent reactor fuel, nor material classified as either high-level waste or waste which is unsuited for disposal by near-surface burial under any applicable federal regulations.

History: C. 1953, 19-3-201.1, enacted by L. 2001, ch. 314, § 6.

Link to 2001 Legislation Affecting this Section

Effective Dates. - Laws 2001, ch. 314 became effective on April 30, 2001, pursuant to Utah Const., Art. VI, Sec. 25.

19-3-202. Practices of party states regarding low-level waste shipments - Fees for inspections.

1) Each party state agrees to adopt practices which will require low-level waste shipments originating within its borders and destined for a facility within another party state to conform to the applicable packaging and transportation requirements and regulations of the host state including:

(a) maintaining an inventory of all generators within the state that have shipped or expect to ship low-level waste to facilities in another party state;

(b) periodic unannounced inspection of the premises of the generators and the waste management activities on the premises;

(c) authorization of the containers in which the waste may be shipped, and a requirement that generators use only the type of containers authorized by the state;

(d) assurance that inspections of the carriers which transport the waste are conducted by proper authorities, and appropriate enforcement action taken for violations; and

(e) after receiving notification from a host state that a generator within the party state is in violation of applicable packaging or transportation standards, taking appropriate action to assure that the violations do not recur including the inspection of every individual low-level waste shipment by that generator.

(2) Each party state may impose fees upon generators and shippers to recover the cost of the inspections and other practices under this compact.

(3) Nothing in this section limits any party state's authority to impose additional or more stringent standards on generators or carriers than those required under this section.

History: L. 1982, ch. 37, § 3; c. 1953, 26-14c-3; renumbered by L. 1991, ch. 112, § 80.

19-3-203. Acceptance of low-level waste by facilities in party states - Requirements for acceptance of waste generated outside region of party states - Cooperation in determining site of facility required within region of party states - Allowance of access to low-level waste and hazardous chemical waste disposal facilities by certain party states - Establishment of fees and requirements by host states.

(1) Facilities located in any party state, other than facilities established or maintained by individual low-level waste generators for the management of that party state's own low-level waste, shall accept low-level waste generated in any party state if the waste has been packaged and transported according to applicable laws and regulations.

(2) No facility located in any party state may accept low-level waste generated outside of the region comprised of the party states, except as provided in Section 19-3-204.

(3) Until Subsection (2) takes effect, facilities located in any party state may accept low-level waste generated outside of any of the party states only if the waste is accompanied by a certificate of compliance issued by an official of the state in which the waste shipment originated. The certificate shall be in the form required by the host state, and shall contain at least the following:

(a) the generator's name and address;

(b) a description of the contents of the low-level waste container;

(c) a statement that the low-level waste being shipped has been inspected by the official who issued the certificate or by his or her agent or by a representative of the United States Nuclear Regulatory Commission, and found to have been packaged in compliance with applicable federal regulations;

(d) additional requirements imposed by the host state; and

(e) a binding agreement by the state of origin to reimburse any party state for any liability or expense incurred as a result of an accidental release of the waste during shipment or after the waste reaches the facility.

(4) (a) Each party state shall cooperate with the other party states in determining the appropriate site of any facility that may be required within the region comprised of the party states, in order to maximize public health and safety while minimizing the use of any party state as the host of the facilities on a permanent basis.

(b) Each party state further agrees that decisions regarding low-level waste management facilities in its region will be reached through a good faith process which takes into account the burdens borne by each of the party states as well as the benefits each has received.

(5) (a) The party states recognize that the issue of hazardous chemical waste management is similar in many respects to that of low-level waste management. Therefore, in consideration of the state of Washington allowing access to its low-level waste disposal facility by generators in other party states, party states such as Oregon and Idaho which host hazardous chemical waste disposal facilities will allow access to the facilities by generators within other party states.

(b) Nothing in this compact prevents any party state from limiting the nature and type of hazardous chemical or low-level wastes to be accepted at facilities within its borders or from ordering the closure of the facilities, so long as the action by a host state is applied equally to all generators within the region comprised of the party states.

(6) Any host state may establish a schedule of fees and requirements related to its facility, to assure that closure, perpetual care, maintenance, and contingency requirements are met including adequate bonding.

History: L. 1982, ch. 37, § 4; c. 1953, 26-14c-4; renumbered by L. 1991, ch. 112, § 81.

19-3-204. Governor to designate state official to administer compact - Designated officials comprise northwest low-level waste compact committee - Meetings of committee - Duties relating to existing regulations - Authority to make arrangements with entities outside region of party states.

(1) The governor of each party state shall designate one state official as the person responsible for administration of this compact. The officials so designated shall together comprise the northwest low-level waste compact committee.

(2) The committee shall meet as required to consider matters arising under this compact.

(3) The parties shall inform the committee of existing regulations concerning low-level waste management in their states and shall afford all parties a reasonable opportunity to review and comment upon any proposed modifications in the regulations.

(4) Notwithstanding any provision of Section 19-3-203 to the contrary, the committee may enter into arrangements with states, provinces, individual generators, or regional compact entities outside the region comprised of the party states for access to facilities on terms and conditions the committee considers appropriate. However, a two-thirds vote of all members is required, including the affirmative vote of the member of any party state in which a facility affected by the arrangement is located, for the committee to enter into an arrangement.

History: L. 1982, ch. 37, § 5; c. 1953, 26-14c-5; renumbered by L. 1991, ch. 112, § 82.

19-3-205. Eligible party states - Requirements regarding joinder and withdrawal from compact - Consent of Congress.

(1) Each of the following states is eligible to become a party to this compact: Alaska, Hawaii, Idaho, Montana, Oregon, Utah, Washington, and Wyoming. As to any eligible party, this compact becomes effective upon enactment into law by that party, but it is not initially effective until enacted into law by two states. Any party state may withdraw from this compact by enacting a statute repealing its approval.

(2) After the compact has initially taken effect under Subsection (1), any eligible party state may become a party to this compact by the execution of an executive order by the governor of the state. Any state which becomes a party in this manner shall cease to be a party upon the final adjournment of the next general or regular session of its legislature or July 1, 1983, whichever occurs first, unless the compact has by then been enacted as a statute by that state.

(3) Section 19-3-203 takes effect on July 1, 1983, if consent is given by Congress. As provided in Public Law 96-573, Congress may withdraw its consent to the compact after every five-year period.

History: L. 1982, ch. 37, § 6; c. 1953, 26-14c-6; renumbered by L. 1991, ch. 112, § 83.

Federal Law. - Public Law 96-573 is codified as 42 U.S.C. § 2021b et seq.

Utah Radiation Control Rules

UTAH RADIATION CONTROL RULES

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UTAH RADIATION CONTROL RULES

CHAPTER R313-12
GENERAL PROVISIONS

R313. Environmental Quality, Radiation Control.

R313-12. General Provisions.

R313-12-1. Authority.

The rules set forth herein are adopted pursuant to the provisions of Subsections 19-3-104(3) and 19-3-104(6) and Section 63-38-3.

R313-12-2. Purpose and Scope.

It is the purpose of these rules to state such requirements as shall be applied in the use of radiation, radiation machines, and radioactive materials to ensure the maximum protection of the public health and safety to all persons at, or in the vicinity of, the place of use, storage, or disposal. These rules are intended to be consistent with the proper use of radiation machines and radioactive materials. Except as otherwise specifically provided, these rules apply to all persons who receive, possess, use, transfer, own or acquire any source of radiation, provided, however, that nothing in these rules shall apply to any person to the extent such person is subject to regulation by the U.S. Nuclear Regulatory Commission. See also Section R313-12-55.

R313-12-3. Definitions.

As used in these rules, these terms shall have the definitions set forth below. Additional definitions used only in a certain rule will be found in that rule.

"A_1" means the maximum activity of special form radioactive material permitted in a Type A package.

"A_2" means the maximum activity of radioactive material, other than special form radioactive material, low specific activity, and surface contaminated object material permitted in a Type A package. These values are either listed in 10 CFR 71, Appendix A, which is incorporated by reference in Section R313-19-100 or may be derived in accordance with the procedures prescribed in 10 CFR 71, Appendix A, which is incorporated by reference in Section R313-19-100.

"Absorbed dose" means the energy imparted by ionizing radiation per unit mass of irradiated material. The units of absorbed dose are the gray (Gy) and the rad.

"Accelerator produced material" means a material made radioactive by a particle accelerator.

"Act" means Utah Radiation Control Act, Title 19, Chapter 3.

"Activity" means the rate of disintegration or transformation or decay of radioactive material. The units of activity are the becquerel (Bq) and the curie (Ci).

"Adult" means an individual 18 or more years of age.

"Address of use" means the building that is identified on the license and where radioactive material may be received, used or stored.

"Agreement State" means a state with which the United States Nuclear Regulatory Commission has entered into an effective agreement under Section 274 b. of the Atomic Energy Act of 1954, as amended (73 Stat. 689).

"Airborne radioactive material" means a radioactive material dispersed in the air in the form of dusts, fumes, particulates,

mists, vapors, or gases.

"Airborne radioactivity area" means: a room, enclosure, or area in which airborne radioactive material exists in concentrations:

(a) In excess of the derived air concentrations (DACs), specified in Rule R313-15, or

(b) To such a degree that an individual present in the area without respiratory protective equipment could exceed, during the hours an individual is present in a week, an intake of 0.6 percent of the annual limit on intake (ALI), or 12 DAC hours.

"As low as reasonably achievable" (ALARA) means making every reasonable effort to maintain exposures to radiation as far below the dose limits as is practical, consistent with the purpose for which the licensed or registered activity is undertaken, taking into account the state of technology, the economics of improvements in relation to state of technology, the economics of improvements in relation to benefits to the public health and safety, and other societal and socioeconomic considerations, and in relation to utilization of nuclear energy and licensed or registered sources of radiation in the public interest.

"Area of use" means a portion of an address of use that has been set aside for the purpose of receiving, using, or storing radioactive material.

"Background radiation" means radiation from cosmic sources; naturally occurring radioactive materials, including radon, except as a decay product of source or special nuclear material, and including global fallout as it exists in the environment from the testing of nuclear explosive devices or from past nuclear accidents such as Chernobyl that contribute to background radiation and are not under the control of the licensee. "Background radiation" does not include sources of radiation from radioactive materials regulated by the Department under the Radiation Control Act or Rules.

"Becquerel" (Bq) means the SI unit of activity. One becquerel is equal to one disintegration or transformation per second.

"Bioassay" means the determination of kinds, quantities or concentrations, and in some cases, the locations of radioactive material in the human body, whether by direct measurement, in vivo counting, or by analysis and evaluation of materials excreted or removed from the human body. For purposes of these rules, "radiobioassay" is an equivalent term.

"Board" means the Radiation Control Board created under Section 19-1-106.

"Byproduct material" means:

(a) a radioactive material, with the exception of special nuclear material, yielded in or made radioactive by exposure to the radiation incident to the process of producing or utilizing special nuclear material; and

(b) the tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content, including discrete surface wastes resulting from uranium or thorium solution extraction processes. Underground ore bodies depleted by these solution extraction operations do not constitute "byproduct

material" within this definition.

"Calendar quarter" means not less than 12 consecutive weeks nor more than 14 consecutive weeks. The first calendar quarter of the year shall begin in January, and subsequent calendar quarters shall be arranged so that no day is included in more than one calendar quarter and no day in any one year is omitted from inclusion within a calendar quarter. The method observed by the licensee or registrant for determining calendar quarters shall only be changed at the beginning of a year.

"Calibration" means the determination of:

(a) the response or reading of an instrument relative to a series of known radiation values over the range of the instrument; or

(b) the strength of a source of radiation relative to a standard.

"CFR" means Code of Federal Regulations.

"Chelating agent" means a chemical ligand that can form coordination compounds in which the ligand occupies more than one coordination position. The agents include beta diketones, certain proteins, amine polycarboxylic acids, hydroxycarboxylic acids, gluconic acid, and polycarboxylic acids.

"Collective dose" means the sum of the individual doses received in a given period of time by a specified population from exposure to a specified source of radiation.

"Committed dose equivalent" ($H_{T,50}$), means the dose equivalent to organs or tissues of reference (T), that will be received from an intake of radioactive material by an individual during the 50-year period following the intake.

"Committed effective dose equivalent" ($H_{E,50}$), is the sum of the products of the weighting factors applicable to each of the body organs or tissues that are irradiated and the committed dose equivalent to each of these organs or tissues.

"Controlled area" means an area, outside of a restricted area but inside the site boundary, access to which can be limited by the licensee or registrant for any reason.

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

"Curie" means a unit of measurement of activity. One curie (Ci) is that quantity of radioactive material which decays at the rate of 3.7×10^{10} disintegrations or transformations per second (dps or tps).

"Decommission" means to remove a facility or site safely from service and reduce residual radioactivity to a level that permits:

(a) release of property for unrestricted use and termination of the license; or

(b) release of the property under restricted conditions and termination of the license.

"Deep dose equivalent" (H_d), which applies to external whole body exposure, means the dose equivalent at a tissue depth of one centimeter (1000 mg/cm^2).

"Department" means the Utah State Department of Environmental Quality.

"Depleted uranium" means the source material uranium in which

the isotope uranium-235 is less than 0.711 weight percent of the total uranium present. Depleted uranium does not include special nuclear material.

"Distinguishable from background" means that the detectable concentration of a radionuclide is statistically different from the background concentration of that radionuclide in the vicinity of the site or, in the case of structures, in similar materials using adequate measurement technology, survey, and statistical techniques.

"Dose" is a generic term that means absorbed dose, dose equivalent, effective dose equivalent, committed dose equivalent, committed effective dose equivalent, or total effective dose equivalent. For purposes of these rules, "radiation dose" is an equivalent term.

"Dose equivalent" (H_T), means the product of the absorbed dose in tissue, quality factor, and other necessary modifying factors at the location of interest. The units of dose equivalent are the sievert (Sv) and rem.

"Dose limits" means the permissible upper bounds of radiation doses established in accordance with these rules. For purpose of these rules, "limits" is an equivalent term.

"Effective dose equivalent" (H_E), means the sum of the products of the dose equivalent to each organ or tissue (H_T), and the weighting factor (w_T,) applicable to each of the body organs or tissues that are irradiated.

"Embryo/fetus" means the developing human organism from conception until the time of birth.

"Entrance or access point" means an opening through which an individual or extremity of an individual could gain access to radiation areas or to licensed or registered radioactive materials. This includes entry or exit portals of sufficient size to permit human entry, irrespective of their intended use.

"Executive Secretary" means the executive secretary of the board.

"Explosive material" means a chemical compound, mixture, or device which produces a substantial instantaneous release of gas and heat spontaneously or by contact with sparks or flame.

"EXPOSURE" when capitalized, means the quotient of dQ by dm where "dQ" is the absolute value of the total charge of the ions of one sign produced in air when all the electrons, both negatrons and positrons, liberated by photons in a volume element of air having a mass of "dm" are completely stopped in air. The special unit of EXPOSURE is the roentgen (R). See Section R313-12-20 Units of exposure and dose for the SI equivalent. For purposes of these rules, this term is used as a noun.

"Exposure" when not capitalized as the above term, means being exposed to ionizing radiation or to radioactive material. For purposes of these rules, this term is used as a verb.

"EXPOSURE rate" means the EXPOSURE per unit of time, such as roentgen per minute and milliroentgen per hour.

"External dose" means that portion of the dose equivalent received from a source of radiation outside the body.

"Extremity" means hand, elbow, arm below the elbow, foot, knee, and leg below the knee.

"Facility" means the location within one building, vehicle, or under one roof and under the same administrative control

(a) at which the use, processing or storage of radioactive material is or was authorized; or

(b) at which one or more radiation-producing machines or radioactivity-inducing machines are installed or located.

"Former United States Atomic Energy Commission (AEC) or United States Nuclear Regulatory Commission (NRC) licensed facilities" means nuclear reactors, nuclear fuel reprocessing plants, uranium enrichment plants, or critical mass experimental facilities where AEC or NRC licenses have been terminated.

"Generally applicable environmental radiation standards" means standards issued by the U.S. Environmental Protection Agency under the authority of the Atomic Energy Act of 1954, as amended, that impose limits on radiation exposures or levels, or concentrations or quantities of radioactive material, in the general environment outside the boundaries of locations under the control of persons possessing or using radioactive material.

"Gray" (Gy) means the SI unit of absorbed dose. One gray is equal to an absorbed dose of one joule per kilogram.

"Hazardous waste" means those wastes designated as hazardous by the U.S. Environmental Protection Agency rules in 40 CFR Part 261.

"Healing arts" means the disciplines of medicine, dentistry, osteopathy, chiropractic, and podiatry.

"High radiation area" means an area, accessible to individuals, in which radiation levels from radiation sources external to the body could result in an individual receiving a dose equivalent in excess of one mSv (0.1 rem), in one hour at 30 centimeters from the source of radiation or from a surface that the radiation penetrates. For purposes of these rules, rooms or areas in which diagnostic x-ray systems are used for healing arts purposes are not considered high radiation areas.

"Human use" means the intentional internal or external administration of radiation or radioactive material to human beings.

"Individual" means a human being.

"Individual monitoring" means the assessment of:

(a) dose equivalent, by the use of individual monitoring devices or, by the use of survey data; or

(b) committed effective dose equivalent by bioassay or by determination of the time weighted air concentrations to which an individual has been exposed, that is, DAC-hours.

"Individual monitoring devices" means devices designed to be worn by a single individual for the assessment of dose equivalent. For purposes of these rules, individual monitoring equipment and personnel monitoring equipment are equivalent terms. Examples of individual monitoring devices are film badges, thermoluminescence dosimeters (TLD's), pocket ionization chambers, and personal air sampling devices.

"Inspection" means an official examination or observation including, but not limited to, tests, surveys, and monitoring to determine compliance with rules, orders, requirements and conditions applicable to radiation sources.

"Interlock" means a device arranged or connected requiring the occurrence of an event or condition before a second condition can occur or continue to occur.

"Internal dose" means that portion of the dose equivalent received from radioactive material taken into the body.

"Lens dose equivalent" (LDE) applies to the external exposure of the lens of the eye and is taken as the dose equivalent at a tissue depth of 0.3 centimeter (300 mg/cm^2).

"License" means a license issued by the Executive Secretary in accordance with the rules adopted by the Board.

"Licensee" means a person who is licensed by the Department in accordance with these rules and the Act.

"Licensed or registered material" means radioactive material, received, possessed, used or transferred or disposed of under a general or specific license issued by the Executive Secretary.

"Licensing state" means a state which has been provisionally or finally designated as such by the Conference of Radiation Control Program Directors, Inc., which reviews state regulations to establish equivalency with the Suggested State Regulations and ascertains whether a State has an effective program for control of natural occurring or accelerator produced radioactive material (NARM). The Conference will designate as Licensing States those states with regulations for control of radiation relating to, and an effective program for, the regulatory control of NARM.

"Limits". See "Dose limits".

"Lost or missing source of radiation" means licensed or registered sources of radiation whose location is unknown. This definition includes, but is not limited to, radioactive material that has been shipped but has not reached its planned destination and whose location cannot be readily traced in the transportation system.

"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. Type A and B quantities are defined in 10 CFR 71.4.

"Member of the public" means an individual except when that individual is receiving an occupational dose.

"Minor" means an individual less than 18 years of age.

"Monitoring" means the measurement of radiation, radioactive material concentrations, surface area activities or quantities of radioactive material, and the use of the results of these measurements to evaluate potential exposures and doses. For purposes of these rules, radiation monitoring and radiation protection monitoring are equivalent terms.

"NARM" means a naturally occurring or accelerator-produced radioactive material. It does not include byproduct, source or special nuclear material.

"NORM" means a naturally occurring radioactive material.

"Natural radioactivity" means radioactivity of naturally occurring nuclides.

"Nuclear Regulatory Commission" (NRC) means the U.S. Nuclear

Regulatory Commission or its duly authorized representatives.

"Occupational dose" means the dose received by an individual in the course of employment in which the individual's assigned duties for the licensee or registrant involve exposure to sources of radiation, whether or not the sources of radiation are in the possession of the licensee, registrant, or other person. Occupational dose does not include doses received from background radiation, from any medical administration the individual has received, from exposure to individuals administered radioactive material and released in accordance with Section R313-32-75, from voluntary participation in medical research programs, or as a member of the public.

"Package" means the packaging together with its radioactive contents as presented for transport.

"Particle accelerator" means a machine capable of accelerating electrons, protons, deuterons, or other charged particles in a vacuum and of discharging the resultant particulate or other radiation into a medium at energies usually in excess of one MeV.

"Permit" means a permit issued by the Executive Secretary in accordance with the rules adopted by the Board.

"Permitee" means a person who is permitted by the Department in accordance with these rules and the Act.

"Person" means an individual, corporation, partnership, firm, association, trust, estate, public or private institution, group, agency, political subdivision of this state, or another state or political subdivision or agency thereof, and a legal successor, representative, agent or agency of the foregoing.

"Personnel monitoring equipment," see individual monitoring devices.

"Pharmacist" means an individual licensed by this state to practice pharmacy. See Sections 58-17a-101 through 58-17a-801.

"Physician" means an individual licensed by this state to practice medicine and surgery in all its branches. See Sections 58-67-101 through 58-67-803.

"Practitioner" means an individual licensed by this state in the practice of a healing art. Examples would be, physician, dentist, podiatrist, osteopath, and chiropractor.

"Protective apron" means an apron made of radiation-attenuating materials used to reduce exposure to radiation.

"Public dose" means the dose received by a member of the public from sources of radiation from licensed or registered operations. Public dose does not include occupational dose or doses received from background radiation, from any medical administration the individual has received, from exposure to individuals administered radioactive material and released in accordance with Section R313-32-75, or from voluntary participation in medical research programs.

"Pyrophoric material" means any liquid that ignites spontaneously in dry or moist air at or below 130 degrees Fahrenheit (54.4 degrees Celsius) or any solid material, other than one classed as an explosive, which under normal conditions is liable to cause fires through friction, retained heat from manufacturing or processing, or which can be ignited and, when ignited, burns so vigorously and persistently as to create a

serious transportation, handling, or disposal hazard. Included are spontaneously combustible and water-reactive materials.

"Quality factor" (Q) means the modifying factor, listed in Tables 1 and 2 of Section R313-12-20 that is used to derive dose equivalent from absorbed dose.

"Rad" means the special unit of absorbed dose. One rad is equal to an absorbed dose of 100 erg per gram or 0.01 joule per kilogram

"Radiation" means alpha particles, beta particles, gamma rays, x-rays, neutrons, high speed electrons, high speed protons, and other particles capable of producing ions. For purposes of these rules, ionizing radiation is an equivalent term. Radiation, as used in these rules, does not include non-ionizing radiation, like radiowaves or microwaves, visible, infrared, or ultraviolet light.

"Radiation area" means an area, accessible to individuals, in which radiation levels could result in an individual receiving a dose equivalent in excess of 0.05 mSv (0.005 rem), in one hour at 30 centimeters from the source of radiation or from a surface that the radiation penetrates.

"Radiation machine" means a device capable of producing radiation except those devices with radioactive material as the only source of radiation.

"Radiation safety officer" means an individual who has the knowledge and responsibility to apply appropriate radiation protection rules and has been assigned such responsibility by the licensee or registrant.

"Radiation source". See "Source of radiation."

"Radioactive material" means a solid, liquid, or gas which emits radiation spontaneously.

"Radioactivity" means the transformation of unstable atomic nuclei by the emission of radiation.

"Radiobioassay". See "Bioassay".

"Registrant" means any person who is registered with respect to radioactive materials or radiation machines with the Executive Secretary or is legally obligated to register with the Executive Secretary pursuant to these rules and the Act.

"Registration" means registration with the Department in accordance with the rules adopted by the Board.

"Regulations of the U.S. Department of Transportation" means 49 CFR 100 through 189.

"Rem" means the special unit of any of the quantities expressed as dose equivalent. The dose equivalent in rem is equal to the absorbed dose in rad multiplied by the quality factor. One rem equals 0.01 sievert (Sv).

"Research and development" means:

(a) theoretical analysis, exploration, or experimentation; or

(b) the extension of investigative findings and theories of a scientific or technical nature into practical application for experimental and demonstration purposes, including the experimental production and testing of models, devices, equipment, materials, and processes. Research and development does not include the internal or external administration of radiation or radioactive material to human beings.

"Residual radioactivity" means radioactivity in structures,

materials, soils, groundwater, and other media at a site resulting from activities under the licensee's control. This includes radioactivity from all licensed and unlicensed sources used by the licensee, but excludes background radiation. It also includes radioactive materials remaining at the site as a result of routine or accidental releases of radioactive material at the site and previous burials at the site, even if those burials were made in accordance with the provisions of Rule R313-15.

"Restricted area" means an area, access to which is limited by the licensee or registrant for the purpose of protecting individuals against undue risks from exposure to sources of radiation. A "Restricted area" does not include areas used as residential quarters, but separate rooms in a residential building may be set apart as a restricted area.

"Roentgen" (R) means the special unit of EXPOSURE. One roentgen equals 2.58 x 10^{-4} coulombs per kilogram of air. See EXPOSURE.

"Sealed source" means radioactive material that is permanently bonded or fixed in a capsule or matrix designed to prevent release and dispersal of the radioactive material under the most severe conditions which are likely to be encountered in normal use and handling.

"Shallow dose equivalent" (H_s) which applies to the external exposure of the skin or an extremity, means the dose equivalent at a tissue depth of 0.007 centimeter (seven mg per cm^2), averaged over an area of one square centimeter.

"SI" means an abbreviation of the International System of Units.

"Sievert" (Sv) means the SI unit of any of the quantities expressed as dose equivalent. The dose equivalent in sievert is equal to the absorbed dose in gray multiplied by the quality factor. One Sv equals 100 rem.

"Site boundary" means that line beyond which the land or property is not owned, leased, or otherwise controlled by the licensee or registrant.

"Source container" means a device in which sealed sources are transported or stored.

"Source material" means:

(a) uranium or thorium, or any combination thereof, in any physical or chemical form, or

(b) ores that contain by weight one-twentieth of one percent (0.05 percent), or more of, uranium, thorium, or any combination of uranium and thorium. Source material does not include special nuclear material.

"Source material milling" means any activity that results in the production of byproduct material as defined by (b) of "byproduct material".

"Source of radiation" means any radioactive material, or a device or equipment emitting or capable of producing ionizing radiation.

"Special form radioactive material" means radioactive material which satisfies the following conditions:

(a) it is either a single solid piece or is contained in a sealed capsule that can be opened only by destroying the capsule;

(b) the piece or capsule has at least one dimension not less than five millimeters (0.197 inch); and

(c) it satisfies the test requirements specified by the U.S. Nuclear Regulatory Commission in 10 CFR 71.75. A special form encapsulation designed in accordance with the U.S. Nuclear Regulatory Commission requirements in effect on June 30, 1983, and constructed prior to July 1, 1985, may continue to be used. A special form encapsulation designed in accordance with the requirements of Section 71.4 in effect on March 31, 1996, (see 10 CFR 71 revised January 1, 1983), and constructed before April 1, 1998, may continue to be used. Any other special form encapsulation must meet the specifications of this definition.

"Special nuclear material" means:

(a) plutonium, uranium-233, uranium enriched in the isotope 233 or in the isotope 235, and other material that the U.S. Nuclear Regulatory Commission, pursuant to the provisions of section 51 of the Atomic Energy Act of 1954, as amended, determines to be special nuclear material, but does not include source material; or

(b) any material artificially enriched by any of the foregoing but does not include source material.

"Special nuclear material in quantities not sufficient to form a critical mass" means uranium enriched in the isotope U-235 in quantities not exceeding 350 grams of contained U-235; uranium-233 in quantities not exceeding 200 grams; plutonium in quantities not exceeding 200 grams or a combination of them in accordance with the following formula: For each kind of special nuclear material, determine the ratio between the quantity of that special nuclear material and the quantity specified above for the same kind of special nuclear material. The sum of such ratios for all of the kinds of special nuclear material in combination shall not exceed one. For example, the following quantities in combination would not exceed the limitation and are within the formula:

((175(Grams contained U-235)/350) + (50(Grams U-233/200) + (50(Grams Pu)/200)) is equal to one.

"Survey" means an evaluation of the radiological conditions and potential hazards incident to the production, use, transfer, release, disposal, or presence of sources of radiation. When appropriate, such evaluation includes, but is not limited to, tests, physical examinations and measurements of levels of radiation or concentrations of radioactive material present.

"Test" means the process of verifying compliance with an applicable rule.

"These rules" means "Utah Radiation Control Rules".

"Total effective dose equivalent" (TEDE) means the sum of the deep dose equivalent for external exposures and the committed effective dose equivalent for internal exposures.

"Total organ dose equivalent" (TODE) means the sum of the deep dose equivalent and the committed dose equivalent to the organ receiving the highest dose as described in Subsection R313-15-1107(1)(f).

"U.S. Department of Energy" means the Department of Energy established by Public Law 95-91, August 4, 1977, 91 Stat. 565, 42 U.S.C. 7101 et seq., to the extent that the Department exercises functions formerly vested in the U.S. Atomic Energy Commission, its

Chairman, members, officers and components and transferred to the U.S. Energy Research and Development Administration and to the Administrator thereof pursuant to sections 104(b), (c), and (d) of Public Law 93-438, October 11, 1974, 88 Stat. 1233 at 1237, effective January 19, 1975 known as the Energy Reorganization Act of 1974, and retransferred to the Secretary of Energy pursuant to section 301(a) of Public Law 95-91, August 14, 1977, 91 Stat. 565 at 577-578, 42 U.S.C. 7151, effective October 1, 1977 known as the Department of Energy Organization Act.

"Unrefined and unprocessed ore" means ore in its natural form prior to processing, like grinding, roasting, beneficiating or refining.

"Unrestricted area" means an area, to which access is neither limited nor controlled by the licensee or registrant. For purposes of these rules, "uncontrolled area" is an equivalent term.

"Waste" means those low-level radioactive wastes that are acceptable for disposal in a land disposal facility. For the purposes of this definition, low-level waste has the same meaning as in the Low-Level Radioactive Waste Policy Act, P.L. 96-573, as amended by P.L. 99-240, effective January 15, 1986; that is, radioactive waste:

(a) not classified as high-level radioactive waste, spent nuclear fuel, or byproduct material as defined in Section 11e.(2) of the Atomic Energy Act (uranium or thorium tailings and waste) and

(b) classified by the U.S. Nuclear Regulatory Commission as low-level radioactive waste consistent with existing law and in accordance with (a) above.

"Waste collector licensees" means persons licensed to receive and store radioactive wastes prior to disposal or persons licensed to dispose of radioactive waste.

"Week" means seven consecutive days starting on Sunday.

"Whole body" means, for purposes of external exposure, head, trunk including male gonads, arms above the elbow, or legs above the knees.

"Worker" means an individual engaged in work under a license or registration issued by the Executive Secretary and controlled by a licensee or registrant, but does not include the licensee or registrant.

"Working level" (WL), means any combination of short-lived radon daughters in one liter of air that will result in the ultimate emission of 1.3×10^5 MeV of potential alpha particle energy. The short-lived radon daughters are, for radon-222: polonium-218, lead-214, bismuth-214, and polonium-214; and for radon 220: polonium-216, lead-212, bismuth-212, and polonium-212.

"Working level month" (WLM), means an exposure to one working level for 170 hours. 2,000 working hours per year divided by 12 months per year is approximately equal to 170 hours per month.

"Year" means the period of time beginning in January used to determine compliance with the provisions of these rules. The licensee or registrant may change the starting date of the year used to determine compliance by the licensee or registrant provided that the decision to make the change is made not later than December 31 of the previous year. If a licensee or registrant

changes in a year, the licensee or registrant shall assure that no day is omitted or duplicated in consecutive years.

R313-12-20. Units of Exposure and Dose.

(1) As used in these rules, the unit of EXPOSURE is the coulomb per kilogram (C per kg). One roentgen is equal to 2.58 x 10^{-4} coulomb per kilogram of air.

(2) As used in these rules, the units of dose are:

(a) Gray (Gy) is the SI unit of absorbed dose. One gray is equal to an absorbed dose of one joule per kilogram. One gray equals 100 rad.

(b) Rad is the special unit of absorbed dose. One rad is equal to an absorbed dose of 100 erg per gram or 0.01 joule per kilogram. One rad equals 0.01 Gy.

(c) Rem is the special unit of any of the quantities expressed as dose equivalent. The dose equivalent in rem is equal to the absorbed dose in rad multiplied by the quality factor. One rem equals 0.01 Sv.

(d) Sievert (Sv) is the SI unit of any of the quantities expressed as dose equivalent. The dose equivalent in sievert is equal to the absorbed dose in gray multiplied by the quality factor. One Sv equals 100 rem.

(3) As used in these rules, the quality factors for converting absorbed dose to dose equivalent are shown in Table 1.

TABLE 1

Quality Factors and Absorbed Dose Equivalencies

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

For the column in Table 1 labeled "Absorbed Dose Equal to a Unit Dose Equivalent", the absorbed dose in rad is equal to one rem or the absorbed dose in gray is equal to one Sv.

(4) If it is more convenient to measure the neutron fluence rate than to determine the neutron dose equivalent rate in sievert per hour or rem per hour, as provided in Subsection R313-12-20(3), 0.01 Sv of neutron radiation of unknown energies may, for purposes of these rules, be assumed to result from a total fluence of 25 million neutrons per square centimeter incident upon the body. If sufficient information exists to estimate the approximate energy

distribution of the neutrons, the licensee or registrant may use the fluence rate per unit dose equivalent or the appropriate Q value from Table 2 to convert a measured tissue dose in gray or rad to dose equivalent in sievert or rem.

TABLE 2

Mean Quality Factors, Q, and Fluence Per Unit Dose Equivalent for Monoenergetic Neutrons

	Neutron Energy Mev	Quality Factor Q	Fluence per Unit Dose Equivalent neutrons cm^{-2} rem^{-1}	Fluence per Unit Dose Equivalent neutrons cm^{-2} Sv^{-1}
thermal	2.5×10^{-8}	2	980×10^{6}	980×10^{8}
	1×10^{-7}	2	980×10^{6}	980×10^{8}
	1×10^{-6}	2	810×10^{6}	810×10^{8}
	1×10^{-5}	2	810×10^{6}	810×10^{8}
	1×10^{-4}	2	840×10^{6}	840×10^{8}
	1×10^{-3}	2	980×10^{6}	980×10^{8}
	1×10^{-2}	2.5	1010×10^{6}	1010×10^{8}
	1×10^{-1}	7.5	170×10^{6}	170×10^{8}
	5×10^{-1}	11	39×10^{6}	39×10^{8}
	1	11	27×10^{6}	27×10^{8}
	2.5	9	29×10^{6}	29×10^{8}
	5	8	23×10^{6}	23×10^{8}
	7	7	24×10^{6}	24×10^{8}
	10	6.5	24×10^{6}	24×10^{8}
	14	7.5	17×10^{6}	17×10^{8}
	20	8	16×10^{6}	16×10^{8}
	40	7	14×10^{6}	14×10^{8}
	60	5.5	16×10^{6}	16×10^{8}
	1×10^{2}	4	20×10^{6}	20×10^{8}
	2×10^{2}	3.5	19×10^{6}	19×10^{8}
	3×10^{2}	3.5	16×10^{6}	16×10^{8}
	4×10^{2}	3.5	14×10^{6}	14×10^{8}

For the column in Table 2 labeled "Quality Factor", the values of Q are at the point where the dose equivalent is maximum in a 30 cm diameter cylinder tissue-equivalent phantom.

For the columns in Table 2 labeled "Fluence per Unit Dose Equivalent", the values are for monoenergetic neutrons incident normally on a 30 cm diameter cylinder tissue equivalent phantom.

R313-12-40. Units of Radioactivity.

For purposes of these rules, activity is expressed in the SI unit of becquerel (Bq), or in the special unit of curie (Ci), or their multiples, or disintegrations or transformations per unit of time.

(1) One becquerel (Bq) equals one disintegration or transformation per second.

(2) One curie (Ci) equals 3.7×10^{10} disintegrations or transformations per second, which equals 3.7×10^{10} becquerel, which equals 2.22×10^{12} disintegrations or transformations per minute.

R313-12-51. Records.

(1) A licensee or registrant shall maintain records showing the receipt, transfer, and disposal of all sources of radiation.

(2) Prior to license termination, each licensee authorized to possess radioactive material with a half-life greater than 120 days, in an unsealed form, may forward the following records to the Executive Secretary:

(a) records of disposal of licensed material made under Sections R313-15-1002 (including burials authorized before January 28, 1981), R313-15-1003, R313-15-1004, and R313-15-1005; and

(b) records required by Subsection R313-15-1103(2)(d).

NOTE: 10 CFR 20.304 permitted burial of small quantities of licensed materials in soil before January 28, 1981, without specific U.S. Nuclear Regulatory Commission authorization. See 20.304 contained in the 10 CFR, parts 0 to 199, edition revised as of January 1, 1981.

(3) If licensed activities are transferred or assigned in accordance with Subsection R313-19-34(2), each licensee authorized to possess radioactive material, with a half-life greater than 120 days, in an unsealed form, shall transfer the following records to the new licensee and the new licensee will be responsible for maintaining these records until the license is terminated:

(a) records of disposal of licensed material made under Sections R313-15-1002 (including burials authorized before January 28, 1981), R313-15-1003, R313-15-1004, and R313-15-1005; and

(b) records required by Subsection R313-15-1103(2)(d).

(4) Prior to license termination, each licensee may forward the records required by Subsection R313-22-35(7) to the Executive Secretary.

(5) Additional records requirements are specified elsewhere in these rules.

R313-12-52. Inspections.

(1) A licensee or registrant shall afford representatives of the Executive Secretary, at reasonable times, opportunity to inspect sources of radiation and the premises and facilities wherein those sources of radiation are used or stored.

(2) A licensee or registrant shall make available to representatives of the Executive Secretary for inspection, upon reasonable notice, records maintained pursuant to these rules.

R313-12-53. Tests.

(1) A licensee or registrant shall perform upon instructions from a representative of the Board or the Executive Secretary or shall permit the representative to perform reasonable tests as the representative deems appropriate or necessary including, but not limited to, tests of:

(a) sources of radiation;

(b) facilities wherein sources of radiation are used or

stored;

(c) radiation detection and monitoring instruments; and

(d) other equipment and devices used in connection with utilization or storage of licensed or registered sources of radiation.

R313-12-54. Additional Requirements.

The Board may, by rule, or order, impose upon a licensee or registrant requirements in addition to those established in these rules that it deems appropriate or necessary to minimize any danger to public health and safety or the environment.

R313-12-55. Exemptions.

(1) The Board may, upon application or upon its own initiative, grant exemptions or exceptions from the requirements of these rules as it determines are authorized by law and will not result in undue hazard to public health and safety or the environment.

(2) U.S. Department of Energy contractors or subcontractors and U.S. Nuclear Regulatory Commission contractors or subcontractors operating within this state are exempt from these rules to the extent that the contractor or subcontractor under his contract receives, possesses, uses, transfers, or acquires sources of radiation. The following contractor categories are included:

(a) prime contractors performing work for the U.S. Department of Energy at U.S. Government-owned or controlled sites, including the transportation of sources of radiation to or from the sites and the performance of contract services during temporary interruptions of the transportation;

(b) prime contractors of the U.S. Department of Energy performing research in, or development, manufacture, storage, testing or transportation of, atomic weapons or components thereof;

(c) prime contractors of the U.S. Department of Energy using or operating nuclear reactors or other nuclear devices in a United States Government-owned vehicle or vessel; and

(d) any other prime contractor or subcontractor of the U.S. Department of Energy or of the U.S. Nuclear Regulatory Commission when the state and the U.S. Nuclear Regulatory Commission jointly determine (i) that the exemption of the prime contractor or subcontractor is authorized by law; and (ii) that under the terms of the contract or subcontract, there is adequate assurance that the work thereunder can be accomplished without undue risk to the public health and safety.

R313-12-70. Impounding.

Sources of radiation shall be subject to impounding pursuant to Section 19-3-111. Persons who have a source of radiation impounded are subject to fees established in accordance with the Legislative Appropriations Act for the actual cost of the management and oversight activities performed by representatives of the Executive Secretary.

R313-12-100. Prohibited Uses.

(1) A hand-held fluoroscopic screen using x-ray equipment shall not be used unless it has been listed in the Registry of Sealed Source and Devices or accepted for certification by the U.S. Food and Drug Administration, Center for Devices and Radiological Health.

(2) A shoe-fitting fluoroscopic device shall not be used.

R313-12-110. Communications.

All communications and reports concerning these rules, and applications filed thereunder, should be addressed to the Division of Radiation Control, P.O. Box 144850, 168 North 1950 West, Salt Lake City, Utah 84114-4850.

KEY: definitions, units, inspections, exemptions
September 14, 2001 19-3-104
Notice of Continuation July 23, 2001 19-3-108

UTAH RADIATION CONTROL RULES

CHAPTER R313-14
VIOLATIONS AND ESCALATED ENFORCEMENT

R313. Environmental Quality, Radiation Control.

R313-14. Violations and Escalated Enforcement.

R313-14-1. Introduction and Purpose.

(1) The purpose of the radiation control inspection and compliance program is to assure the radiological safety of the public, radiation workers, and the environment by:

(a) ensuring compliance with Utah Radiation Control rules or license conditions;

(b) obtaining prompt correction of violations;

(c) deterring future violations; and

(d) encouraging improvement of licensee, permittee or registrant performance, including the prompt identification, reporting, and correction of potential safety problems.

(2) Consistent with the purpose of the radiation control inspection and compliance program, prompt and vigorous enforcement action shall be taken when dealing with licensees, permittees or registrants who fail to demonstrate adherence to these rules. Enforcement action is dependent on the circumstances of the case and may require that discretion be exercised after consideration of these standards. Sanctions have been designed to ensure that a licensee, permittee or registrant does not deliberately profit from violations of the Utah Radiation Control rules.

R313-14-2. Responsibilities.

(1) The Board has authorized the Executive Secretary to:

(a) enforce rules through the issuance of orders and assess penalties in accordance with Section 19-3-109; and

(b) impound radioactive material in accordance with Section 19-3-111.

(2) The Executive Secretary is authorized to issue Notices of Violations.

R313-14-3. Definitions.

As used in R313-14, the following definitions apply:

(1) "Material False Statement" means a statement that is false by omission or commission and is relevant to the regulatory process.

(2) "Requirement" means a legally binding requirement such as a statute, rule, license condition, permit, registration, technical specification, or order.

(3) "Similar" means those violations which could have been reasonably expected to have been prevented by the licensee's, permittee's or registrant's corrective action for a previous violation.

(4) "Willfulness" means the deliberate intent to violate or falsify, and includes careless disregard for requirements. Acts which do not rise to the level of careless disregard are not included in this definition.

R313-14-10. Severity of Violations.

(1) Violations are placed in one of two major categories. These categories are:

(a) electronically produced radiation operations; or
(b) radioactive materials operations.
(2) Regulatory requirements vary in public health and environmental safety significance. Therefore, it is essential that the relative importance of violations be identified as the first step in the enforcement process. Based upon their relative hazard, violations are assigned to one of five levels of severity.
(3) Severity Level I is assigned to violations that are the most significant and Severity Level V violations are the least significant. In general, violations that are included in Severity Levels I and II involve actual or high potential impact on the public. Severity Level III violations are cause for significant concern. Severity Level IV violations are less serious but are of more than minor concern, however, if left uncorrected, they could lead to a more serious concern. Severity Level V violations are of minor safety or environmental concern.
(4) The severity of a violation shall be characterized at the level best suited to the significance of the particular violation. A severity level may be increased if the circumstances surrounding the violation involve careless disregard of requirements, deception, or other indications of willfulness. In determining the specific severity level of a violation involving willfulness, consideration will be given to factors like the position of the person involved in the violation, the significance of an underlying violation, the intent of the violator and the economic advantage gained by the violation. The relative weight given to these factors in arriving at the appropriate severity level is dependent on the circumstances of the violation.
(5) The severity level assigned to material false statements may be Severity Level I, II or III, depending on the circumstances surrounding the statement. In determining the specific severity level of a violation involving material false statements or falsification of records, consideration is given to factors like the position of the person involved in the violation, for example, a first line supervisor as opposed to a senior manager, the significance of the information involved, and the intent of the violator. Negligence not amounting to careless disregard would be weighted differently than careless disregard or deliberateness. The relative weight given to these factors in arriving at the appropriate severity level is dependent on the circumstances of the violation.

R313-14-15. Enforcement Actions.

This Section describes the enforcement sanctions available to the Executive Secretary and specifies the conditions under which they are to be used.
(1) Notice of Violation
(a) A Notice of Violation is a written notice setting forth one or more violations of a legally binding requirement. The notice normally requires the licensee, permittee or registrant to provide a written statement describing:
(i) corrective steps which have been taken by the licensee, permittee or registrant and the results achieved;

(ii) corrective steps which shall be taken to prevent recurrence; and

(iii) the date when full compliance will be achieved.

(b) The Executive Secretary may require responses to Notices of Violation to be under oath. Normally, responses under oath may be required only in connection with civil penalties and orders.

(c) A Notice of Violation is used by the Executive Secretary as the method for formalizing the existence of a violation. The Notice may be the only enforcement action taken or it may be used as a basis for other enforcement actions. Licensee, permittee or registrant initiative for self-identification and correction of problems is encouraged. The Executive Secretary shall not generally issue Notices of Violation for a violation that meets the five following tests:

(i) it was identified by the licensee, permittee or registrant;

(ii) it fits in Severity Level IV or V;

(iii) it was reported, in writing, to the Executive Secretary;

(iv) it was or will be corrected, including measures to prevent recurrence, within a reasonable time; and

(v) it was not a violation that could reasonably be expected to have been prevented by the licensee's, permittee's or registrant's corrective action for a previous violation.

(d) Licensees, permittees or registrants are not ordinarily cited for violations resulting from matters outside of their control, like equipment failures that were not avoidable by reasonable quality assurance measures or management controls. Generally however, licensees, permittees and registrants are held responsible for the acts of their employees. Accordingly, the rules should not be construed to excuse personal errors.

(2) Civil Penalty.

(a) A civil penalty is a monetary penalty that may be imposed for violation of Utah Radiation Control Rules or lawful orders issued by the Executive Secretary. Civil penalties are designed to emphasize the need for lasting remedial action and to deter future violations. Generally, civil penalties are imposed for Severity Level I violations, are imposed for Severity Level II violations, in the absence of mitigating circumstances, are considered for Severity Level III violations, and may be imposed for Severity Level IV and V violations that are similar to previous violations for which the licensee, permittee or registrant failed to take effective corrective action.

(b) The level of a civil penalty is established so that a penalty does not exceed $5,000 per violation. Except as modified by provision of the next paragraphs, the base civil penalties are as follows:

TABLE

Severity Level I Violations	$5,000
Severity Level II Violations	$4,000
Severity Level III Violations	$2,500
Severity Level IV Violations	$ 750

Severity Level V Violations $ 250

(i) Comprehensive licensee, permittee or registrant programs for detection, correction and reporting of problems that may constitute, or lead to, violation of regulatory requirements are important and consideration may be given for effective internal audit programs. When licensees, permittees or registrants find, report, and correct a violation expeditiously and effectively, the Executive Secretary may apply adjustment factors to reduce or eliminate a civil penalty.

(ii) Ineffective licensee, permittee or registrant programs for problem identification or correction are unacceptable. In cases involving willfulness, flagrant violations, repeated poor performance in an area of concern, or serious breakdown in management controls, the Executive Secretary may apply the full enforcement authority.

(iii) The Executive Secretary may review the proposed civil penalty case on its own merits and adjust the civil penalty upward or downward appropriately. After considering the relevant circumstances, adjustments to these values may be made for the factors identified below:

(A) Reduction of the civil penalty may be given when a licensee, permittee or registrant identifies the violation and promptly reports, in writing, the violation to the Executive Secretary. No consideration will be given to this factor if the licensee, permittee or registrant does not take immediate action to correct the problem upon discovery.

(B) Recognizing that corrective action is always required to meet regulatory requirements, the promptness and extent to which the licensee, permittee or registrant takes corrective action, including actions to prevent recurrence, may be considered in modifying the civil penalty to be assessed.

(C) Reduction of the civil penalty may be given for prior good performance in the general area of concern.

(D) The civil penalty may be increased as much as 50% for cases where the licensee, permittee or registrant had prior knowledge of a problem as a result of an internal audit, or specific Executive Secretary or industry notification, and had failed to take effective preventive steps.

(E) The civil penalty may be increased as much as 50% where multiple examples of a particular violation are identified during the inspection period.

(c) A violation of a continuing nature shall, for the purposes of calculating the proposed civil penalty, be considered a separate violation for each day of its continuance. A continuing violation is not considered a repeat violation. In the event a violation is repeated within five years, the scheduled amount of the civil penalty may be increased 25%; and for repeat violations of Severity Levels II and III, the penalty may not be avoided by compliance. Other rights and procedures are not affected by the repeat violation.

(d) Payment of civil penalties shall be made within 30 working days of receipt of a Notice of Violation and Notice of Proposed Imposition of a Civil Penalty. An extension may be given

when extenuating circumstances are shown to exist. Payment shall be made by check, payable to the Division of Radiation Control and mailed to the Division at the address shown with the Notice of Violation.

(3) Orders.

(a) An Order is a written directive to modify, suspend, or revoke a license, permit or registration; to cease and desist from a given practice or activity; or to take other action that may be necessary.

(b) Modification Orders are issued when some change in licensee, permittee or registrant equipment, procedures or management control is necessary.

(c) Suspension Orders may be used:

(i) to remove a threat to the public health and safety or the environment;

(ii) when the licensee, permittee or registrant has not responded adequately to other enforcement action;

(iii) when the licensee, permittee or registrant interferes with the conduct of an inspection; or

(iv) for a reason not mentioned above for which license, permit or registration revocation is authorized.

(v) Suspensions may apply to all or part of the regulated activity. Ordinarily, an activity is not suspended, nor is a suspension prolonged for failure to comply with requirements when the failure is not willful or when adequate corrective actions have been taken.

(d) Revocation Orders may be used:

(i) when a licensee, permittee or registrant is unable or unwilling to comply with these rules;

(ii) when a licensee, permittee or registrant refuses to correct a violation;

(iii) when a licensee, permittee or registrant does not respond to a Notice of Violation;

(iv) when a licensee, permittee or registrant does not pay a fee required by the Department; or

(v) for any other reason for which revocation is authorized.

(e) Cease and Desist Orders are used to stop unauthorized activity that has continued despite notification by the Executive Secretary that the activity is unauthorized.

(f) Orders may be made effective immediately, without prior opportunity for hearing, whenever it is determined that the public health, interest, or safety so requires, or when the Order is responding to a violation involving willfulness. Otherwise, a prior opportunity for a hearing is afforded. For cases in which a basis could reasonably exist for not taking the action as proposed, the licensee, permittee or registrant shall be afforded an opportunity to show cause why the Order should not be issued in the proposed manner.

(4) Escalation of Enforcement Sanctions.

(a) In accordance with the provisions of Section 19-3-111 the radioactive material of a person may be impounded. Administrative procedures will be conducted as provided by R313-14-20, prior to disposal of impounded radioactive materials.

(b) Violations of Severity Levels I, II or III are considered

to be very serious. If repetitive very serious violations occur, the Executive Secretary may issue Orders in conjunction with other enforcement actions to achieve immediate corrective actions and to deter their recurrence. In accordance with the criteria contained in this section, the Executive Secretary shall carefully consider the circumstances of cases when selecting and applying the appropriate sanctions.

(c) The progression of enforcement actions for repetitive violations may be based on violations under a single license, permit or registration. The actual progression to be used in a particular case may depend on the circumstances. When more than one facility is covered by a single license, permit or registration, the normal progression may be based on repetitive violations under the same license, permit or registration. It should be noted that under some circumstances, for example, where there is common control over some facet of facility operations, repetitive violations may be charged even though the second violation occurred at a different facility or under a different license, permit or registration.

(5) Related Administrative Actions.

(a) In addition to the formal enforcement mechanisms of Notices of Violation and Orders, the Executive Secretary may use administrative mechanisms, like enforcement conferences, bulletins, circulars, information notices, generic letters, and confirmatory action letters as part of the enforcement and regulatory program. Licensees, permittees and registrants are expected to adhere to obligations and commitments resulting from these processes and the Executive Secretary shall, if necessary, issue appropriate orders to make sure that expectation is realized.

(b) Enforcement Conferences are meetings held by the Executive Secretary with licensee, permittee or registrant management to discuss safety, public health, or environmental problems, compliance with regulatory requirements, proposed corrective measures, including schedules for implementation, and enforcement options available to the Executive Secretary.

(c) Bulletins, Circulars, Information Notices, and Generic Letters are written notifications to groups of licensees, permittees or registrants identifying specific problems and calling for or recommending specific actions on their part. Responses to these notifications may be required.

(d) Confirmatory Action Letters are letters confirming a licensee's, permittee's or registrant's agreement to take certain actions to remove significant concerns about health and safety, or the environment.

R313-14-25. Public Disclosure of Enforcement Actions.

Enforcement actions and responses are publicly available for inspection. In addition, press releases are generally issued for Notices of Proposed Imposition of a Civil Penalty and Orders. In the case of orders and civil penalties related to violations at Severity Level I, II or III, press releases may be issued at the time of the Order or the Notice of Proposed Imposition of the Civil Penalty. Press releases are not normally issued for Notices of

Violation.

KEY: violations, penalties, enforcement
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UTAH RADIATION CONTROL RULES

CHAPTER R313-15
STANDARDS FOR PROTECTION AGAINST RADIATION

R313. Environmental Quality, Radiation Control.

R313-15. Standards for Protection Against Radiation.

R313-15-1. Purpose, Authority and Scope.

(1) Rule R313-15 establishes standards for protection against ionizing radiation resulting from activities conducted pursuant to licenses issued by the Executive Secretary. These rules are issued pursuant to Sections 19-3-104(3) and 19-3-104(6).

(2) The requirements of Rule R313-15 are designed to control the receipt, possession, use, transfer, and disposal of sources of radiation by any licensee or registrant so the total dose to an individual, including doses resulting from all sources of radiation other than background radiation, does not exceed the standards for protection against radiation prescribed in Rule R313-15. However, nothing in Rule R313-15 shall be construed as limiting actions that may be necessary to protect health and safety.

(3) Except as specifically provided in other sections of these rules, Rule R313-15 applies to persons licensed or registered by the Executive Secretary to receive, possess, use, transfer, or dispose of sources of radiation. The limits in Rule R313-15 do not apply to doses due to background radiation, to exposure of patients to radiation for the purpose of medical diagnosis or therapy, to exposure from individuals administered radioactive material and released in accordance with Section R313-32-75, or to exposure from voluntary participation in medical research programs.

R313-15-2. Definitions.

"Annual limit on intake" (ALI) means the derived limit for the amount of radioactive material taken into the body of an adult worker by inhalation or ingestion in a year. ALI is the smaller value of intake of a given radionuclide in a year by the reference man that would result in a committed effective dose equivalent of 0.05 Sv (5 rem) or a committed dose equivalent of 0.5 Sv (50 rem) to any individual organ or tissue. ALI values for intake by ingestion and by inhalation of selected radionuclides are given in Table I, Columns 1 and 2, of Appendix B of 10 CFR 20.1001 to 20.2402, 2001 ed., which is incorporated by reference.

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

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

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

"Class" means a classification scheme for inhaled material according to its rate of clearance from the pulmonary region of the

lung. Materials are classified as D, W, or Y, which applies to a range of clearance half-times: for Class D, Days, of less than ten days, for Class W, Weeks, from ten to 100 days , and for Class Y, Years, of greater than 100 days. For purposes of these rules, "lung class" and "inhalation class" are equivalent terms.

"Constraint (dose constraint)" in accordance with 10 CFR 20.1003, 2001 ed., means a value above which specified licensee actions are required.

"Declared pregnant woman" means a woman who has voluntarily informed her employer, in writing, of her pregnancy and the estimated date of conception. The declaration remains in effect until the declared pregnant woman withdraws the declaration in writing or is no longer pregnant.

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

"Derived air concentration" (DAC) means the concentration of a given radionuclide in air which, if breathed by the reference man for a working year of 2,000 hours under conditions of light work, results in an intake of one ALI. For purposes of these rules, the condition of light work is an inhalation rate of 1.2 cubic meters of air per hour for 2,000 hours in a year. DAC values are given in Table I, Column 3, of Appendix B of 10 CFR 20.1001 to 20.2402, 2001 ed., which is incorporated by reference.

"Derived air concentration-hour" (DAC-hour) means the product of the concentration of radioactive material in air, expressed as a fraction or multiple of the derived air concentration for each radionuclide, and the time of exposure to that radionuclide, in hours. A licensee or registrant may take 2,000 DAC-hours to represent one ALI, equivalent to a committed effective dose equivalent of 0.05 Sv (5 rem).

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

"Dosimetry processor" means an individual or an organization that processes and evaluates individual monitoring devices in order to determine the radiation dose delivered to the monitoring devices.

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

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

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

"Helmet" means a rigid respiratory inlet covering that also

provides head protection against impact and penetration.

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

"Inhalation class", refer to "Class".

"Labeled package" means a package labeled with a Radioactive White I, Yellow II, or Yellow III label as specified in U.S. Department of Transportation regulations 49 CFR 172.403 and 49 CFR 172.436 through 440, 2000 ed. Labeling of packages containing radioactive materials is required by the U.S. Department of Transportation if the amount and type of radioactive material exceeds the limits for an excepted quantity or article as defined and limited by U.S. Department of Transportation regulations 49 CFR 173.403(m) and (w) and 49 CFR 173.421 through 424, 2000 ed.

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

"Lung class", refer to "Class".

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

"Nonstochastic effect" means a health effect, the severity of which varies with the dose and for which a threshold is believed to exist. Radiation-induced cataract formation is an example of a nonstochastic effect. For purposes of these rules, "deterministic effect" is an equivalent term.

"Planned special exposure" means an infrequent exposure to radiation, separate from and in addition to the annual occupational dose limits.

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

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

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

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

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

"Quarter" means a period of time equal to one-fourth of the year observed by the licensee, approximately 13 consecutive weeks, providing that the beginning of the first quarter in a year coincides with the starting date of the year and that no day is omitted or duplicated in consecutive quarters.

"Reference Man" means a hypothetical aggregation of human physical and physiological characteristics determined by international consensus. These characteristics may be used by researchers and public health employees to standardize results of

experiments and to relate biological insult to a common base. A description of the Reference Man is contained in the International Commission on Radiological Protection report, ICRP Publication 23, "Report of the Task Group on Reference Man."

"Respiratory protective equipment" means an apparatus, such as a respirator, used to reduce an individual's intake of airborne radioactive materials.

"Sanitary sewerage" means a system of public sewers for carrying off waste water and refuse, but excluding sewage treatment facilities, septic tanks, and leach fields owned or operated by the licensee or registrant.

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

"Stochastic effect" means a health effect that occurs randomly and for which the probability of the effect occurring, rather than its severity, is assumed to be a linear function of dose without threshold. Hereditary effects and cancer incidence are examples of stochastic effects. For purposes of these rules, "probabilistic effect" is an equivalent term.

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

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

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

"Very high radiation area" means an area, accessible to individuals, in which radiation levels from radiation sources external to the body could result in an individual receiving an absorbed dose in excess of five Gy (500 rad) in one hour at one meter from a radiation source or one meter from any surface that the radiation penetrates.

"Weighting factor" w_T for an organ or tissue (T) means the proportion of the risk of stochastic effects resulting from irradiation of that organ or tissue to the total risk of stochastic effects when the whole body is irradiated uniformly. For calculating the effective dose equivalent, the values of w_T are:

TABLE

ORGAN DOSE WEIGHTING FACTORS

Organ or Tissue	w_T
Gonads	0.25
Breast	0.15
Red bone marrow	0.12
Lung	0.12
Thyroid	0.03
Bone surfaces	0.03
Remainder	0.30(1)
Whole Body	1.00(2)

(1) 0.30 results from 0.06 for each of five "remainder" organs, excluding the skin and the lens of the eye, that receive the highest doses.
(2) For the purpose of weighting the external whole body dose, for adding it to the internal dose, a single weighting factor, w_T = 1.0, has been specified. The use of other weighting factors for external exposure will be approved on a case-by-case basis until such time as specific guidance is issued.

R313-15-3. Implementation.

(1) Any existing license or registration condition that is more restrictive than Rule R313-15 remains in force until there is an amendment or renewal of the license or registration.

(2) If a license or registration condition exempts a licensee or registrant from a provision of Rule R313-15 in effect on or before January 1, 1994, it also exempts the licensee or registrant from the corresponding provision of Rule R313-15.

(3) If a license or registration condition cites provisions of Rule R313-15 in effect prior to January 1, 1994, which do not correspond to any provisions of Rule R313-15, the license or registration condition remains in force until there is an amendment or renewal of the license or registration that modifies or removes this condition.

R313-15-101. Radiation Protection Programs.

(1) Each licensee or registrant shall develop, document, and implement a radiation protection program sufficient to ensure compliance with the provisions of Rule R313-15. See Section R313-15-1102 for recordkeeping requirements relating to these programs.

(2) The licensee or registrant shall use, to the extent practical, procedures and engineering controls based upon sound radiation protection principles to achieve occupational doses and doses to members of the public that are as low as is reasonably achievable (ALARA).

(3) The licensee or registrant shall, at intervals not to exceed 12 months, review the radiation protection program content and implementation.

(4) To implement the ALARA requirements of Subsection R313-15-101(2), and notwithstanding the requirements in Section R313-15-301, a constraint on air emissions of radioactive material to the environment, excluding radon-222 and its decay products, shall be established by licensees or registrants such that the individual member of the public likely to receive the highest dose will not be expected to receive a total effective dose equivalent in excess of 0.1 mSv (0.01 rem) per year from these emissions. If a licensee or registrant subject to this requirement exceeds this dose constraint, the licensee or registrant shall report the exceedance as provided in Section R313-15-1203 and promptly take appropriate corrective action to ensure against recurrence.

R313-15-201. Occupational Dose Limits for Adults.

(1) The licensee or registrant shall control the occupational dose to individual adults, except for planned special exposures

pursuant to Section R313-15-206, to the following dose limits:

(a) An annual limit, which is the more limiting of:

(i) The total effective dose equivalent being equal to 0.05 Sv (5 rem); or

(ii) The sum of the deep dose equivalent and the committed dose equivalent to any individual organ or tissue other than the lens of the eye being equal to 0.50 Sv (50 rem).

(b) The annual limits to the lens of the eye, to the skin, and to the extremities which are:

(i) A lens dose equivalent of 0.15 Sv (15 rem), and

(ii) A shallow dose equivalent of 0.50 Sv (50 rem) to the skin or to any extremity.

(2) Doses received in excess of the annual limits, including doses received during accidents, emergencies, and planned special exposures, shall be subtracted from the limits for planned special exposures that the individual may receive during the current year and during the individual's lifetime. See Subsections R313-15-206(5)(a) and R313-15-206(5)(b).

(3) The assigned deep dose equivalent and shallow dose equivalent shall be for the part of the body receiving the highest exposure.

(a) The deep dose equivalent, lens dose equivalent and shallow dose equivalent may be assessed from surveys or other radiation measurements for the purpose of demonstrating compliance with the occupational dose limits, if the individual monitoring device was not in the region of highest potential exposure, or the results of individual monitoring are unavailable; or

(b) When a protective apron is worn while working with medical fluoroscopic equipment and monitoring is conducted as specified in Subsection R313-15-502(1)(d), the effective dose equivalent for external radiation shall be determined as follows:

(i) When only one individual monitoring device is used and it is located at the neck outside the protective apron, and the reported dose exceeds 25 percent of the limit specified in Subsection R313-15-201(1), the reported deep dose equivalent value multiplied by 0.3 shall be the effective dose equivalent for external radiation; or

(ii) When individual monitoring devices are worn, both under the protective apron at the waist and outside the protective apron at the neck, the effective dose equivalent for external radiation shall be assigned the value of the sum of the deep dose equivalent reported for the individual monitoring device located at the waist under the protective apron multiplied by 1.5 and the deep dose equivalent reported for the individual monitoring device located at the neck outside the protective apron multiplied by 0.04.

(4) Derived air concentration (DAC) and annual limit on intake (ALI) values are specified in Table I of Appendix B of 10 CFR 20.1001 to 20.2402, 2001 ed., which is incorporated by reference, and may be used to determine the individual's dose and to demonstrate compliance with the occupational dose limits. See Section R313-15-1107.

(5) Notwithstanding the annual dose limits, the licensee shall limit the soluble uranium intake by an individual to ten milligrams in a week in consideration of chemical toxicity. See

footnote 3, of Appendix B of 10 CFR 20.1001 to 20.2402, 2001 ed., which is incorporated by reference.

(6) The licensee or registrant shall reduce the dose that an individual may be allowed to receive in the current year by the amount of occupational dose received while employed by any other person. See Subsection R313-15-205(5).

R313-15-202. Compliance with Requirements for Summation of External and Internal Doses.

(1) If the licensee or registrant is required to monitor pursuant to both Subsections R313-15-502(1) and R313-15-502(2), the licensee or registrant shall demonstrate compliance with the dose limits by summing external and internal doses. If the licensee or registrant is required to monitor only pursuant to Subsection R313-15-502(1) or only pursuant to Subsection R313-15-502(2), then summation is not required to demonstrate compliance with the dose limits. The licensee or registrant may demonstrate compliance with the requirements for summation of external and internal doses pursuant to Subsections R313-15-202(2), R313-15-202(3) and R313-15-202(4). The dose equivalents for the lens of the eye, the skin, and the extremities are not included in the summation, but are subject to separate limits.

(2) Intake by Inhalation. If the only intake of radionuclides is by inhalation, the total effective dose equivalent limit is not exceeded if the sum of the deep dose equivalent divided by the total effective dose equivalent limit, and one of the following, does not exceed unity:

(a) The sum of the fractions of the inhalation ALI for each radionuclide, or

(b) The total number of derived air concentration-hours (DAC-hours) for all radionuclides divided by 2,000, or

(c) The sum of the calculated committed effective dose equivalents to all significantly irradiated organs or tissues (T) calculated from bioassay data using appropriate biological models and expressed as a fraction of the annual limit. For purposes of this requirement, an organ or tissue is deemed to be significantly irradiated if, for that organ or tissue, the product of the weighting factors, w_T, and the committed dose equivalent, $H_{T,50}$, per unit intake is greater than ten percent of the maximum weighted value of $H_{T,50}$, that is, $w_T H_{T,50}$, per unit intake for any organ or tissue.

(3) Intake by Oral Ingestion. If the occupationally exposed individual receives an intake of radionuclides by oral ingestion greater than ten percent of the applicable oral ALI, the licensee or registrant shall account for this intake and include it in demonstrating compliance with the limits.

(4) Intake through Wounds or Absorption through Skin. The licensee or registrant shall evaluate and, to the extent practical, account for intakes through wounds or skin absorption. The intake through intact skin has been included in the calculation of DAC for hydrogen-3 and does not need to be evaluated or accounted for pursuant to Subsection R313-15-202(4).

R313-15-203. Determination of External Dose from Airborne Radioactive Material.

(1) Licensees or registrants shall, when determining the dose from airborne radioactive material, include the contribution to the deep dose equivalent, lens dose equivalent, and shallow dose equivalent from external exposure to the radioactive cloud. See footnotes 1 and 2 of Appendix B of 10 CFR 20.1001 to 20.2402, 2001 ed., which is incorporated by reference.

(2) Airborne radioactivity measurements and DAC values shall not be used as the primary means to assess the deep dose equivalent when the airborne radioactive material includes radionuclides other than noble gases or if the cloud of airborne radioactive material is not relatively uniform. The determination of the deep dose equivalent to an individual shall be based upon measurements using instruments or individual monitoring devices.

R313-15-204. Determination of Internal Exposure.

(1) For purposes of assessing dose used to determine compliance with occupational dose equivalent limits, the licensee or registrant shall, when required pursuant to Section R313-15-502, take suitable and timely measurements of:

(a) Concentrations of radioactive materials in air in work areas; or

(b) Quantities of radionuclides in the body; or

(c) Quantities of radionuclides excreted from the body; or

(d) Combinations of these measurements.

(2) Unless respiratory protective equipment is used, as provided in Section R313-15-703, or the assessment of intake is based on bioassays, the licensee or registrant shall assume that an individual inhales radioactive material at the airborne concentration in which the individual is present.

(3) When specific information on the physical and biochemical properties of the radionuclides taken into the body or the behavior of the material in an individual is known, the licensee or registrant may:

(a) Use that information to calculate the committed effective dose equivalent, and, if used, the licensee or registrant shall document that information in the individual's record; and

(b) Upon prior approval of the Executive Secretary, adjust the DAC or ALI values to reflect the actual physical and chemical characteristics of airborne radioactive material, for example, aerosol size distribution or density; and

(c) Separately assess the contribution of fractional intakes of Class D, W, or Y compounds of a given radionuclide to the committed effective dose equivalent. See Appendix B of 10 CFR 20.1001 to 20.2402, 2001 ed., which is incorporated by reference.

(4) If the licensee or registrant chooses to assess intakes of Class Y material using the measurements given in Subsections R313-15-204(1)(b) or R313-15-204(1)(c), the licensee or registrant may delay the recording and reporting of the assessments for periods up to seven months, unless otherwise required by Section R313-15-1202 or Section R313-15-1203. This delay permits the licensee or registrant to make additional measurements basic to the

assessments.

(5) If the identity and concentration of each radionuclide in a mixture are known, the fraction of the DAC applicable to the mixture for use in calculating DAC-hours shall be either:

(a) The sum of the ratios of the concentration to the appropriate DAC value, that is, D, W, or Y, from Appendix B of 10 CFR 20.1001 to 20.2402, 2001 ed., which is incorporated by reference, for each radionuclide in the mixture; or

(b) The ratio of the total concentration for all radionuclides in the mixture to the most restrictive DAC value for any radionuclide in the mixture.

(6) If the identity of each radionuclide in a mixture is known, but the concentration of one or more of the radionuclides in the mixture is not known, the DAC for the mixture shall be the most restrictive DAC of any radionuclide in the mixture.

(7) When a mixture of radionuclides in air exists, a licensee or registrant may disregard certain radionuclides in the mixture if:

(a) The licensee or registrant uses the total activity of the mixture in demonstrating compliance with the dose limits in Section R313-15-201 and in complying with the monitoring requirements in Subsection R313-15-502(2), and

(b) The concentration of any radionuclide disregarded is less than ten percent of its DAC, and

(c) The sum of these percentages for all of the radionuclides disregarded in the mixture does not exceed 30 percent.

(8) When determining the committed effective dose equivalent, the following information may be considered:

(a) In order to calculate the committed effective dose equivalent, the licensee or registrant may assume that the inhalation of one ALI, or an exposure of 2,000 DAC-hours, results in a committed effective dose equivalent of 0.05 Sv (5 rem) for radionuclides that have their ALIs or DACs based on the committed effective dose equivalent.

(b) For an ALI and the associated DAC determined by the nonstochastic organ dose limit of 0.50 Sv (50 rem), the intake of radionuclides that would result in a committed effective dose equivalent of 0.05 Sv (5 rem), that is, the stochastic ALI, is listed in parentheses in Table I of Appendix B of 10 CFR 20.1001 to 20.2402, 2001 ed., which is incorporated by reference. The licensee or registrant may, as a simplifying assumption, use the stochastic ALI to determine committed effective dose equivalent. However, if the licensee or registrant uses the stochastic ALI, the licensee or registrant shall also demonstrate that the limit in Subsection R313-15-201(1)(a)(ii) is met.

R313-15-205. Determination of Prior Occupational Dose.

(1) For each individual likely to receive, in a year, an occupational dose requiring monitoring pursuant to Section R313-15-502, the licensee or registrant shall:

(a) Determine the occupational radiation dose received during the current year; and

(b) Attempt to obtain the records of cumulative occupational

radiation dose. A licensee or registrant may accept, as the record of cumulative radiation dose, an up-to-date form DRC-05 or equivalent, signed by the individual and countersigned by an appropriate official of the most recent employer for work involving radiation exposure, or the individual's current employer, if the individual is not employed by the licensee or registrant.

(2) Prior to permitting an individual to participate in a planned special exposure, the licensee or registrant shall determine:

(a) The internal and external doses from all previous planned special exposures; and

(b) All doses in excess of the limits, including doses received during accidents and emergencies, received during the lifetime of the individual.

(3) In complying with the requirements of Subsection R313-15-205(1), a licensee or registrant may:

(a) Accept, as a record of the occupational dose that the individual received during the current year, a written signed statement from the individual, or from the individual's most recent employer for work involving radiation exposure, that discloses the nature and the amount of any occupational dose that the individual received during the current year; and

(b) Obtain reports of the individual's dose equivalents from the most recent employer for work involving radiation exposure, or the individual's current employer, if the individual is not employed by the licensee or registrant, by telephone, telegram, facsimile, other electronic media or letter. The licensee or registrant shall request a written verification of the dose data if the authenticity of the transmitted report cannot be established.

(4) The licensee or registrant shall record the exposure history, as required by Subsection R313-15-205(1), on form DRC-05, or other clear and legible record, of all the information required on that form.

(a) The form or record shall show each period in which the individual received occupational exposure to radiation or radioactive material and shall be signed by the individual who received the exposure. For each period for which the licensee or registrant obtains reports, the licensee or registrant shall use the dose shown in the report in preparing form DRC-05 or equivalent. For any period in which the licensee or registrant does not obtain a report, the licensee or registrant shall place a notation on form DRC-05 or equivalent indicating the periods of time for which data are not available.

(b) For the purpose of complying with this requirement, licensees or registrants are not required to reevaluate the separate external dose equivalents and internal committed dose equivalents or intakes of radionuclides assessed pursuant to the rules in Rule R313-15 in effect before January 1, 1994. Further, occupational exposure histories obtained and recorded on form DRC-05 or equivalent before January 1, 1994, would not have included effective dose equivalent, but may be used in the absence of specific information on the intake of radionuclides by the individual.

(5) If the licensee or registrant is unable to obtain a

complete record of an individual's current and previously accumulated occupational dose, the licensee or registrant shall assume:

(a) In establishing administrative controls under Subsection R313-15-201(6) for the current year, that the allowable dose limit for the individual is reduced by 12.5 mSv (1.25 rem) for each quarter for which records were unavailable and the individual was engaged in activities that could have resulted in occupational radiation exposure; and

(b) That the individual is not available for planned special exposures.

(6) The licensee or registrant shall retain the records on form DRC-05 or equivalent until the Executive Secretary terminates each pertinent license or registration requiring this record. The licensee or registrant shall retain records used in preparing form DRC-05 or equivalent for three years after the record is made.

R313-15-206. Planned Special Exposures.

A licensee or registrant may authorize an adult worker to receive doses in addition to and accounted for separately from the doses received under the limits specified in Section R313-15-201 provided that each of the following conditions is satisfied:

(1) The licensee or registrant authorizes a planned special exposure only in an exceptional situation when alternatives that might avoid the dose estimated to result from the planned special exposure are unavailable or impractical.

(2) The licensee or registrant, and employer if the employer is not the licensee or registrant, specifically authorizes the planned special exposure, in writing, before the exposure occurs.

(3) Before a planned special exposure, the licensee or registrant ensures that each individual involved is:

(a) Informed of the purpose of the planned operation; and

(b) Informed of the estimated doses and associated potential risks and specific radiation levels or other conditions that might be involved in performing the task; and

(c) Instructed in the measures to be taken to keep the dose ALARA considering other risks that may be present.

(4) Prior to permitting an individual to participate in a planned special exposure, the licensee or registrant ascertains prior doses as required by Subsection R313-15-205(2) during the lifetime of the individual for each individual involved.

(5) Subject to Subsection R313-15-201(2), the licensee or registrant shall not authorize a planned special exposure that would cause an individual to receive a dose from all planned special exposures and all doses in excess of the limits to exceed:

(a) The numerical values of any of the dose limits in Subsection R313-15-201(1) in any year; and

(b) Five times the annual dose limits in Subsection R313-15-201(1) during the individual's lifetime.

(6) The licensee or registrant maintains records of the conduct of a planned special exposure in accordance with Section R313-15-1106 and submits a written report in accordance with Section R313-15-1204.

(7) The licensee or registrant records the best estimate of the dose resulting from the planned special exposure in the individual's record and informs the individual, in writing, of the dose within 30 days from the date of the planned special exposure. The dose from planned special exposures shall not be considered in controlling future occupational dose of the individual pursuant to Subsection R313-15-201(1) but shall be included in evaluations required by Subsections R313-15-206(4) and R313-15-206(5).

R313-15-207. Occupational Dose Limits for Minors.

The annual occupational dose limits for minors are ten percent of the annual occupational dose limits specified for adult workers in Section R313-15-201.

R313-15-208. Dose to an Embryo/Fetus.

(1) The licensee or registrant shall ensure that the dose equivalent to the embryo/fetus during the entire pregnancy, due to occupational exposure of a declared pregnant woman, does not exceed five mSv (0.5 rem). See Section R313-15-1107 for recordkeeping requirements.

(2) The licensee or registrant shall make efforts to avoid substantial variation above a uniform monthly exposure rate to a declared pregnant woman so as to satisfy the limit in Subsection R313-15-208(1).

(3) The dose equivalent to an embryo/fetus is the sum of:

(a) The dose equivalent to the embryo/fetus resulting from radionuclides in the embryo/fetus and radionuclides in the declared pregnant woman; and

(b) The dose equivalent that is most representative of the dose equivalent to the embryo/fetus from external radiation, that is, in the mother's lower torso region.

(i) If multiple measurements have not been made, assignment of the highest deep dose equivalent for the declared pregnant woman shall be the dose equivalent to the embryo/fetus, in accordance with Subsection R313-15-201(3); or

(ii) If multiple measurements have been made, assignment of the deep dose equivalent for the declared pregnant woman from the individual monitoring device which is most representative of the dose equivalent to the embryo/fetus shall be the dose equivalent to the embryo fetus. Assignment of the highest deep dose equivalent for the declared pregnant woman to the embryo/fetus is not required unless that dose equivalent is also the most representative deep dose equivalent for the region of the embryo/fetus.

(4) If the dose equivalent to the embryo/fetus is found to have exceeded five mSv (0.5 rem) or is within 0.5 mSv (0.05 rem) of this dose by the time the woman declares the pregnancy to the licensee or registrant, the licensee or registrant shall be deemed to be in compliance with Subsection R313-15-208(1) if the additional dose equivalent to the embryo/fetus does not exceed 0.50 mSv (0.05 rem) during the remainder of the pregnancy.

R313-15-301. Dose Limits for Individual Members of the Public.

(1) Each licensee or registrant shall conduct operations so

that:

(a) Except as provided in Subsection R313-15-301(1)(c), the total effective dose equivalent to individual members of the public from the licensed or registered operation does not exceed one mSv (0.1 rem) in a year, exclusive of the dose contribution from background radiation, from any medical administration the individual has received, from exposure to individuals administered radioactive material and released in accordance with Section R313-32-75, from voluntary participation in medical research programs, and from the licensee's or registrant's disposal of radioactive material into sanitary sewerage in accordance with Section R313-15-1003; and

(b) The dose in any unrestricted area from external sources, exclusive of the dose contributions from patients administered radioactive material and released in accordance with Section R313-32-75, does not exceed 0.02 mSv (0.002 rem) in any one hour; and

(c) The total effective dose equivalent to individual members of the public from infrequent exposure to radiation from radiation machines does not exceed 5 mSv (0.5 rem) in a year.

(2) If the licensee or registrant permits members of the public to have access to controlled areas, the limits for members of the public continue to apply to those individuals.

(3) A licensee, registrant, or an applicant for a license or registration may apply for prior Executive Secretary authorization to operate up to an annual dose limit for an individual member of the public of five mSv (0.5 rem). This application shall include the following information:

(a) Demonstration of the need for and the expected duration of operations in excess of the limit in Subsection R313-15-301(1); and

(b) The licensee's or registrant's program to assess and control dose within the five mSv (0.5 rem) annual limit; and

(c) The procedures to be followed to maintain the dose ALARA.

(4) The Executive Secretary may impose additional restrictions on radiation levels in unrestricted areas and on the total quantity of radionuclides that a licensee or registrant may release in effluents in order to restrict the collective dose.

R313-15-302. Compliance with Dose Limits for Individual Members of the Public.

(1) The licensee or registrant shall make or cause to be made surveys of radiation levels in unrestricted and controlled areas and radioactive materials in effluents released to unrestricted and controlled areas to demonstrate compliance with the dose limits for individual members of the public in Section R313-15-301.

(2) A licensee or registrant shall show compliance with the annual dose limit in Section R313-15-301 by:

(a) Demonstrating by measurement or calculation that the total effective dose equivalent to the individual likely to receive the highest dose from the licensed or registered operation does not exceed the annual dose limit; or

(b) Demonstrating that:

(i) The annual average concentrations of radioactive material

released in gaseous and liquid effluents at the boundary of the unrestricted area do not exceed the values specified in Table II of Appendix B of 10 CFR 20.1001 to 20.2402, 2001 ed., which is incorporated by reference; and

(ii) If an individual were continuously present in an unrestricted area, the dose from external sources would not exceed 0.02 mSv (0.002 rem) in an hour and 0.50 mSv (0.05 rem) in a year.

(3) Upon approval from the Executive Secretary, the licensee or registrant may adjust the effluent concentration values in Appendix B, Table II of 10 CFR 20.1001 to 20.2402, 2001 ed., which is incorporated by reference, for members of the public, to take into account the actual physical and chemical characteristics of the effluents, such as, aerosol size distribution, solubility, density, radioactive decay equilibrium, and chemical form.

R313-15-401. Radiological Criteria for License Termination - General Provisions.

(1) The criteria in Sections R313-15-401 through R313-15-406 apply to the decommissioning of facilities licensed under Rules R313-22 and R313-25, as well as other facilities subject to the Board's jurisdiction under the Act. For low-level waste disposal facilities (Rule R313-25), the criteria apply only to ancillary surface facilities that support radioactive waste disposal activities.

(2) The criteria in Sections R313-15-401 through R313-15-406 do not apply to sites which:

(a) Have been decommissioned prior to the effective date of the rule in accordance with criteria approved by the Executive Secretary;

(b) Have previously submitted and received Executive Secretary approval on a license termination plan or decommissioning plan; or

(c) Submit a sufficient license termination plan or decommissioning plan before the effective date of the rule with criteria approved by the Executive Secretary.

(3) After a site has been decommissioned and the license terminated in accordance with the criteria in Sections R313-15-401 through R313-15-406, the Executive Secretary will require additional cleanup only if, based on new information, the Executive Secretary determines that the criteria in Sections R313-15-401 through R313-15-406 was not met and residual radioactivity remaining at the site could result in significant threat to public health and safety.

(4) When calculating the total effective dose equivalent to the average member of the critical group, the licensee shall determine the peak annual total effective dose equivalent dose expected within the first 1000 years after decommissioning.

R313-15-402. Radiological Criteria for Unrestricted Use.

A site will be considered acceptable for unrestricted use if the residual radioactivity that is distinguishable from background radiation results in a total effective dose equivalent to an average member of the critical group that does not exceed 0.25 mSv

(0.025 rem) per year, including no greater than 0.04 mSv (0.004 rem) committed effective dose equivalent or total effective dose equivalent to an average member of the critical group from groundwater sources, and the residual radioactivity has been reduced to levels that are as low as reasonably achievable (ALARA). Determination of the levels which are ALARA must take into account consideration of any detriments, such as deaths from transportation accidents, expected to potentially result from decontamination and waste disposal.

R313-15-403. Criteria for License Termination Under Restricted Conditions.

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

(1) The licensee can demonstrate that further reductions in residual radioactivity necessary to comply with the provisions of Section R313-15-402 would result in net public or environmental harm or were not being made because the residual levels associated with restricted conditions are ALARA. Determination of the levels which are ALARA must take into account consideration of any detriments, such as traffic accidents, expected to potentially result from decontamination and waste disposal; and

(2) The licensee has made provisions for legally enforceable institutional controls that provide reasonable assurance that the total effective dose equivalent from residual radioactivity distinguishable from background to the average member of the critical group will not exceed 0.25 mSv (0.025 rem)per year; and

(3) The licensee has provided sufficient financial assurance to enable an independent third party, including a governmental custodian of a site, to assume and carry out responsibilities for any necessary control and maintenance of the site. Acceptable financial assurance mechanisms are:

(a) Funds placed into an account segregated from the licensee's assets outside the licensee's administrative control as described in Subsection R313-22-35(6)(a);

(b) Surety method, insurance, or other guarantee method as described in Subsection R313-22-35(6)(b);

(c) A statement of intent in the case of Federal, State, or local Government licensees, as described in Subsection R313-22-35(6)(d); or

(d) When a governmental entity is assuming custody and ownership of a site, an arrangement that is deemed acceptable by such governmental entity; and

(4) The licensee has submitted a decommissioning plan or license termination plan to the Executive Secretary indicating the licensee's intent to decommission in accordance with Subsection R313-22-36(4) and specifying that the licensee intends to decommission by restricting use of the site. The licensee shall document in the license termination plan or decommissioning plan how the advice of individuals and institutions in the community who may be affected by the decommissioning has been sought and incorporated, as appropriate, following analysis of that advice;

(a) Licensees proposing to decommission by restricting use of

the site shall seek advice from such affected parties regarding the following matters concerning the proposed decommissioning:

(i) Whether provisions for institutional controls proposed by the licensee;

(A) Will provide reasonable assurance that the total effective dose equivalent from residual radioactivity distinguishable from background to the average member of the critical group will not exceed 0.25 mSv (0.025 rem) total effective dose equivalent per year;

(B) Will be enforceable; and

(C) Will not impose undue burdens on the local community or other affected parties; and

(ii) Whether the licensee has provided sufficient financial assurance to enable an independent third party, including a governmental custodian of a site, to assume and carry out responsibilities for any necessary control and maintenance of the site; and

(b) In seeking advice on the issues identified in Subsection R313-15-403(4)(a), the licensee shall provide for:

(i) Participation by representatives of a broad cross section of community interests who may be affected by the decommissioning;

(ii) An opportunity for a comprehensive, collective discussion on the issues by the participants represented; and

(iii) A publicly available summary of the results of all such discussions, including a description of the individual viewpoints of the participants on the issues and the extent of agreement and disagreement among the participants on the issues; and

(5) Residual radioactivity at the site has been reduced so that if the institutional controls were no longer in effect, there is reasonable assurance that the total effective dose equivalent from residual radioactivity distinguishable from background to the average member of the critical group is as low as reasonably achievable and would not exceed either:

(a) one mSv (0.1 rem) per year; or

(b) five mSv (0.5 rem) per year provided the licensee:

(i) Demonstrates that further reductions in residual radioactivity necessary to comply with the one mSv (0.1 rem) per year value of Subsection R313-15-403(5)(a) are not technically achievable, would be prohibitively expensive, or would result in net public or environmental harm;

(ii) Makes provisions for durable institutional controls; and

(iii) Provides sufficient financial assurance to enable a responsible government entity or independent third party, including a governmental custodian of a site, both to carry out periodic rechecks of the site no less frequently than every five years to assure that the institutional controls remain in place as necessary to meet the criteria of Subsection R313-15-403(2) and to assume and carry out responsibilities for any necessary control and maintenance of those controls. Acceptable financial assurance mechanisms are those in Subsection R313-15-403(3).

R313-15-404. Alternate Criteria for License Termination.

(1) The Executive Secretary may terminate a license using

alternative criteria greater than the dose criterion of Section R313-15-402, and Subsections R313-15-403(2) and R313-15-403(4)(a)(i)(A), if the licensee:

(a) Provides assurance that public health and safety would continue to be protected, and that it is unlikely that the dose from all man-made sources combined, other than medical, would be more than the one mSv (0.1 rem) per year limit of Subsection R313-15-301(1)(a), by submitting an analysis of possible sources of exposure; and

(b) Has employed, to the extent practical, restrictions on site use according to the provisions of Section R313-15-403 in minimizing exposures at the site; and

(c) Reduces doses to ALARA levels, taking into consideration any detriments such as traffic accidents expected to potentially result from decontamination and waste disposal; and

(d) Has submitted a decommissioning plan or license termination plan to the Executive Secretary indicating the licensee's intent to decommission in accordance with Subsection R313-22-36(4), and specifying that the licensee proposes to decommission by use of alternate criteria. The licensee shall document in the decommissioning plan or license termination plan how the advice of individuals and institutions in the community who may be affected by the decommissioning has been sought and addressed, as appropriate, following analysis of that advice. In seeking such advice, the licensee shall provide for:

(i) Participation by representatives of a broad cross section of community interests who may be affected by the decommissioning; and

(ii) An opportunity for a comprehensive, collective discussion on the issues by the participants represented; and

(iii) A publicly available summary of the results of all such discussions, including a description of the individual viewpoints of the participants on the issues and the extent of agreement and disagreement among the participants on the issues.

(2) The use of alternate criteria to terminate a license requires the approval of the Executive Secretary after consideration of recommendations from the Division's staff, comments provided by federal, state and local governments, and any public comments submitted pursuant to Section R313-15-405.

R313-15-405. Public Notification and Public Participation.

Upon the receipt of a license termination plan or decommissioning plan from the licensee, or a proposal by the licensee for release of a site pursuant to Sections R313-15-403 or R313-15-404, or whenever the Executive Secretary deems such notice to be in the public interest, the Executive Secretary shall:

(1) Notify and solicit comments from:

(a) Local and State governments in the vicinity of the site and any Indian Nation or other indigenous people that have treaty or statutory rights that could be affected by the decommissioning; and

(b) Federal, state and local governments for cases where the licensee proposes to release a site pursuant to Section R313-15-

404.

(2) Publish a notice in a forum, such as local newspapers, letters to State or local organizations, or other appropriate forum, that is readily accessible to individuals in the vicinity of the site, and solicit comments from affected parties.

R313-15-406. Minimization of Contamination.

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

R313-15-501. Surveys and Monitoring - General.

(1) Each licensee or registrant shall make, or cause to be made, surveys that:

(a) Are necessary for the licensee or registrant to comply with Rule R313-15; and

(b) Are necessary under the circumstances to evaluate:

(i) The magnitude and the extent of radiation levels; and

(ii) Concentrations or quantities of radioactive material; and

(iii) The potential radiological hazards.

(2) The licensee or registrant shall ensure that instruments and equipment used for quantitative radiation measurements, for example, dose rate and effluent monitoring, are calibrated at intervals not to exceed 12 months for the radiation measured, except when a more frequent interval is specified in another applicable part of these rules or a license condition.

(3) All personnel dosimeters, except for direct and indirect reading pocket ionization chambers and those dosimeters used to measure the dose to any extremity, that require processing to determine the radiation dose and that are used by licensees and registrants to comply with Section R313-15-201, with other applicable provisions of these rules, or with conditions specified in a license or registration shall be processed and evaluated by a dosimetry processor:

(a) Holding current personnel dosimetry accreditation from the National Voluntary Laboratory Accreditation Program (NVLAP) of the National Institute of Standards and Technology; and

(b) Approved in this accreditation process for the type of radiation or radiations included in the NVLAP program that most closely approximates the type of radiation or radiations for which the individual wearing the dosimeter is monitored.

(4) The licensee or registrant shall ensure that adequate precautions are taken to prevent a deceptive exposure of an individual monitoring device.

R313-15-502. Conditions Requiring Individual Monitoring of External and Internal Occupational Dose.

Each licensee or registrant shall monitor exposures from sources of radiation at levels sufficient to demonstrate compliance with the occupational dose limits of Rule R313-15. As a minimum:

(1) Each licensee or registrant shall monitor occupational exposure to radiation from licensed, unlicensed, and registered radiation sources under the control of the licensee and shall supply and require the use of individual monitoring devices by:

(a) Adults likely to receive, in one year from sources external to the body, a dose in excess of ten percent of the limits in Subsection R313-15-201(1); and

(b) Minors likely to receive, in one year, from radiation sources external to the body, a deep dose equivalent in excess of one mSv (0.1 rem), a lens dose equivalent in excess of 1.5 mSv (0.15 rem), or a shallow dose equivalent to the skin or to the extremities in excess of five mSv (0.5 rem); and

(c) Declared pregnant women likely to receive during the entire pregnancy, from radiation sources external to the body, a deep dose equivalent in excess of one mSv (0.1 rem); and

(d) Individuals entering a high or very high radiation area; and

(e) Individuals working with medical fluoroscopic equipment.

(i) An individual monitoring device used for the dose to an embryo/fetus of a declared pregnant woman, pursuant to Subsection R313-15-208(1), shall be located under the protective apron at the waist.

(A) If an individual monitoring device worn by a declared pregnant woman has a monthly reported dose equivalent value in excess of 0.5 mSv (50 mrem), the value to be used for determining the dose to the embryo/fetus, pursuant to Subsection R313-15-208(3)(a) for radiation from medical fluoroscopy, may be the value reported by the individual monitoring device worn at the waist underneath the protective apron which has been corrected for the potential overestimation of dose recorded by the monitoring device because of the overlying tissue of the pregnant individual. This correction shall be performed by a radiation safety officer of an institutional radiation safety committee, a qualified expert approved by the Board, or a representative of the Executive Secretary.

(ii) An individual monitoring device used for lens dose equivalent shall be located at the neck, or an unshielded location closer to the eye, outside the protective apron.

(iii) When only one individual monitoring device is used to determine the effective dose equivalent for external radiation pursuant to Subsection R313-15-201(3)(b), it shall be located at the neck outside the protective apron. When a second individual monitoring device is used, for the same purpose, it shall be located under the protective apron at the waist. Note: The second individual monitoring device is required for a declared pregnant woman.

(2) Each licensee or registrant shall monitor, to determine compliance with Section R313-15-204, the occupational intake of radioactive material by and assess the committed effective dose equivalent to:

(a) Adults likely to receive, in one year, an intake in excess of ten percent of the applicable ALI(s) in Table I, Columns 1 and 2, of Appendix B of 10 CFR 20.1001 to 20.2402, 2001 ed., which is incorporated by reference; and

(b) Minors likely to receive, in one year, a committed effective dose equivalent in excess of one mSv (0.1 rem); and

(c) Declared pregnant women likely to receive, during the entire pregnancy, a committed effective dose equivalent in excess of one mSv (0.1 rem).

Note: All of the occupational doses in Section R313-15-201 continue to be applicable to the declared pregnant worker as long as the embryo/fetus dose limit is not exceeded.

R313-15-503. Location of Individual Monitoring Devices.

Each licensee or registrant shall ensure that individuals who are required to monitor occupational doses in accordance with Subsection R313-15-502(1) wear individual monitoring devices as follows:

(1) An individual monitoring device used for monitoring the dose to the whole body shall be worn at the unshielded location of the whole body likely to receive the highest exposure. When a protective apron is worn, the location of the individual monitoring device is typically at the neck (collar).

(2) An individual monitoring device used for monitoring the dose to an embryo/fetus of a declared pregnant woman, pursuant to Subsection R313-15-208(1), shall be located at the waist under any protective apron being worn by the woman.

(3) An individual monitoring device used for monitoring the lens dose equivalent, to demonstrate compliance with Subsection R313-15-201(1)(b)(i), shall be located at the neck (collar), outside any protective apron being worn by the monitored individual, or at an unshielded location closer to the eye.

(4) An individual monitoring device used for monitoring the dose to the extremities, to demonstrate compliance with Subsection R313-15-201(1)(b)(ii), shall be worn on the extremity likely to receive the highest exposure. Each individual monitoring device shall be oriented to measure the highest dose to the extremity being monitored.

R313-15-601. Control of Access to High Radiation Areas.

(1) The licensee or registrant shall ensure that each entrance or access point to a high radiation area has one or more of the following features:

(a) A control device that, upon entry into the area, causes the level of radiation to be reduced below that level at which an individual might receive a deep dose equivalent of one mSv (0.1 rem) in one hour at 30 centimeters from the source of radiation or from any surface that the radiation penetrates; or

(b) A control device that energizes a conspicuous visible or audible alarm signal so that the individual entering the high radiation area and the supervisor of the activity are made aware of the entry; or

(c) Entryways that are locked, except during periods when access to the areas is required, with positive control over each individual entry.

(2) In place of the controls required by Subsection R313-15-601(1) for a high radiation area, the licensee or registrant may

substitute continuous direct or electronic surveillance that is capable of preventing unauthorized entry.

(3) The licensee or registrant may apply to the Executive Secretary for approval of alternative methods for controlling access to high radiation areas.

(4) The licensee or registrant shall establish the controls required by Subsections R313-15-601(1) and R313-15-601(3) in a way that does not prevent individuals from leaving a high radiation area.

(5) The licensee or registrant is not required to control each entrance or access point to a room or other area that is a high radiation area solely because of the presence of radioactive materials prepared for transport and packaged and labeled in accordance with the rules of the U.S. Department of Transportation provided that:

(a) The packages do not remain in the area longer than three days; and

(b) The dose rate at one meter from the external surface of any package does not exceed 0.1 mSv (0.01 rem) per hour.

(6) The licensee or registrant is not required to control entrance or access to rooms or other areas in hospitals solely because of the presence of patients containing radioactive material, provided that there are personnel in attendance who are taking the necessary precautions to prevent the exposure of individuals to radiation or radioactive material in excess of the established limits in Rule R313-15 and to operate within the ALARA provisions of the licensee's or registrant's radiation protection program.

(7) The registrant is not required to control entrance or access to rooms or other areas containing sources of radiation capable of producing a high radiation area as described in Section R313-15-601 if the registrant has met all the specific requirements for access and control specified in other applicable sections of these rules, such as, Rule R313-36 for industrial radiography, Rule R313-28 for x rays in the healing arts, Rule R313-30 for therapeutic radiation machines, and Rule R313-35 for industrial use of x-ray systems.

R313-15-602. Control of Access to Very High Radiation Areas.

(1) In addition to the requirements in Section R313-15-601, the licensee or registrant shall institute measures to ensure that an individual is not able to gain unauthorized or inadvertent access to areas in which radiation levels could be encountered at five Gy (500 rad) or more in one hour at one meter from a source of radiation or any surface through which the radiation penetrates. This requirement does not apply to rooms or areas in which diagnostic x-ray systems are the only source of radiation, or to non-self-shielded irradiators.

(2) The registrant is not required to control entrance or access to rooms or other areas containing sources of radiation capable of producing a very high radiation area as described in Subsection R313-15-602(1) if the registrant has met all the specific requirements for access and control specified in other

applicable sections of these rules, such as, Rule R313-36 for industrial radiography, Rule R313-28 for x rays in the healing arts, Rule R313-30 for therapeutic radiation machines, and Rule R313-35 for industrial use of x-ray systems.

R313-15-603. Control of Access to Very High Radiation Areas -- Irradiators.

(1) Section R313-15-603 applies to licensees or registrants with sources of radiation in non-self-shielded irradiators. Section R313-15-603 does not apply to sources of radiation that are used in teletherapy, in industrial radiography, or in completely self-shielded irradiators in which the source of radiation is both stored and operated within the same shielding radiation barrier and, in the designed configuration of the irradiator, is always physically inaccessible to any individual and cannot create a high levels of radiation in an area that is accessible to any individual.

(2) Each area in which there may exist radiation levels in excess of five Gy (500 rad) in one hour at one meter from a source of radiation that is used to irradiate materials shall meet the following requirements:

(a) Each entrance or access point shall be equipped with entry control devices which:

(i) Function automatically to prevent any individual from inadvertently entering a very high radiation area; and

(ii) Permit deliberate entry into the area only after a control device is actuated that causes the radiation level within the area, from the source of radiation, to be reduced below that at which it would be possible for an individual to receive a deep dose equivalent in excess of one mSv (0.1 rem) in one hour; and

(iii) Prevent operation of the source of radiation if it would produce radiation levels in the area that could result in a deep dose equivalent to an individual in excess of one mSv (0.1 rem) in one hour.

(b) Additional control devices shall be provided so that, upon failure of the entry control devices to function as required by Subsection R313-15-603(2)(a):

(i) The radiation level within the area, from the source of radiation, is reduced below that at which it would be possible for an individual to receive a deep dose equivalent in excess of one mSv (0.1 rem) in one hour; and

(ii) Conspicuous visible and audible alarm signals are generated to make an individual attempting to enter the area aware of the hazard and at least one other authorized individual, who is physically present, familiar with the activity, and prepared to render or summon assistance, aware of the failure of the entry control devices.

(c) The licensee or registrant shall provide control devices so that, upon failure or removal of physical radiation barriers other than the sealed source's shielded storage container:

(i) The radiation level from the source of radiation is reduced below that at which it would be possible for an individual to receive a deep dose equivalent in excess of one mSv (0.1 rem) in

one hour; and

(ii) Conspicuous visible and audible alarm signals are generated to make potentially affected individuals aware of the hazard and the licensee or registrant or at least one other individual, who is familiar with the activity and prepared to render or summon assistance, aware of the failure or removal of the physical barrier.

(d) When the shield for stored sealed sources is a liquid, the licensee or registrant shall provide means to monitor the integrity of the shield and to signal, automatically, loss of adequate shielding.

(e) Physical radiation barriers that comprise permanent structural components, such as walls, that have no credible probability of failure or removal in ordinary circumstances need not meet the requirements of Subsections R313-15-603(2)(c) and R313-15-603(2)(d).

(f) Each area shall be equipped with devices that will automatically generate conspicuous visible and audible alarm signals to alert personnel in the area before the source of radiation can be put into operation and in time for any individual in the area to operate a clearly identified control device, which shall be installed in the area and which can prevent the source of radiation from being put into operation.

(g) Each area shall be controlled by use of such administrative procedures and such devices as are necessary to ensure that the area is cleared of personnel prior to each use of the source of radiation.

(h) Each area shall be checked by a radiation measurement to ensure that, prior to the first individual's entry into the area after any use of the source of radiation, the radiation level from the source of radiation in the area is below that at which it would be possible for an individual to receive a deep dose equivalent in excess of one mSv (0.1 rem) in one hour.

(i) The entry control devices required in Subsection R313-15-603(2)(a) shall be tested for proper functioning. See Section R313-15-1110 for recordkeeping requirements.

(i) Testing shall be conducted prior to initial operation with the source of radiation on any day, unless operations were continued uninterrupted from the previous day; and

(ii) Testing shall be conducted prior to resumption of operation of the source of radiation after any unintentional interruption; and

(iii) The licensee or registrant shall submit and adhere to a schedule for periodic tests of the entry control and warning systems.

(j) The licensee or registrant shall not conduct operations, other than those necessary to place the source of radiation in safe condition or to effect repairs on controls, unless control devices are functioning properly.

(k) Entry and exit portals that are used in transporting materials to and from the irradiation area, and that are not intended for use by individuals, shall be controlled by such devices and administrative procedures as are necessary to physically protect and warn against inadvertent entry by any

individual through these portals. Exit portals for irradiated materials shall be equipped to detect and signal the presence of any loose radioactive material that is carried toward such an exit and automatically to prevent loose radioactive material from being carried out of the area.

(3) Licensees, registrants, or applicants for licenses or registrations for sources of radiation within the purview of Subsection R313-15-603(2) which will be used in a variety of positions or in locations, such as open fields or forests, that make it impractical to comply with certain requirements of Subsection R313-15-603(2), such as those for the automatic control of radiation levels, may apply to the Executive Secretary for approval of alternative safety measures. Alternative safety measures shall provide personnel protection at least equivalent to those specified in Subsection R313-15-603(2). At least one of the alternative measures shall include an entry-preventing interlock control based on a measurement of the radiation that ensures the absence of high radiation levels before an individual can gain access to the area where such sources of radiation are used.

(4) The entry control devices required by Subsections R313-15-603(2) and R313-15-603(3) shall be established in such a way that no individual will be prevented from leaving the area.

R313-15-701. Use of Process or Other Engineering Controls.

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

R313-15-702. Use of Other Controls.

(1) When it is not practical to apply process or other engineering controls to control the concentration of radioactive material in the air to values below those that define an airborne radioactivity area, the licensee or registrant shall, consistent with maintaining the total effective dose equivalent ALARA, increase monitoring and limit intakes by one or more of the following means:

(a) Control of access; or

(b) Limitation of exposure times; or

(c) Use of respiratory protection equipment; or

(d) Other controls.

(2) If the licensee or registrant performs an ALARA analysis to determine whether or not respirators should be used, the licensee may consider safety factors other than radiological factors. The licensee or registrant should also consider the impact of respirator use on workers' industrial health and safety.

R313-15-703. Use of Individual Respiratory Protection Equipment.

If the licensee or registrant uses respiratory protection equipment to limit the intake of radioactive material:

(1) Except as provided in Subsection R313-15-703(2), the licensee or registrant shall use only respiratory protection equipment that is tested and certified by the National Institute

for Occupational Safety and Health.

(2) The licensee or registrant may use equipment that has not been tested or certified by the National Institute for Occupational Safety and Health or for which there is no schedule for testing or certification, provided the licensee or registrant has submitted to the Executive Secretary and the Executive Secretary has approved an application for authorized use of that equipment. The application must include a demonstration by testing, or a demonstration on the basis of reliable test information, that the material and performance characteristics of the equipment are capable of providing the proposed degree of protection under anticipated conditions of use.

(3) The licensee or registrant shall implement and maintain a respiratory protection program that includes:

(a) Air sampling sufficient to identify the potential hazard, permit proper equipment selection, and estimate doses; and

(b) Surveys and bioassays, as necessary, to evaluate actual intakes; and

(c) Testing of respirators for operability, user seal check for face sealing devices and functional check for others, immediately prior to each use; and

(d) Written procedures regarding

(i) Monitoring, including air sampling and bioassays;

(ii) Supervision and training of respirator users;

(iii) Fit testing;

(iv) Respirator selection;

(v) Breathing air quality;

(vi) Inventory and control;

(vii) Storage, issuance, maintenance, repair, testing, and quality assurance of respiratory protection equipment;

(viii) Recordkeeping; and

(ix) Limitations on periods of respirator use and relief from respirator use; and

(e) Determination by a physician prior to initial fitting of respirators, before the first field use of non-face sealing respirators, and either every 12 months thereafter or periodically at a frequency determined by a physician, that the individual user is medically fit to use the respiratory protection equipment; and

(f) Fit testing, with fit factor greater than or equal to ten times the APF for negative pressure devices, and a fit factor greater than or equal to 500 for positive pressure, continuous flow, and pressure-demand devices, before the first field use of tight fitting, face-sealing respirators and periodically thereafter at a frequency not to exceed one year. Fit testing must be performed with the facepiece operating in the negative pressure mode.

(4) The licensee or registrant shall advise each respirator user that the user may leave the area at any time for relief from respirator use in the event of equipment malfunction, physical or psychological distress, procedural or communication failure, significant deterioration of operating conditions, or any other conditions that might require such relief.

(5) The licensee or registrant shall also consider limitations appropriate to the type and mode of use. When

selecting respiratory devices the licensee shall provide for vision correction, adequate communication, low temperature work environments, and the concurrent use of other safety or radiological protection equipment. The licensee or registrant shall use equipment in such a way as not to interfere with the proper operation of the respirator.

(6) Standby rescue persons are required whenever one-piece atmosphere-supplying suits, or any combination of supplied air respiratory protection device and personnel protective equipment are used from which an unaided individual would have difficulty extricating himself or herself. The standby persons must be equipped with respiratory protection devices or other apparatus appropriate for the potential hazards. The standby rescue persons shall observe or otherwise maintain continuous communication with the workers (visual, voice, signal line, telephone, radio, or other suitable means), and be immediately available to assist them in case of a failure of the air supply or for any other reason that requires relief from distress. A sufficient number of standby rescue persons must be immediately available to assist all users of this type of equipment and to provide effective emergency rescue if needed.

(7) Atmosphere-supplying respirators must be supplied with respirable air of grade D quality or better as defined by the Compressed Gas Association in publication G-7.1, "Commodity Specification for Air," 1997 ed. and included in 29 CFR 1910.134(i)(1)(ii)(A) through (E), 2000 ed. Grade D quality air criteria include:

(a) Oxygen content (v/v) of 19.5 to 23.5%;

(b) Hydrocarbon (condensed) content of five milligrams per cubic meter of air or less;

(c) Carbon monoxide (CO) content of ten ppm or less;

(d) Carbon dioxide content of 1,000 ppm or less; and

(e) Lack of noticeable odor.

(8) The licensee shall ensure that no objects, materials or substances, such as facial hair, or any conditions that interfere with the face and facepiece seal or valve function, and that are under the control of the respirator wearer, are present between the skin of the wearer's face and the sealing surface of a tight-fitting respirator facepiece.

(9) In estimating the dose to individuals from intake of airborne radioactive materials, the concentration of radioactive material in the air that is inhaled when respirators are worn is initially assumed to be the ambient concentration in air without respiratory protection, divided by the assigned protection factor. If the dose is later found to be greater than the estimated dose, the corrected value must be used. If the dose is later found to be less than the estimated dose, the corrected value may be used.

R313-15-704 Further Restrictions on the Use of Respiratory Protection Equipment.

The Executive Secretary may impose restrictions in addition to the provisions of Section R313-15-702, Section R313-15-703, and Appendix A of 10 CFR 20.1001 to 20.2402, 2001 ed., which is

incorporated by reference to:

(1) Ensure that the respiratory protection program of the licensee or registrant is adequate to limit doses to individuals from intakes of airborne radioactive materials consistent with maintaining total effective dose equivalent ALARA; and

(2) Limit the extent to which a licensee or registrant may use respiratory protection equipment instead of process or other engineering controls.

R313-15-705 Application for Use of Higher Assigned Protection Factors.

The licensee or registrant shall obtain authorization from the Executive Secretary before using assigned protection factors in excess of those specified in Appendix A of 10 CFR 20.1001 to 20.2402, 2001 ed., which is incorporated by reference. The Executive Secretary may authorize a licensee or registrant to use higher assigned protection factors on receipt of an application that:

(1) Describes the situation for which a need exists for higher protection factors; and

(2) Demonstrates that the respiratory protection equipment provides these higher protection factors under the proposed conditions of use.

R313-15-801. Security and Control of Licensed or Registered Sources of Radiation.

(1) The licensee or registrant shall secure licensed or registered radioactive material from unauthorized removal or access.

(2) The licensee or registrant shall maintain constant surveillance, and use devices or administrative procedures to prevent unauthorized use of licensed or registered radioactive material that is in an unrestricted area and that is not in storage.

(3) The registrant shall secure registered radiation machines from unauthorized removal.

(4) The registrant shall use devices or administrative procedures to prevent unauthorized use of registered radiation machines.

R313-15-901. Caution Signs.

(1) Standard Radiation Symbol. Unless otherwise authorized by the Executive Secretary, the symbol prescribed by 10 CFR 20.1901, 2001 ed., which is incorporated by reference, shall use the colors magenta, or purple, or black on yellow background. The symbol prescribed is the three-bladed design as follows:

(a) Cross-hatched area is to be magenta, or purple, or black, and

(b) The background is to be yellow.

(2) Exception to Color Requirements for Standard Radiation Symbol. Notwithstanding the requirements of 10 CFR 20.1901(a), 2001 ed., which is incorporated by reference, licensees or registrants are authorized to label sources, source holders, or

device components containing sources of radiation that are subjected to high temperatures, with conspicuously etched or stamped radiation caution symbols and without a color requirement.

(3) Additional Information on Signs and Labels. In addition to the contents of signs and labels prescribed in Rule R313-15, the licensee or registrant shall provide, on or near the required signs and labels, additional information, as appropriate, to make individuals aware of potential radiation exposures and to minimize the exposures.

R313-15-902. Posting Requirements.

(1) Posting of Radiation Areas. The licensee or registrant shall post each radiation area with a conspicuous sign or signs bearing the radiation symbol and the words "CAUTION, RADIATION AREA."

(2) Posting of High Radiation Areas. The licensee or registrant shall post each high radiation area with a conspicuous sign or signs bearing the radiation symbol and the words "CAUTION, HIGH RADIATION AREA" or "DANGER, HIGH RADIATION AREA."

(3) Posting of Very High Radiation Areas. The licensee or registrant shall post each very high radiation area with a conspicuous sign or signs bearing the radiation symbol and words "GRAVE DANGER, VERY HIGH RADIATION AREA."

(4) Posting of Airborne Radioactivity Areas. The licensee or registrant shall post each airborne radioactivity area with a conspicuous sign or signs bearing the radiation symbol and the words "CAUTION, AIRBORNE RADIOACTIVITY AREA" or "DANGER, AIRBORNE RADIOACTIVITY AREA."

(5) Posting of Areas or Rooms in which Licensed or Registered Material is Used or Stored. The licensee or registrant shall post each area or room in which there is used or stored an amount of licensed or registered material exceeding ten times the quantity of such material specified in Appendix C of 10 CFR 20.1001 to 20.2402, 2001 ed., which is incorporated by reference, with a conspicuous sign or signs bearing the radiation symbol and the words "CAUTION, RADIOACTIVE MATERIAL" or "DANGER, RADIOACTIVE MATERIAL."

R313-15-903. Exceptions to Posting Requirements.

(1) A licensee or registrant is not required to post caution signs in areas or rooms containing sources of radiation for periods of less than eight hours, if each of the following conditions is met:

(a) The sources of radiation are constantly attended during these periods by an individual who takes the precautions necessary to prevent the exposure of individuals to sources of radiation in excess of the limits established in Rule R313-15; and

(b) The area or room is subject to the licensee's or registrant's control.

(2) Rooms or other areas in hospitals that are occupied by patients are not required to be posted with caution signs pursuant to Section R313-15-902 provided that the patient could be released from licensee control pursuant to Section R313-32-75.

(3) A room or area is not required to be posted with a

caution sign because of the presence of a sealed source provided the radiation level at 30 centimeters from the surface of the sealed source container or housing does not exceed 0.05 mSv (0.005 rem) per hour.

(4) A room or area is not required to be posted with a caution sign because of the presence of radiation machines used solely for diagnosis in the healing arts.

(5) Rooms in hospitals or clinics that are used for teletherapy are exempt from the requirement to post caution signs under Section R313-15-902 if:

(a) Access to the room is controlled pursuant to Section R313-32-615; and

(b) Personnel in attendance take necessary precautions to prevent the inadvertent exposure of workers, other patients, and members of the public to radiation in excess of the limits established in Rule R313-15.

R313-15-904. Labeling Containers and Radiation Machines.

(1) The licensee or registrant shall ensure that each container of licensed or registered material bears a durable, clearly visible label bearing the radiation symbol and the words "CAUTION, RADIOACTIVE MATERIAL" or "DANGER, RADIOACTIVE MATERIAL." The label shall also provide information, such as the radionuclides present, an estimate of the quantity of radioactivity, the date for which the activity is estimated, radiation levels, kinds of materials, and mass enrichment, to permit individuals handling or using the containers, or working in the vicinity of the containers, to take precautions to avoid or minimize exposures.

(2) Each licensee or registrant shall, prior to removal or disposal of empty uncontaminated containers to unrestricted areas, remove or deface the radioactive material label or otherwise clearly indicate that the container no longer contains radioactive materials.

(3) Each registrant shall ensure that each radiation machine is labeled in a conspicuous manner which cautions individuals that radiation is produced when it is energized.

R313-15-905. Exemptions to Labeling Requirements.

A licensee or registrant is not required to label:

(1) Containers holding licensed or registered material in quantities less than the quantities listed in Appendix C of 10 CFR 20.1001 to 20.2402, 2001 ed., which is incorporated by reference; or

(2) Containers holding licensed or registered material in concentrations less than those specified in Table III of Appendix B of 10 CFR 20.1001 to 20.2402, 2001 ed., which is incorporated by reference; or

(3) Containers attended by an individual who takes the precautions necessary to prevent the exposure of individuals in excess of the limits established by Rule R313-15; or

(4) Containers when they are in transport and packaged and labeled in accordance with the rules of the U.S. Department of Transportation; or

(5) Containers that are accessible only to individuals authorized to handle or use them, or to work in the vicinity of the containers, if the contents are identified to these individuals by a readily available written record. Examples of containers of this type are containers in locations such as water-filled canals, storage vaults, or hot cells. The record shall be retained as long as the containers are in use for the purpose indicated on the record; or

(6) Installed manufacturing or process equipment, such as piping and tanks.

R313-15-906. Procedures for Receiving and Opening Packages.

(1) Each licensee or registrant who expects to receive a package containing quantities of radioactive material in excess of a Type A quantity, as used in Section R313-19-100, which incorporates 10 CFR 71.4 by reference, shall make arrangements to receive:

(a) The package when the carrier offers it for delivery; or

(b) The notification of the arrival of the package at the carrier's terminal and to take possession of the package expeditiously.

(2) Each licensee or registrant shall:

(a) Monitor the external surfaces of a labeled package for radioactive contamination unless the package contains only radioactive material in the form of gas or in special form as defined in Section R313-12-3; and

(b) Monitor the external surfaces of a labeled package for radiation levels unless the package contains quantities of radioactive material that are less than or equal to the Type A quantity, as used in Section R313-19-100, which incorporates 10 CFR 71.4 by reference; and

(c) Monitor all packages known to contain radioactive material for radioactive contamination and radiation levels if there is evidence of degradation of package integrity, such as packages that are crushed, wet, or damaged.

(3) The licensee or registrant shall perform the monitoring required by Subsection R313-15-906(2) as soon as practical after receipt of the package, but not later than three hours after the package is received at the licensee's or registrant's facility if it is received during the licensee's or registrant's normal working hours or if there is evidence of degradation of package integrity, such as a package that is crushed, wet, or damaged. If a package is received after working hours, and has no evidence of degradation of package integrity, the package shall be monitored no later than three hours from the beginning of the next working day.

(4) The licensee or registrant shall immediately notify the final delivery carrier and, by telephone and telegram, mailgram, or facsimile, the Executive Secretary when:

(a) Removable radioactive surface contamination exceeds the limits of Section R313-19-100 which incorporates 10 CFR 71.87(i) by reference; or

(b) External radiation levels exceed the limits of Section R313-19-100 which incorporates 10 CFR 71.47 by reference.

(5) Each licensee or registrant shall:

(a) Establish, maintain, and retain written procedures for safely opening packages in which radioactive material is received; and

(b) Ensure that the procedures are followed and that due consideration is given to special instructions for the type of package being opened.

(6) Licensees or registrants transferring special form sources in vehicles owned or operated by the licensee or registrant to and from a work site are exempt from the contamination monitoring requirements of Subsection R313-15-906(2), but are not exempt from the monitoring requirement in Subsection R313-15-906(2) for measuring radiation levels that ensures that the source is still properly lodged in its shield.

R313-15-1001. Waste Disposal - General Requirements.

(1) A licensee or registrant shall dispose of licensed or registered material only:

(a) By transfer to an authorized recipient as provided in Section R313-15-1006 or in Rules R313-21, R313-22, or R313-25, or to the U.S. Department of Energy; or

(b) By decay in storage; or

(c) By release in effluents within the limits in Section R313-15-301; or

(d) As authorized pursuant to Sections R313-15-1002, R313-15-1003, R313-15-1004, or R313-15-1005.

(2) A person shall be specifically licensed or registered to receive waste containing licensed or registered material from other persons for:

(a) Treatment prior to disposal; or

(b) Treatment or disposal by incineration; or

(c) Decay in storage; or

(d) Disposal at a land disposal facility licensed pursuant to Rule R313-25; or

(e) Storage until transferred to a storage or disposal facility authorized to receive the waste.

R313-15-1002. Method for Obtaining Approval of Proposed Disposal Procedures.

A licensee or registrant or applicant for a license or registration may apply to the Executive Secretary for approval of proposed procedures, not otherwise authorized in these rules, to dispose of licensed or registered material generated in the licensee's or registrant's operations. Each application shall include:

(1) A description of the waste containing licensed or registered material to be disposed of, including the physical and chemical properties that have an impact on risk evaluation, and the proposed manner and conditions of waste disposal; and

(2) An analysis and evaluation of pertinent information on the nature of the environment; and

(3) The nature and location of other potentially affected facilities; and

(4) Analyses and procedures to ensure that doses are maintained ALARA and within the dose limits in Rule R313-15.

R313-15-1003. Disposal by Release into Sanitary Sewerage.

(1) A licensee or registrant may discharge licensed or registered material into sanitary sewerage if each of the following conditions is satisfied:

(a) The material is readily soluble, or is readily dispersible biological material, in water; and

(b) The quantity of licensed or registered radioactive material that the licensee or registrant releases into the sewer in one month divided by the average monthly volume of water released into the sewer by the licensee or registrant does not exceed the concentration listed in Table III of Appendix B of 10 CFR 20.1001 to 20.2402, 2001 ed., which is incorporated by reference; and

(c) If more than one radionuclide is released, the following conditions shall also be satisfied:

(i) The licensee or registrant shall determine the fraction of the limit in Table III of Appendix B of 10 CFR 20.1001 to 20.2402, 2001 ed., which is incorporated by reference, represented by discharges into sanitary sewerage by dividing the actual monthly average concentration of each radionuclide released by the licensee or registrant into the sewer by the concentration of that radionuclide listed in Table III of Appendix B of 10 CFR 20.1001 to 20.2402, 2001 ed., which is incorporated by reference; and

(ii) The sum of the fractions for each radionuclide required by Subsection R313-15-1003(1)(c)(i) does not exceed unity; and

(d) The total quantity of licensed or registered radioactive material that the licensee or registrant releases into the sanitary sewerage system in a year does not exceed 185 GBq (five Ci) of hydrogen-3, 37 GBq (one Ci) of carbon-14, and 37 GBq (one Ci) of all other radioactive materials combined.

(2) Excreta from individuals undergoing medical diagnosis or therapy with radioactive material are not subject to the limitations contained in Subsection R313-15-1003(1).

R313-15-1004. Treatment or Disposal by Incineration.

A licensee or registrant may treat or dispose of licensed or registered material by incineration only in the form and concentration specified in Section R313-15-1005 or as specifically approved by the Executive Secretary pursuant to Section R313-15-1002.

R313-15-1005. Disposal of Specific Wastes.

(1) A licensee or registrant may dispose of the following licensed or registered material as if it were not radioactive:

(a) 1.85 kBq (0.05 uCi), or less, of hydrogen-3 or carbon-14 per gram of medium used for liquid scintillation counting; and

(b) 1.85 kBq (0.05 uCi) or less, of hydrogen-3 or carbon-14 per gram of animal tissue, averaged over the weight of the entire animal.

(2) A licensee or registrant shall not dispose of tissue pursuant to Subsection R313-15-1005(1)(b) in a manner that would

permit its use either as food for humans or as animal feed.

(3) The licensee or registrant shall maintain records in accordance with Section R313-15-1109.

R313-15-1006. Transfer for Disposal and Manifests.

(1) The requirements of Section R313-15-1006 and Appendix G of 10 CFR 20.1001 to 20.2402, 2001 ed., which are incorporated into these rules by reference, are designed to:

(a) control transfers of low-level radioactive waste by any waste generator, waste collector, or waste processor licensee, as defined in Appendix G in 10 CFR 20.1001 to 20.2402, 2001 ed., who ships low-level waste either directly, or indirectly through a waste collector or waste processor, to a licensed low-level waste land disposal facility as defined in Section R313-25-2;

(b) establish a manifest tracking system; and

(c) supplement existing requirements concerning transfers and recordkeeping for those wastes.

(2) Any licensee shipping radioactive waste intended for ultimate disposal at a licensed land disposal facility must document the information required on the U.S. Nuclear Regulatory Commission's Uniform Low-Level Radioactive Waste Manifest and transfer this recorded manifest information to the intended consignee in accordance with Appendix G to 10 CFR 20.1001 to 20.2402, 2001 ed., which is incorporated into these rules by reference.

(3) Each shipment manifest shall include a certification by the waste generator as specified in Section II of Appendix G to 10 CFR 20.1001 to 20.2402, 2001 ed., which is incorporated by reference.

(4) Each person involved in the transfer of waste for disposal or in the disposal of waste, including the waste generator, waste collector, waste processor, and disposal facility operator, shall comply with the requirements specified in Section III of Appendix G to 10 CFR 20.1001 to 20.2402, 2001 ed., which is incorporated by reference.

R313-15-1007. Compliance with Environmental and Health Protection Rules.

Nothing in Sections R313-15-1001, R313-15-1002, R313-15-1003, R313-15-1004, R313-15-1005, or R313-15-1006 relieves the licensee or registrant from complying with other applicable Federal, State and local rules governing any other toxic or hazardous properties of materials that may be disposed of pursuant to Sections R313-15-1001, R313-15-1002, R313-15-1003, R313-15-1004, R313-15-1005, or R313-15-1006.

R313-15-1008. Classification and Characteristics of Low-Level Radioactive Waste.

(1) Classification of Radioactive Waste for Land Disposal

(a) Considerations. Determination of the classification of radioactive waste involves two considerations. First, consideration shall be given to the concentration of long-lived radionuclides (and their shorter-lived precursors) whose potential

hazard will persist long after such precautions as institutional controls, improved waste form, and deeper disposal have ceased to be effective. These precautions delay the time when long-lived radionuclides could cause exposures. In addition, the magnitude of the potential dose is limited by the concentration and availability of the radionuclide at the time of exposure. Second, consideration shall be given to the concentration of shorter-lived radionuclides for which requirements on institutional controls, waste form, and disposal methods are effective.

(b) Classes of waste.

(i) Class A waste is waste that is usually segregated from other waste classes at the disposal site. The physical form and characteristics of Class A waste shall meet the minimum requirements set forth in Subsection R313-15-1008(2)(a). If Class A waste also meets the stability requirements set forth in Subsection R313-15-1008(2)(b), it is not necessary to segregate the waste for disposal.

(ii) Class B waste is waste that shall meet more rigorous requirements on waste form to ensure stability after disposal. The physical form and characteristics of Class B waste shall meet both the minimum and stability requirements set forth in Subsection R313-15-1008(2).

(iii) Class C waste is waste that not only shall meet more rigorous requirements on waste form to ensure stability but also requires additional measures at the disposal facility to protect against inadvertent intrusion. The physical form and characteristics of Class C waste shall meet both the minimum and stability requirements set forth in Subsection R313-15-1008(2).

(c) Classification determined by long-lived radionuclides. If the radioactive waste contains only radionuclides listed in Table I, classification shall be determined as follows:

(i) If the concentration does not exceed 0.1 times the value in Table I, the waste is Class A.

(ii) If the concentration exceeds 0.1 times the value in Table I, but does not exceed the value in Table I, the waste is Class C.

(iii) If the concentration exceeds the value in Table I, the waste is not generally acceptable for land disposal.

(iv) For wastes containing mixtures of radionuclides listed in Table I, the total concentration shall be determined by the sum of fractions rule described in Subsection R313-15-1008(1)(g).

TABLE I

Radionuclide	Concentration curie/cubic meter(1)	nanocurie/gram(2)
C-14	8	
C-14 in activated metal	80	
Ni-59 in activated metal	220	
Nb-94 in activated metal	0.2	
Tc-99	3	
I-129	0.08	

Alpha emitting transuranic radionuclides with half-life greater than five years	100
Pu-241	3,500
Cm-242	20,000
Ra-226	100

NOTE: (1) To convert the Ci/m^3 values to gigabecquerel (GBq)/cubic meter, multiply the Ci/m^3 value by 37.
(2) To convert the nCi/g values to becquerel (Bq)/gram, multiply the nCi/g value by 37.

(d) Classification determined by short-lived radionuclides. If the waste does not contain any of the radionuclides listed in Table I, classification shall be determined based on the concentrations shown in Table II. However, as specified in Subsection R313-15-1008(1)(f), if radioactive waste does not contain any nuclides listed in either Table I or II, it is Class A.

(i) If the concentration does not exceed the value in Column 1, the waste is Class A.

(ii) If the concentration exceeds the value in Column 1 but does not exceed the value in Column 2, the waste is Class B.

(iii) If the concentration exceeds the value in Column 2 but does not exceed the value in Column 3, the waste is Class C.

(iv) If the concentration exceeds the value in Column 3, the waste is not generally acceptable for near-surface disposal.

(v) For wastes containing mixtures of the radionuclides listed in Table II, the total concentration shall be determined by the sum of fractions rule described in Subsection R313-15-1008(1)(g).

TABLE II

Radionuclide	Concentration, curie/cubic meter(1) Column 1	Column 2	Column 3
Total of all radionuclides with less than 5-year half-life	700	(2)	(2)
H-3	40	(2)	(2)
Co-60	700	(2)	(2)
Ni-63	3.5	70	700
Ni-63 in activated metal	35	700	7000
Sr-90	0.04	150	7000
Cs-137	1	44	4600

NOTE: (1) To convert the Ci/m^3 value to gigabecquerel (GBq)/cubic meter, multiply the Ci/m^3 value by 37.
(2) There are no limits established for these radionuclides in Class B or C wastes. Practical considerations such as the effects of external radiation and internal heat generation on transportation, handling, and disposal will limit the

concentrations for these wastes. These wastes shall be Class B unless the concentrations of other radionuclides in Table II determine the waste to be Class C independent of these radionuclides.

(e) Classification determined by both long- and short-lived radionuclides. If the radioactive waste contains a mixture of radionuclides, some of which are listed in Table I and some of which are listed in Table II, classification shall be determined as follows:

(i) If the concentration of a radionuclide listed in Table I is less than 0.1 times the value listed in Table I, the class shall be that determined by the concentration of radionuclides listed in Table II.

(ii) If the concentration of a radionuclide listed in Table I exceeds 0.1 times the value listed in Table I, but does not exceed the value in Table I, the waste shall be Class C, provided the concentration of radionuclides listed in Table II does not exceed the value shown in Column 3 of Table II.

(f) Classification of wastes with radionuclides other than those listed in Tables I and II. If the waste does not contain any radionuclides listed in either Table I or II, it is Class A.

(g) The sum of the fractions rule for mixtures of radionuclides. For determining classification for waste that contains a mixture of radionuclides, it is necessary to determine the sum of fractions by dividing each radionuclide's concentration by the appropriate limit and adding the resulting values. The appropriate limits shall all be taken from the same column of the same table. The sum of the fractions for the column shall be less than 1.0 if the waste class is to be determined by that column. Example: A waste contains Sr-90 in a concentration of 1.85 TBq/m^3 (50 Ci/m^3) and Cs-137 in a concentration of 814 GBq/m^3 (22 Ci/m^3). Since the concentrations both exceed the values in Column 1, Table II, they shall be compared to Column 2 values. For Sr-90 fraction, 50/150 = 0.33., for Cs-137 fraction, 22/44 = 0.5; the sum of the fractions = 0.83. Since the sum is less than 1.0, the waste is Class B.

(h) Determination of concentrations in wastes. The concentration of a radionuclide may be determined by indirect methods such as use of scaling factors which relate the inferred concentration of one radionuclide to another that is measured, or radionuclide material accountability, if there is reasonable assurance that the indirect methods can be correlated with actual measurements. The concentration of a radionuclide may be averaged over the volume of the waste, or weight of the waste if the units are expressed as becquerel (nanocurie) per gram.

(2) Radioactive Waste Characteristics

(a) The following are minimum requirements for all classes of waste and are intended to facilitate handling and provide protection of health and safety of personnel at the disposal site.

(i) Wastes shall be packaged in conformance with the conditions of the license issued to the site operator to which the waste will be shipped. Where the conditions of the site license are more restrictive than the provisions of Rule R313-15, the site

license conditions shall govern.

(ii) Wastes shall not be packaged for disposal in cardboard or fiberboard boxes.

(iii) Liquid waste shall be packaged in sufficient absorbent material to absorb twice the volume of the liquid.

(iv) Solid waste containing liquid shall contain as little free-standing and non-corrosive liquid as is reasonably achievable, but in no case shall the liquid exceed one percent of the volume.

(v) Waste shall not be readily capable of detonation or of explosive decomposition or reaction at normal pressures and temperatures, or of explosive reaction with water.

(vi) Waste shall not contain, or be capable of generating, quantities of toxic gases, vapors, or fumes harmful to persons transporting, handling, or disposing of the waste. This does not apply to radioactive gaseous waste packaged in accordance with Subsection R313-15-1008(2)(a)(viii).

(vii) Waste shall not be pyrophoric. Pyrophoric materials contained in wastes shall be treated, prepared, and packaged to be nonflammable.

(viii) Wastes in a gaseous form shall be packaged at an absolute pressure that does not exceed 1.5 atmospheres at 20 degrees celsius. Total activity shall not exceed 3.7 TBq (100 Ci) per container.

(ix) Wastes containing hazardous, biological, pathogenic, or infectious material shall be treated to reduce to the maximum extent practical the potential hazard from the non-radiological materials.

(b) The following requirements are intended to provide stability of the waste. Stability is intended to ensure that the waste does not degrade and affect overall stability of the site through slumping, collapse, or other failure of the disposal unit and thereby lead to water infiltration. Stability is also a factor in limiting exposure to an inadvertent intruder, since it provides a recognizable and nondispersible waste.

(i) Waste shall have structural stability. A structurally stable waste form will generally maintain its physical dimensions and its form, under the expected disposal conditions such as weight of overburden and compaction equipment, the presence of moisture, and microbial activity, and internal factors such as radiation effects and chemical changes. Structural stability can be provided by the waste form itself, processing the waste to a stable form, or placing the waste in a disposal container or structure that provides stability after disposal.

(ii) Notwithstanding the provisions in Subsections R313-15-1008(2)(a)(iii) and R313-15-1008(2)(a)(iv), liquid wastes, or wastes containing liquid, shall be converted into a form that contains as little free-standing and non-corrosive liquid as is reasonably achievable, but in no case shall the liquid exceed one percent of the volume of the waste when the waste is in a disposal container designed to ensure stability, or 0.5 percent of the volume of the waste for waste processed to a stable form.

(iii) Void spaces within the waste and between the waste and its package shall be reduced to the extent practical.

(3) Labeling. Each package of waste shall be clearly labeled

to identify whether it is Class A, Class B, or Class C waste, in accordance with Subsection R313-15-1008(1).

R313-15-1101. Records - General Provisions.

(1) Each licensee or registrant shall use the SI units becquerel, gray, sievert and coulomb per kilogram, or the special units, curie, rad, rem, and roentgen, including multiples and subdivisions, and shall clearly indicate the units of all quantities on records required by Rule R313-15.

(2) Notwithstanding the requirements of Subsection R313-15-1101(1), when recording information on shipment manifests, as required in Subsection R313-15-1006(2), information must be recorded in SI units or in SI units and the special units specified in Subsection R313-15-1101(1).

(3) The licensee or registrant shall make a clear distinction among the quantities entered on the records required by Rule R313-15, such as, total effective dose equivalent, total organ dose equivalent, shallow dose equivalent, lens dose equivalent, deep dose equivalent, or committed effective dose equivalent.

R313-15-1102. Records of Radiation Protection Programs.

(1) Each licensee or registrant shall maintain records of the radiation protection program, including:

(a) The provisions of the program; and

(b) Audits and other reviews of program content and implementation.

(2) The licensee or registrant shall retain the records required by Subsection R313-15-1102(1)(a) until the Executive Secretary terminates each pertinent license or registration requiring the record. The licensee or registrant shall retain the records required by Subsection R313-15-1102(1)(b) for three years after the record is made.

R313-15-1103. Records of Surveys.

(1) Each licensee or registrant shall maintain records showing the results of surveys and calibrations required by Section R313-15-501 and Subsection R313-15-906(2). The licensee or registrant shall retain these records for three years after the record is made.

(2) The licensee or registrant shall retain each of the following records until the Executive Secretary terminates each pertinent license or registration requiring the record:

(a) Records of the results of surveys to determine the dose from external sources of radiation used, in the absence of or in combination with individual monitoring data, in the assessment of individual dose equivalents; and

(b) Records of the results of measurements and calculations used to determine individual intakes of radioactive material and used in the assessment of internal dose; and

(c) Records showing the results of air sampling, surveys, and bioassays required pursuant to Subsections R313-15-703(3)(a) and R313-15-703(3)(b); and

(d) Records of the results of measurements and calculations

used to evaluate the release of radioactive effluents to the environment.

R313-15-1104. Records of Tests for Leakage or Contamination of Sealed Sources.

Records of tests for leakage or contamination of sealed sources required by Section R313-15-1401 shall be kept in units of becquerel or microcurie and maintained for inspection by the Executive Secretary for five years after the records are made.

R313-15-1105. Records of Prior Occupational Dose.

For each individual who is likely to receive in a year an occupational dose requiring monitoring pursuant to Section R313-15-502, the licensee or registrant shall retain the records of prior occupational dose and exposure history as specified in Section R313-15-205 on form DRC-05 or equivalent until the Executive Secretary terminates each pertinent license requiring this record. The licensee or registrant shall retain records used in preparing form DRC-05 or equivalent for three years after the record is made.

R313-15-1106. Records of Planned Special Exposures.

(1) For each use of the provisions of Section R313-15-206 for planned special exposures, the licensee or registrant shall maintain records that describe:

(a) The exceptional circumstances requiring the use of a planned special exposure; and

(b) The name of the management official who authorized the planned special exposure and a copy of the signed authorization; and

(c) What actions were necessary; and

(d) Why the actions were necessary; and

(e) What precautions were taken to assure that doses were maintained ALARA; and

(f) What individual and collective doses were expected to result; and

(g) The doses actually received in the planned special exposure.

(2) The licensee or registrant shall retain the records until the Executive Secretary terminates each pertinent license or registration requiring these records.

R313-15-1107. Records of Individual Monitoring Results.

(1) Recordkeeping Requirement. Each licensee or registrant shall maintain records of doses received by all individuals for whom monitoring was required pursuant to Section R313-15-502, and records of doses received during planned special exposures, accidents, and emergency conditions. Assessments of dose equivalent and records made using units in effect before January 1, 1994, need not be changed. These records shall include, when applicable:

(a) The deep dose equivalent to the whole body, lens dose equivalent, shallow dose equivalent to the skin, and shallow dose equivalent to the extremities; and

(b) The estimated intake of radionuclides, see Section R313-15-202; and

(c) The committed effective dose equivalent assigned to the intake of radionuclides; and

(d) The specific information used to calculate the committed effective dose equivalent pursuant to Subsections R313-15-204(1) and R313-15-204(3) and when required by Section R313-15-502; and

(e) The total effective dose equivalent when required by Section R313-15-202; and

(f) The total of the deep dose equivalent and the committed dose to the organ receiving the highest total dose.

(2) Recordkeeping Frequency. The licensee or registrant shall make entries of the records specified in Subsection R313-15-1107(1) at intervals not to exceed one year.

(3) Recordkeeping Format. The licensee or registrant shall maintain the records specified in Subsection R313-15-1107(1) on form DRC-06, in accordance with the instructions for form DRC-06, or in clear and legible records containing all the information required by form DRC-06.

(4) The licensee or registrant shall maintain the records of dose to an embryo/fetus with the records of dose to the declared pregnant woman. The declaration of pregnancy, including the estimated date of conception, shall also be kept on file, but may be maintained separately from the dose records.

(5) The licensee or registrant shall retain each required form or record until the Executive Secretary terminates each pertinent license or registration requiring the record.

R313-15-1108. Records of Dose to Individual Members of the Public.

(1) Each licensee or registrant shall maintain records sufficient to demonstrate compliance with the dose limit for individual members of the public. See Section R313-15-301.

(2) The licensee or registrant shall retain the records required by Subsection R313-15-1108(1) until the Executive Secretary terminates each pertinent license or registration requiring the record. Requirements for disposition of these records, prior to license termination, are located in Section R313-12-51 for activities licensed under these rules.

R313-15-1109. Records of Waste Disposal.

(1) Each licensee or registrant shall maintain records of the disposal of licensed or registered materials made pursuant to Sections R313-15-1002, R313-15-1003, R313-15-1004, R313-15-1005, Rule R313-25, and disposal by burial in soil, including burials authorized before January 28, 1981.

(2) The licensee or registrant shall retain the records required by Subsection R313-15-1109(1) until the Executive Secretary terminates each pertinent license or registration requiring the record.

R313-15-1110. Records of Testing Entry Control Devices for Very High Radiation Areas.

(1) Each licensee or registrant shall maintain records of

tests made pursuant to Subsection R313-15-603(2)(i) on entry control devices for very high radiation areas. These records shall include the date, time, and results of each such test of function.

(2) The licensee or registrant shall retain the records required by Subsection R313-15-1110(1) for three years after the record is made.

R313-15-1111. Form of Records.

Each record required by Rule R313-15 shall be legible throughout the specified retention period. The record shall be the original or a reproduced copy or a microform, provided that the copy or microform is authenticated by authorized personnel and that the microform is capable of producing a clear copy throughout the required retention period or the record may also be stored in electronic media with the capability for producing legible, accurate, and complete records during the required retention period. Records, such as letters, drawings, and specifications, shall include all pertinent information, such as stamps, initials, and signatures. The licensee shall maintain adequate safeguards against tampering with and loss of records.

R313-15-1201. Reports of Stolen, Lost, or Missing Licensed or Registered Sources of Radiation.

(1) Telephone Reports. Each licensee or registrant shall report to the Executive Secretary by telephone as follows:

(a) Immediately after its occurrence becomes known to the licensee or registrant, stolen, lost, or missing licensed or registered radioactive material in an aggregate quantity equal to or greater than 1,000 times the quantity specified in Appendix C of 10 CFR 20.1001 to 20.2402, 2001 ed., which is incorporated by reference, under such circumstances that it appears to the licensee or registrant that an exposure could result to individuals in unrestricted areas;

(b) Within 30 days after its occurrence becomes known to the licensee or registrant, lost, stolen, or missing licensed or registered radioactive material in an aggregate quantity greater than ten times the quantity specified in Appendix C of 10 CFR 20.1001 to 20.2402, 2001 ed., which is incorporated by reference, that is still missing.

(c) Immediately after its occurrence becomes known to the registrant, a stolen, lost, or missing radiation machine.

(2) Written Reports. Each licensee or registrant required to make a report pursuant to Subsection R313-15-1201(1) shall, within 30 days after making the telephone report, make a written report to the Executive Secretary setting forth the following information:

(a) A description of the licensed or registered source of radiation involved, including, for radioactive material, the kind, quantity, and chemical and physical form; and, for radiation machines, the manufacturer, model and serial number, type and maximum energy of radiation emitted;

(b) A description of the circumstances under which the loss or theft occurred; and

(c) A statement of disposition, or probable disposition, of

the licensed or registered source of radiation involved; and

(d) Exposures of individuals to radiation, circumstances under which the exposures occurred, and the possible total effective dose equivalent to persons in unrestricted areas; and

(e) Actions that have been taken, or will be taken, to recover the source of radiation; and

(f) Procedures or measures that have been, or will be, adopted to ensure against a recurrence of the loss or theft of licensed or registered sources of radiation.

(3) Subsequent to filing the written report, the licensee or registrant shall also report additional substantive information on the loss or theft within 30 days after the licensee or registrant learns of such information.

(4) The licensee or registrant shall prepare any report filed with the Executive Secretary pursuant to Section R313-15-1201 so that names of individuals who may have received exposure to radiation are stated in a separate and detachable portion of the report.

R313-15-1202. Notification of Incidents.

(1) Immediate Notification. Notwithstanding other requirements for notification, each licensee or registrant shall immediately report each event involving a source of radiation possessed by the licensee or registrant that may have caused or threatens to cause any of the following conditions:

(a) An individual to receive:

(i) A total effective dose equivalent of 0.25 Sv (25 rem) or more; or

(ii) A lens dose equivalent of 0.75 Sv (75 rem) or more; or

(iii) A shallow dose equivalent to the skin or extremities or a total organ dose equivalent of 2.5 Gy (250 rad) or more; or

(b) The release of radioactive material, inside or outside of a restricted area, so that, had an individual been present for 24 hours, the individual could have received an intake five times the occupational ALI. This provision does not apply to locations where personnel are not normally stationed during routine operations, such as hot-cells or process enclosures.

(2) Twenty-Four Hour Notification. Each licensee or registrant shall, within 24 hours of discovery of the event, report to the Executive Secretary each event involving loss of control of a licensed or registered source of radiation possessed by the licensee or registrant that may have caused, or threatens to cause, any of the following conditions:

(a) An individual to receive, in a period of 24 hours:

(i) A total effective dose equivalent exceeding 0.05 Sv (five rem); or

(ii) A lens dose equivalent exceeding 0.15 Sv (15 rem); or

(iii) A shallow dose equivalent to the skin or extremities or a total organ dose equivalent exceeding 0.5 Sv (50 rem); or

(b) The release of radioactive material, inside or outside of a restricted area, so that, had an individual been present for 24 hours, the individual could have received an intake in excess of one occupational ALI. This provision does not apply to locations

where personnel are not normally stationed during routine operations, such as hot-cells or process enclosures.

(3) The licensee or registrant shall prepare each report filed with the Executive Secretary pursuant to Section R313-15-1202 so that names of individuals who have received exposure to sources of radiation are stated in a separate and detachable portion of the report.

(4) Licensees or registrants shall make the reports required by Subsections R313-15-1202(1) and R313-15-1202(2) to the Executive Secretary by telephone, telegram, mailgram, or facsimile.

(5) The provisions of Section R313-15-1202 do not apply to doses that result from planned special exposures, provided such doses are within the limits for planned special exposures and are reported pursuant to Section R313-15-1204.

R313-15-1203. Reports of Exposures, Radiation Levels, and Concentrations of Radioactive Material Exceeding the Constraints or Limits.

(1) Reportable Events. In addition to the notification required by Section R313-15-1202, each licensee or registrant shall submit a written report within 30 days after learning of any of the following occurrences:

(a) Incidents for which notification is required by Section R313-15-1202; or

(b) Doses in excess of any of the following:

(i) The occupational dose limits for adults in Section R313-15-201; or

(ii) The occupational dose limits for a minor in Section R313-15-207; or

(iii) The limits for an embryo/fetus of a declared pregnant woman in Section R313-15-208; or

(iv) The limits for an individual member of the public in Section R313-15-301; or

(v) Any applicable limit in the license or registration; or

(vi) The ALARA constraints for air emissions established under Subsection R313-15-101(4); or

(c) Levels of radiation or concentrations of radioactive material in:

(i) A restricted area in excess of applicable limits in the license or registration; or

(ii) An unrestricted area in excess of ten times the applicable limit set forth in Rule R313-15 or in the license or registration, whether or not involving exposure of any individual in excess of the limits in Section R313-15-301; or

(d) For licensees subject to the provisions of U.S. Environmental Protection Agency's generally applicable environmental radiation standards in 40 CFR 190, levels of radiation or releases of radioactive material in excess of those standards, or of license conditions related to those standards.

(2) Contents of Reports.

(a) Each report required by Subsection R313-15-1203(1) shall describe the extent of exposure of individuals to radiation and radioactive material, including, as appropriate:

(i) Estimates of each individual's dose; and

(ii) The levels of radiation and concentrations of radioactive material involved; and

(iii) The cause of the elevated exposures, dose rates, or concentrations; and

(iv) Corrective steps taken or planned to ensure against a recurrence, including the schedule for achieving conformance with applicable limits, ALARA constraints, generally applicable environmental standards, and associated license or registration conditions.

(b) Each report filed pursuant to Subsection R313-15-1203(1) shall include for each occupationally overexposed individual: the name, Social Security account number, and date of birth. With respect to the limit for the embryo/fetus in Section R313-15-208, the identifiers should be those of the declared pregnant woman. The report shall be prepared so that this information is stated in a separate and detachable portion of the report.

(3) All licensees or registrants who make reports pursuant to Subsection R313-15-1203(1) shall submit the report in writing to the Executive Secretary.

R313-15-1204. Reports of Planned Special Exposures.

The licensee or registrant shall submit a written report to the Executive Secretary within 30 days following any planned special exposure conducted in accordance with Section R313-15-206, informing the Executive Secretary that a planned special exposure was conducted and indicating the date the planned special exposure occurred and the information required by Section R313-15-1106.

R313-15-1205. Reports to Individuals of Exceeding Dose Limits.

When a licensee or registrant is required, pursuant to the provisions of Sections R313-15-1203 or R313-15-1204, to report to the Executive Secretary any exposure of an identified occupationally exposed individual, or an identified member of the public, to sources of radiation, the licensee or registrant shall also provide a copy of the report submitted to the Executive Secretary to the individual. This report shall be transmitted at a time no later than the transmittal to the Executive Secretary.

R313-15-1207. Notifications and Reports to Individuals.

(1) Requirements for notification and reports to individuals of exposure to radiation or radioactive material are specified in Rule R313-18.

(2) When a licensee or registrant is required pursuant to Section R313-15-1203 to report to the Executive Secretary any exposure of an individual to radiation or radioactive material, the licensee or registrant shall also notify the individual. Such notice shall be transmitted at a time not later than the transmittal to the Executive Secretary, and shall comply with the provisions of Rule R313-18.

R313-15-1208. Reports of Leaking or Contaminated Sealed Sources.

If the test for leakage or contamination required pursuant to

Section R313-15-1401 indicates a sealed source is leaking or contaminated, a report of the test shall be filed within five days with the Executive Secretary describing the equipment involved, the test results and the corrective action taken.

R313-15-1301. Vacating Premises.

Each specific licensee or registrant shall, no less than 30 days before vacating or relinquishing possession or control of premises which may have been contaminated with radioactive material as a result of his activities, notify the Executive Secretary in writing of intent to vacate. When deemed necessary by the Executive Secretary, the licensee shall decontaminate the premises in such a manner that the annual total effective dose equivalent to any individual after the site is released for unrestricted use should not exceed 0.1 mSv (0.01 rem) above background and that the annual total effective dose equivalent from any specific environmental source during decommissioning activities should not exceed 0.1 mSv (0.01 rem) above background.

R313-15-1401. Testing for Leakage or Contamination of Sealed Sources.

(1) The licensee or registrant in possession of any sealed source shall assure that:

(a) Each sealed source, except as specified in Subsection R313-15-1401(2), is tested for leakage or contamination and the test results are received before the sealed source is put into use unless the licensee or registrant has a certificate from the transferor indicating that the sealed source was tested within six months before transfer to the licensee or registrant.

(b) Each sealed source that is not designed to emit alpha particles is tested for leakage or contamination at intervals not to exceed six months or at alternative intervals approved by the Executive Secretary, an Agreement State, a Licensing State, or the U.S. Nuclear Regulatory Commission.

(c) Each sealed source that is designed to emit alpha particles is tested for leakage or contamination at intervals not to exceed three months or at alternative intervals approved by the Executive Secretary, an Agreement State, a Licensing State, or the Nuclear Regulatory Commission.

(d) For each sealed source that is required to be tested for leakage or contamination, at any other time there is reason to suspect that the sealed source might have been damaged or might be leaking, the licensee or registrant shall assure that the sealed source is tested for leakage or contamination before further use.

(e) Tests for leakage for all sealed sources, except brachytherapy sources manufactured to contain radium, shall be capable of detecting the presence of 185 Bq (0.005 uCi) of radioactive material on a test sample. Test samples shall be taken from the sealed source or from the surfaces of the container in which the sealed source is stored or mounted on which one might expect contamination to accumulate. For a sealed source contained in a device, test samples are obtained when the source is in the "off" position.

(f) The test for leakage for brachytherapy sources manufactured to contain radium shall be capable of detecting an absolute leakage rate of 37 Bq (0.001 uCi) of radon-222 in a 24 hour period when the collection efficiency for radon-222 and its daughters has been determined with respect to collection method, volume and time.

(g) Tests for contamination from radium daughters shall be taken on the interior surface of brachytherapy source storage containers and shall be capable of detecting the presence of 185 Bq (0.005 uCi) of a radium daughter which has a half-life greater than four days.

(2) A licensee or registrant need not perform tests for leakage or contamination on the following sealed sources:

(a) Sealed sources containing only radioactive material with a half-life of less than 30 days;

(b) Sealed sources containing only radioactive material as a gas;

(c) Sealed sources containing 3.7 MBq (100 uCi) or less of beta or photon-emitting material or 370 kBq (ten uCi) or less of alpha-emitting material;

(d) Sealed sources containing only hydrogen-3;

(e) Seeds of iridium-192 encased in nylon ribbon; and

(f) Sealed sources, except teletherapy and brachytherapy sources, which are stored, not being used and identified as in storage. The licensee or registrant shall, however, test each such sealed source for leakage or contamination and receive the test results before any use or transfer unless it has been tested for leakage or contamination within six months before the date of use or transfer.

(3) Tests for leakage or contamination from sealed sources shall be performed by persons specifically authorized by the Executive Secretary, an Agreement State, a Licensing State, or the U.S. Nuclear Regulatory Commission to perform such services.

(4) Test results shall be kept in units of becquerel or microcurie and maintained for inspection by representatives of the Executive Secretary. Records of test results for sealed sources shall be made pursuant to Section R313-15-1104.

(5) The following shall be considered evidence that a sealed source is leaking:

(a) The presence of 185 Bq (0.005 uCi) or more of removable contamination on any test sample.

(b) Leakage of 37 Bq (0.001 uCi) of radon-222 per 24 hours for brachytherapy sources manufactured to contain radium.

(c) The presence of removable contamination resulting from the decay of 185 Bq (0.005 uCi) or more of radium.

(6) The licensee or registrant shall immediately withdraw a leaking sealed source from use and shall take action to prevent the spread of contamination. The leaking sealed source shall be repaired or disposed of in accordance with Rule R313-15.

(7) Reports of test results for leaking or contaminated sealed sources shall be made pursuant to Section R313-15-1208.

KEY: radioactive material, contamination, waste disposal, safety

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UTAH RADIATION CONTROL RULES

CHAPTER R313-17
ADMINISTRATIVE PROCEDURES

R313. Environmental Quality, Radiation.

R313-17. Administrative Procedures.

R313-17-1. Application of Rule.

This rule applies to proceedings under Title 19, Chapter 3 (Radiation Control Act).

R313-17-2. Public Notice and Public Comment Period.

(1) The Executive Secretary shall give public notice of, and an opportunity to comment on the following actions:

(a) Proposed licensing action for license categories 4a, b, c, d and 6 identified in R313-70-7 or a proposed approval or denial of a significant radioactive materials license, license amendment, or license renewal.

(b) The initial proposed registration of an ionizing radiation producing machine which operates at a kilovoltage potential (kVp) greater than 200 in an open beam configuration. R313-17-2(1)(b) does not apply to use in the healing arts.

(c) Board activities that may have significant public interest and the Board requests the Executive Secretary to take public comment on those proposed activities.

(2) Public notice shall allow at least 30 days for public comment.

(3) Public notice may describe more than one action listed in R313-17-2(1) and may combine notice of a public hearing with notice of the proposed action.

(4) Public notice shall be given by publication in a newspaper of general circulation in the area affected by the proposed action. Notice shall also be given to persons on a mailing list developed by the Executive Secretary and those who request in writing to be notified.

R313-17-3. Public Comments, Response to Comments and Requests for Public Hearings.

(1) During the public comment period provided under R313-17-2, any interested person may submit written comments on the proposed action and may request a public hearing, if no hearing has already been scheduled.

(2) A request for a public hearing shall be in writing and shall state the nature of the issues proposed to be raised in the hearing.

(3) Comments received during the public comment period and during any hearing shall be considered in making the final decision.

(4) At the time of the final decision, the Executive Secretary shall issue a response to comments, which shall include:

(a) Specific provisions, if any, that have been changed in the final action and the reasons for the change; and

(b) A brief description and response to all significant comments raised during the public comment period or during any hearing.

(5) The Executive Secretary's response to public comments shall be available to the public.

R313-17-4. Public Hearings.

(1) This section applies to hearings for public comment on proposed actions specified in R313-17-2. This section does not govern adjudicative proceedings.

(2) The Executive Secretary shall hold a public hearing whenever he finds, on the basis of requests, a significant degree of public interest in the proposed action.

(3) The Executive Secretary may also hold a public hearing at his discretion, whenever, for instance, a hearing might clarify one or more issues involved in the proposed action.

(4) The Executive Secretary shall hold a public hearing whenever he receives written notice of opposition to a proposed action and a request for a hearing within 30 days of public notice under R313-17-2.

(5)(a) Public notice of the hearing shall be given as specified in R313-17-2.

(b) The public comment period under R313-17-2 shall automatically be extended to the close of any public hearing under this section. The hearing officer may also extend the comment period by so stating at the hearing.

(c) Whenever possible the Executive Secretary shall schedule a hearing under this section at a time and location convenient to the parties involved.

(d) Any person at the hearing may submit oral or written statements and data concerning the proposed action. Reasonable limits may be set upon the time allowed for oral statements and the submission of statements in writing may be required.

(e) A tape recording or written transcript of the hearing shall be made available to the public.

R313-17-5. Administrative Procedures General Provisions.

(1) PURPOSE AND SCOPE

R313-17-5 through R313-17-13 set out procedures for conducting formal adjudicative proceedings in accordance with the Utah Administrative Procedures Act (UAPA), Section 63-46b-1 et seq. and govern:

(a) the contest of the validity of initial order or notice of violation as described in R313-17-5(2);

(b) the contest of proposed imposition of civil penalties under Section 19-3-109; and

(c) other formal adjudicative proceedings before the Radiation Control Board.

(2) INITIAL PROCEEDINGS EXEMPT FROM UAPA

Proceedings that culminate in the issuance of an initial order or a notice of violation under the Utah Radiation Control Act are not governed by UAPA as specified in Section 63-46b-1(2)(k). This includes, but is not limited to, initial proceedings regarding:

(a) approval, amendment, denial, termination, transfer, revocation, or renewal of licenses;

(b) requests for variances, exemptions, and other approvals;

(c) notices of violation and orders associated with notices of violation;

(d) orders to comply and orders to cease and desist;

(e) impoundment of radioactive material;
(f) orders for decommissioning;
(g) declaratory orders; and
(h) orders for surveying, monitoring, sampling, or information;
(3) DESIGNATION OF PROCEEDINGS
(a) Contest of an initial order or notice of violation or proposed imposition of civil penalties shall be conducted as a formal proceeding.
(b) The Board in accordance with Section 63-46b-4(3) may convert proceedings which are designated to be formal to informal, and proceedings which are designated as informal to formal if conversion is in the public interest and rights of all parties are not unfairly prejudiced.
(c) Unless otherwise stated in R313, informal adjudicative proceedings shall be conducted in accordance with Section 63-46b-5.
(4) APPEARANCES AND REPRESENTATION
(a) An individual who is a participant to a proceeding, or an officer designated by a partnership, corporation, association, or governmental entity which is a participant to a proceeding, may represent his, her, or its interest in the proceeding.
(b) Any participant may be represented by legal counsel.
(5) COMPUTATION OF TIME
Time shall be computed as provided in Rule 6(a) of the Utah Rules of Civil Procedure except that no additional time shall be allowed for service by mail.

R313-17-6. Commencing a Formal Adjudicative Proceeding.
(1) Except as otherwise permitted by emergency orders as described in Section 63-46b-20, all adjudicative proceedings shall be commenced by either:
(a) a Notice of Agency Action in accordance with Section 63-46b-3, if proceedings are commenced by the Board; or
(b) a Request for Agency Action in accordance with R313-17-6(2), if proceedings are commenced by a person other than the Board.
(2)(a) The validity of initial orders, notices of violation and proposed imposition of civil penalties, as described in R313-17-5(1) and (2), may be contested by filing a written Request for Agency Action with the Board and submitted to:
Executive Secretary, Utah Radiation Control Board
Division of Radiation Control
168 North 1950 West
PO Box 144850
Salt Lake City, Utah 84114-4850.
(b) Any such request is governed by and shall comply with the requirements of Section 63-46b-3(3) and shall be received for filing within 30 days of the issuance of the Executive Secretary's order or notice of violation.
(c)(i) All initial orders or notices of violation are effective upon issuance and shall become final if not contested within 30 days after the date issued.
(ii) Issuance of such orders or notices of violation means

the time a signed order is mailed by certified mail to the recipient's most current address or hand delivered to the recipient.

(iii) If delivery by certified mail is refused, the issued order or notice shall be sent by regular first class mail.

(d) Failure to timely contest an initial order or notice of violation waives any right of administrative contest, reconsideration, review or judicial appeal.

(3) RESPONSE TO REQUEST FOR AGENCY ACTION

In accordance with Section 63-46b-3(3)(d) and (e), notice of the time and place for a hearing shall be provided in the response to a request for agency action, or shall be provided promptly after the hearing is scheduled.

(4) PRE-HEARING RECORD

The Executive Secretary shall compile an administrative record prior to a scheduled hearing and give any party the opportunity to supplement the record. The pre-hearing record shall also consist of pleadings or other documents filed prior to the hearing.

R313-17-7. Parties and Intervention.

(1) DETERMINATION OF A PARTY.

The following persons are Parties to a formal proceeding governed by these rules:

(a) The person to whom an initial order or notice of violation is directed, such as a person who submitted a license application that was approved or disapproved by order of the Executive Secretary;

(b) The Executive Secretary of the Radiation Control Board; and

(c) All persons whose legal rights or interests are substantially affected by the proceeding, who have standing to participate in the proceeding, and to whom the Board has granted intervention under R313-17-7(2).

(2) INTERVENTION

A petition for intervention may be filed by a petitioner to commence an adjudicative proceeding in accordance with R313-17-6(2) or to intervene after a notice of agency action or request for agency action has been filed. A petitioner for intervention shall meet the following requirements:

(a)(i) The request for agency action is timely filed in accordance with R313-17-6(2); or

(ii) The Petition to Intervene in a proceeding commenced by a party other than the Petitioner for Intervention is filed with the Board, with a copy to all parties, within 20 days from the date of the Notice of Agency Action or Request for Agency Action.

(b) The Petition to Intervene:

(i) Identifies the proceedings in which intervention is sought;

(ii) Contains a statement of facts demonstrating that the petitioner's legal rights or interests are substantially affected by the formal adjudicative proceeding and the petitioner qualifies as an Intervenor under Section 63-46b-9; and

(iii) Includes a statement of relief sought from the Board,

including the basis thereof.

(c) Unless modified by the Presiding Officer, any party may respond to a Petition for Intervention during the period allowed for responsive pleadings under Section 63-46b-6. The Chair of the Radiation Control Board may act as Presiding Officer for purposes of this paragraph.

(d) Intervention may only be granted by order of the Board to a petitioner who meets the requirements of R313-17-7(2)(a) and (b).

(3) DESIGNATION OF PARTIES

Unless otherwise designed by the Hearing Officer:

(a) The person filing a Request for Agency Action shall be the Petitioner and the Executive Secretary shall be the Respondent.

(b) In a proceeding requested by a Petitioner for Intervention, the person granted Intervenor status shall be the Petitioner. The Executive Secretary and the person to whom the challenged order or notice is directed shall be the Respondents.

(4) AMICUS CURIAE (Friend of the Court)

Persons may be permitted by the Presiding Officer(s) to enter an appearance as Amicus Curiae (Friend of the Court), subject to conditions established by the Presiding Officer(s).

R313-17-8. Conduct of Proceedings.

(1) ROLE OF BOARD

(a) The Board is the "agency head" as that term is used in Section 63-46b. The Board is also the "presiding officer," as that term is used in Section 63-46b, except:

(i) The Chair of the Board shall be considered the Presiding Officer to the extent that these rules allow; and

(ii) The Board may by order appoint one or more Presiding Officers to preside over all or a portion of the proceedings.

(b) The Chair of the Board may delegate his or her authority as specified in this Rule to another Board member.

(2) APPOINTED PRESIDING OFFICERS

Unless otherwise explicitly provided in an order of appointment, any appointment of a Presiding Officer shall be for the purpose of conducting all aspects of an adjudicative proceeding, except grant of intervention, stays of orders and issuance of the final order. As used in these rules, the term Presiding Officer shall mean Presiding Officers if more than one Presiding Officer is appointed by the Board.

(3) PRE-HEARING CONFERENCES

The Presiding Officer may direct the Parties to appear at a specified time and place for pre-hearing conferences for the purposes of clarifying the issues, simplifying the evidence, facilitating discovery, expediting proceedings, or encouraging settlement.

(4) BRIEFS

(a) Unless otherwise directed by the Presiding Officer, parties to the proceeding may submit a pre-hearing brief at least five business days before the hearing. Post-hearing briefs will be allowed only as authorized by the Presiding Officer.

(b) Response briefs may not be filed unless permitted by the Presiding Officer.

(5) SCHEDULES

(a) The Presiding Officer shall establish schedules for discovery and other pre-hearing proceedings, for the hearing, and for any post-hearing proceedings.

(b) The parties are encouraged to prepare a joint proposed schedule. If the parties cannot agree on a joint proposed schedule, the Presiding Officer may consider proposals by any party.

(6) EXTENSIONS OF TIME

Except as otherwise provided by statute, the Presiding Officer may approve extensions of time limits established by this rule, and may extend time limits adopted in schedules established under R313-17-8(5). The Presiding Officer may also postpone hearings. The Chair of the Board may act as Presiding Officer for purposes of this paragraph.

(7) MOTIONS

All motions shall be filed a minimum of 12 days before a scheduled hearing, unless otherwise directed by the Presiding Officer. A memorandum in opposition to a motion may be filed within ten days of the filing of the motion, or at least one day before any scheduled hearing, whichever is earlier. Memoranda in support of or in opposition to motions may not exceed 15 pages unless otherwise provided by the Presiding Officer.

(8) FILING AND COPIES OF SUBMISSIONS

The original of any motion, brief, petition for intervention, or other submission shall be filed with the Executive Secretary. In addition, the submitter shall provide a copy to each Presiding Officer and to all parties or their counsel of record.

R313-17-9. Hearings.

(1) CONDUCT OF HEARING

The Presiding Officer shall govern the conduct of a hearing, and may establish reasonable limits on the length of witness testimony, cross-examination, oral arguments or opening and closing statements.

(2) ORDER OF PRESENTATION

Unless otherwise directed by the Presiding Officer, the Executive Secretary shall present its case first, followed by the Petitioner and any other party, then the Executive Secretary, and other parties if appropriate, shall have the opportunity for rebuttal.

R313-17-10. Orders.

(1) PROPOSED ORDERS BY PARTIES

Unless otherwise directed by the Presiding Officer, each party may provide proposed orders for the Presiding Officer within ten days of the conclusion of the hearing.

(2) DRAFT ORDERS OF APPOINTED PRESIDING OFFICERS

(a) The appointed Officer presiding over the adjudicative proceeding shall prepare a recommended order, provide a copy of the order to the Board and mail a copy of the order to all parties or their counsel of record.

(b) The Board shall review the recommended order and hearing

record.

(c) The Board may give each party the opportunity to make a presentation to the Board specific to the recommended order.

(d) After deliberation, the Board shall determine whether to accept, reject or modify the recommended order. The Board may remand part or all of the matter to the Presiding Officer for further proceedings.

(e) The Board may modify this procedure with notice to all parties.

(3) FINAL ORDERS

The Board shall issue a final order which shall include the information required by Sections 63-46b-10 or 63-46b-5(1)(i).

R313-17-11. Stays of Orders.

(1) STAY OF ORDERS PENDING ADMINISTRATIVE ADJUDICATION

(a) A party seeking a stay of a challenged order during an adjudicative proceeding shall file a motion with the Board. If granted, a stay would suspend the challenged Order for the period as directed by the Board.

(b) The Board may order a stay of the Order that is the subject of the formal adjudicative proceeding if the party seeking the Stay demonstrates the following:

(i) The party seeking the Stay will suffer irreparable harm unless the stay issues;

(ii) The threatened injury to the party seeking the Stay outweighs whatever damage the proposed stay is likely to cause the party restrained or enjoined;

(iii) The Stay, if issued, would not be adverse to the public interest; and

(iv) There is substantial likelihood that the party seeking the Stay will prevail on the merits of the underlying claim, or the case presents serious issues on the merits which should be the subject of further adjudication.

(2) STAY OF THE ORDER PENDING JUDICIAL REVIEW

(a) A party seeking a stay of the Board's final order during judicial review shall file a motion with the Board.

(b) The Board as Presiding Officer may grant a stay of its order during the pendency of judicial review if the standards of R317-17-11(1)(b) are met.

R313-17-12. Reconsideration.

No agency review under Section 63-46b-12 is available. A party may request reconsideration of an order of the Presiding Officer as provided in Section 63-46b-13.

R313-17-13. Disqualification of Presiding Officer(s).

(1) DISQUALIFICATION OF PRESIDING OFFICER

(a) A member of the Board or other Presiding Officer shall disqualify himself or herself from performing the functions of the Presiding Officer regarding any matter in which he or she, or his or her spouse, or a person within the third degree of relationship to either of them, or the spouse of such person:

(i) Is a party to the proceeding, or an officer, director, or

trustee of a party;

(ii) Has acted as an attorney in the proceeding or served as an attorney for, or otherwise represented a party concerning the matter in controversy;

(iii) Knows that he or she has an financial interest, either individually or as a fiduciary, in the subject matter in controversy or in a party to the proceeding;

(iv) Knows that he or she has any other interest that could be substantially affected by the outcome of the proceeding; or

(v) Is likely to be a material witness in the proceeding.

(b) A member of the Board or other Presiding Officer is also subject to disqualification under principles of due process and administrative law.

(2) MOTIONS FOR DISQUALIFICATION

A motion for disqualification shall be made first to the Presiding Officer. If the Presiding Officer is appointed, any determination of the Presiding Officer upon a motion for disqualification may be appealed to the Board.

R313-17-14. Other Forms of Address.

Nothing in these rules shall prevent any person from requesting an opportunity to address the Board as a member of the public, rather than as a party. An opportunity to address the Board shall be granted at the discretion of the Board. However, addressing the Board in this manner does not constitute a request for agency action under R313-17-6.

R313-17-15. Requests for Records.

Requests for records under the Utah Government Record Access and Management Act, Title 63, Chapter 2, Utah Code Ann., are not governed by R313. See R305-1.

KEY: administrative procedures, public comment, public hearings, orders

January 10, 1997 **19-3-103.5**

Notice of Continuation July 23, 2001 **19-3-104**

UTAH RADIATION CONTROL RULES

CHAPTER R313-18
NOTICES, INSTRUCTIONS AND REPORTS TO WORKERS BY LICENSEES OR REGISTRANTS -- INSPECTIONS

R313. Environmental Quality, Radiation Control.

R313-18. Notices, Instructions and Reports to Workers by Licensees or Registrants--Inspections.

R313-18-1. Purpose and Authority.

(1) The purpose of this rule is to establish requirements for notices, instructions and reports by licensees or registrants to individuals engaged in work under a license or registration and options available to such individuals in connection with inspections of licensees or registrants.

(2) The rules set forth herein are adopted pursuant to the provisions of Sections 19-3-104(3) and 19-3-104(6).

R313-18-2. General.

The rules of R313-18 shall apply to all persons who receive, possess, use, own or transfer a source of radiation licensed by or registered with the Department pursuant to the rules in R313-16, R313-19 or R313-22.

R313-18-11. Posting of Notices to Workers.

(1) Licensees or registrants shall post current copies of the following documents:

(a) the rules in R313-15 and R313-18;

(b) the license, certificate of registration, conditions or documents incorporated into the license by reference and amendments thereto;

(c) the operating procedures applicable to work under the license or registration; and

(d) a notice of violation involving radiological working conditions, proposed imposition of civil penalty, order issued pursuant to R313-14, or any response from the licensee or registrant.

(2) If posting of a document specified in R313-18-11(1)(a), (b), or (c) is not practicable, the licensee or registrant may post a notice which describes the document and states where it may be examined.

(3) DRC-04 "Notice to Employees," shall be posted by licensees or registrants wherever individuals work in or frequent a portion of a restricted area.

(4) Documents from the Executive Secretary which are posted pursuant to R313-18-11(1)(d) shall be posted within five working days after receipt of the documents from the Executive Secretary; the licensee's or registrant's response, if there is one, shall be posted for a minimum of five working days after dispatch from the licensee or registrant. The documents shall remain posted for a minimum of five working days or until action correcting the violation has been competed, whichever is later.

(5) Documents, notices or forms posted pursuant to R313-18-11 shall appear in a sufficient number of places to permit individuals engaged in work under the license or registration to observe them on the way to or from any particular work location to which the document applies, shall be conspicuous, and shall be replaced if defaced or altered.

R313-18-12. Instructions to Workers.

(1) All individuals who in the course of employment are likely to receive in a year an occupational dose in excess of 1.0 mSv (100 mrem):

(a) shall be kept informed of the storage, transfer, or use of sources of radiation in the licensee's or registrant's workplace;

(b) shall be instructed in the health protection considerations associated with exposure to radiation or radioactive material to the individual and potential offspring, in precautions or procedures to minimize exposure, and in the purposes and functions of protective devices employed;

(c) shall be instructed in, and instructed to observe, to the extent within the worker's control, the applicable provisions of these rules and licenses for the protection of personnel from exposure to radiation or radioactive material;

(d) shall be instructed as to their responsibility to report promptly to the licensee or registrant a condition which may constitute, lead to, or cause a violation of the Act, these rules, or a condition of the licensee's license or unnecessary exposure to radiation or radioactive material;

(e) shall be instructed in the appropriate response to warnings made in the event of an unusual occurrence or malfunction that may involve exposure to radiation or radioactive material; and

(f) shall be advised as to the radiation exposure reports which workers shall be furnished pursuant to R313-18-13.

(2) In determining those individuals subject to the requirements of R313-18-12(1), licensees must take into consideration assigned activities during normal and abnormal situations involving exposure to radiation or radioactive material which can reasonably be expected to occur during the life of a licensed facility. The extent of these instructions shall be commensurate with potential radiological health protection considerations for the workplace.

R313-18-13. Notifications and Reports to Individuals.

(1) Radiation exposure data for an individual and the results of measurements, analyses, and calculations of radioactive material deposited or retained in the body of an individual shall be reported to the individual as specified in R313-18-13. The information reported shall include data and results obtained pursuant to these rules, orders, or license conditions, as shown in records maintained by the licensee or registrant pursuant to R313-15-1107. Notifications and reports shall:

(a) be in writing;

(b) include appropriate identifying data such as the name of the licensee or registrant, the name of the individual, and the individual's identification number, preferably social security number;

(c) include the individual's exposure information; and

(d) contain the following statement:

"This report is furnished to you under the provisions of the Utah Administrative Code Section R313-18-13. You should preserve

this report for further reference."

(2) Licensees or registrants shall furnish to each worker annually a written report of the worker's dose as shown in records maintained by the licensee or registrant pursuant to R313-15-1107.

(3) Licensees or registrants shall furnish a written report of the worker's exposure to sources of radiation at the request of a worker formerly engaged in activities controlled by the licensee or registrant. The report shall include the dose record for each year the worker was required to be monitored pursuant to R313-15-502. The report shall be furnished within 30 days from the date of the request, or within 30 days after the dose of the individual has been determined by the licensee or registrant, whichever is later. The report shall cover the period of time that the worker's activities involved exposure to sources of radiation and shall include the dates and locations of work under the license or registration in which the worker participated during this period.

(4) When a licensee or registrant is required pursuant to R313-15-1202, R313-15-1203, or R313-15-1204 to report to the Executive Secretary an exposure of an individual to sources of radiation, the licensee or the registrant shall also provide the individual a written report on the exposure data included therein. Reports shall be transmitted at a time not later than the transmittal to the Executive Secretary.

(5) At the request of a worker who is terminating employment with the licensee or registrant in work involving exposure to radiation or radioactive material, during the current year, the licensee or registrant shall provide at termination to the worker, or to the worker's designee, a written report regarding the radiation dose received by that worker from operations of the licensee or registrant during the current year or fraction thereof. If the most recent individual monitoring results are not available at that time, a written estimate of the dose shall be provided together with a clear indication that this is an estimate.

R313-18-14. Presence of Representatives of Licensees or Registrants and Workers During Inspection.

(1) Licensees or registrants shall afford representatives of the Board or the Executive Secretary, at reasonable times, the opportunity to inspect materials, machines, activities, facilities, premises, and records pursuant to these rules.

(2) During an inspection, representatives of the Board or the Executive Secretary may consult privately with workers as specified in R313-18-15. The licensee or registrant may accompany representatives during other phases of an inspection.

(3) If, at the time of inspection, an individual has been authorized by the workers to represent them during Department inspections, the licensee or registrant shall notify the representatives of the Board or the Executive Secretary of the authorization and shall give the workers' representative an opportunity to accompany the representatives during the inspection of physical working conditions.

(4) The workers' representative shall be routinely engaged in work under control of the licensee or registrant and shall have

received instructions as specified in R313-18-12.

(5) Different representatives of licensees or registrants and workers may accompany the representatives of the Board or the Executive Secretary during different phases of an inspection if there is no resulting interference with the conduct of the inspection. However, only one workers' representative at a time may accompany the representatives of the Board or the Executive Secretary.

(6) With the approval of the licensee or registrant and the workers' representative, an individual who is not routinely engaged in work under control of the licensee or registrant, for example, a consultant to the licensee or registrant or to the workers' representative, shall be afforded the opportunity to accompany representatives of the Board or the Executive Secretary during the inspection of physical working conditions.

(7) Notwithstanding the other provisions of R313-18-14, representatives of the Board or the Executive Secretary are authorized to refuse to permit accompaniment by an individual who deliberately interferes with a fair and orderly inspection. With regard to areas containing information classified by an Agency of the U.S. Government in the interest of national security, an individual who accompanies an inspector may have access to such information only if authorized to do so. With regard to areas containing proprietary information, the workers' representative for that area shall be an individual previously authorized by the licensee or registrant to enter that area.

R313-18-15. Consultation with Workers During Inspections.

(1) Representatives of the Board or the Executive Secretary may consult privately with workers concerning matters of occupational radiation protection and other matters related to applicable provisions of these rules and licenses to the extent the representatives deem necessary for the conduct of an effective and thorough inspection.

(2) During the course of an inspection, workers may bring privately to the attention of the representatives of the Board or the Executive Secretary, either orally or in writing, a past or present condition which the worker has reason to believe may have contributed to or caused a violation of the Act, these rules, or license condition, or an unnecessary exposure of an individual to sources of radiation under the licensee's or registrant's control. A notice in writing shall comply with the requirements of R313-18-16(1).

(3) The provisions of R313-18-15(2) shall not be interpreted as authorization to disregard instructions pursuant to R313-18-12.

R313-18-16. Request by Workers for Inspections.

(1) A worker or representative of workers believing that a violation of the Act, these rules, or license conditions exists or has occurred in work under a license or registration with regard to radiological working conditions in which the worker is engaged, may request an inspection by giving notice of the alleged violation to the Executive Secretary. The notice shall be in writing, shall set

forth the specific grounds for the notice, and shall be signed by the worker or representative of the workers. A copy shall be provided to the licensee or registrant by representatives of the Board or the Executive Secretary no later than at the time of inspection except that, upon the request of the worker giving the notice, his name and the name of individuals referred to therein shall not appear in a copy or on a record published, released, or made available by the Department except for good cause shown.

(2) If, upon receipt of the notice, representatives of the Board or the Executive Secretary, determine that the complaint meets the requirements set forth in R313-18-16(1), and that there are reasonable grounds to believe that the alleged violation exists or has occurred, an inspection shall be made as soon as practicable to determine if the alleged violation exists or has occurred. Inspections pursuant to R313-18-16 need not be limited to matters referred to in the complaint.

(3) A licensee, registrant or contractor or subcontractor of a licensee or registrant shall not discharge or discriminate against a worker because that worker has filed a complaint or instituted or caused to be instituted a proceeding under these rules or has testified or is about to testify in a proceeding or because of the exercise by the worker on behalf of the worker or others of an option afforded by R313-18.

R313-18-17. Inspections Not Warranted -- Informal Review.

(1)(a) If the representatives of the Board or the Executive Secretary determine, with respect to a complaint under Section R313-18-16, that an inspection is not warranted because there are no reasonable grounds to believe that a violation exists or has occurred, the Executive Secretary shall notify the complainant in writing of that determination. The complainant may obtain review of the determination by submitting a written statement of position with the Executive Secretary. The Executive Secretary will provide the licensee or registrant with a copy of the statement by certified mail, excluding, at the request of the complainant, the name of the complainant. The licensee or registrant may submit an opposing written statement of position with the Executive Secretary. The Executive Secretary will provide the complainant with a copy of the statement by certified mail.

(b) Upon the request of the complainant, the Board may hold an informal conference in which the complainant and the licensee or registrant may orally present their views. An informal conference may also be held at the request of the licensee or registrant, but disclosure of the identity of the complainant will be made only following receipt of written authorization from the complainant. After considering written and oral views presented, the Board shall affirm, modify, or reverse the determination of the representatives of the Board or the Executive Secretary and furnish the complainant and the licensee or registrant a written notification of the decision and the reason therefor.

(2) If the Executive Secretary determines that an inspection is not warranted because the requirements of R313-18-16(1) have not been met, the complainant shall be notified in writing of the

determination. The determination shall be without prejudice to the filing of a new complaint meeting the requirements of R313-18-16(1).

KEY: radioactive material, inspection, radiation safety, licensing
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UTAH RADIATION CONTROL RULES

CHAPTER R313-19
REQUIREMENTS OF GENERAL APPLICABILITY TO LICENSING OF RADIOACTIVE MATERIAL

R313. Environmental Quality, Radiation Control.

R313-19. Requirements of General Applicability to Licensing of Radioactive Material.

R313-19-1. Purpose and Authority.

(1) The purpose of this rule is to prescribe requirements governing the licensing of radioactive material. This rule also gives notice to all persons who knowingly provide to any licensee, applicant, certificate of registration holder, contractor, or subcontractor, components, equipment, materials, or other goods or services, that relate to a licensee's, applicant's or certificate of registration holder's activities subject to these rules, that they may be individually subject to Executive Secretary enforcement action for violation of Section R313-19-5.

(2) The rules set forth herein are adopted pursuant to the provisions of Sections 19-3-104(3) and 19-3-104(6).

R313-19-2. General.

(1) A person shall not receive, possess, use, transfer, own or acquire radioactive material except as authorized in a specific or general license issued pursuant to Rules R313-21 or R313-22 or as otherwise provided in Rule R313-19.

(2) In addition to the requirements of Rules R313-19, R313-21 or R313-22, all licensees are subject to the requirements of Rules R313-12, R313-15, and R313-18. Licensees authorized to use sealed sources containing radioactive materials in panoramic irradiators with dry or wet storage of radioactive sealed sources, underwater irradiators, or irradiators with high dose rates from radioactive sealed sources are subject to the requirements of Rule R313-34, licensees engaged in industrial radiographic operations are subject to the requirements of Rule R313-36, licensees using radionuclides in the healing arts are subject to the requirements of Rule R313-32, licensees engaged in land disposal of radioactive material are subject to the requirements of Rule R313-25, and licensees engaged in wireline and subsurface tracer studies are subject to the requirements of Rule R313-38.

R313-19-5. Deliberate Misconduct.

(1) Any licensee, certificate of registration holder, applicant for a license or certificate of registration, employee of a licensee, certificate of registration holder or applicant; or any contractor, including a supplier or consultant, subcontractor, employee of a contractor or subcontractor of any licensee or certificate of registration holder or applicant for a license or certificate of registration, who knowingly provides to any licensee, applicant, certificate holder, contractor, or subcontractor, any components, equipment, materials, or other goods or services that relate to a licensee's, certificate holder's or applicant's activities in these rules, may not:

(a) Engage in deliberate misconduct that causes or would have caused, if not detected, a licensee, certificate of registration holder, or applicant to be in violation of any rule or order; or any term, condition, or limitation of any license issued by the

Executive Secretary; or

(b) Deliberately submit to the Executive Secretary, a licensee, certificate of registration holder, an applicant, or a licensee's, certificate holder's or applicant's, contractor or subcontractor, information that the person submitting the information knows to be incomplete or inaccurate in some respect material to the Executive Secretary.

(2) A person who violates Subsections R313-19-5(1)(a) or (b) may be subject to enforcement action in accordance with Rule R313-14.

(3) For the purposes of Subsection R313-19-5(1)(a), deliberate misconduct by a person means an intentional act or omission that the person knows:

(a) Would cause a licensee, certificate of registration holder or applicant to be in violation of any rule or order; or any term, condition, or limitation, of any license issued by the Executive Secretary; or

(b) Constitutes a violation of a requirement, procedure, instruction, contract, purchase order, or policy of a licensee, certificate of registration holder, applicant, contractor, or subcontractor.

R313-19-13. Exemptions.

(1) Source material.

(a) A person is exempt from Rules R313-19, R313-21, and R313-22 to the extent that the person receives, possesses, uses, owns, or transfers source material in a chemical mixture, compound, solution or alloy in which the source material is by weight less than 1/20 of one percent (0.05 percent) of the mixture, compound, solution, or alloy.

(b) A person is exempt from Rules R313-19, R313-21, and R313-22 to the extent that the person receives, possesses, uses or transfers unrefined and unprocessed ore containing source material; provided, that, except as authorized in a specific license, such person shall not refine or process the ore.

(c) A person is exempt from Rules R313-19, R313-21, and R313-22 to the extent that the person receives, possesses, uses or transfers:

(i) any quantities of thorium contained in:

(A) incandescent gas mantles,

(B) vacuum tubes,

(C) welding rods,

(D) electric lamps for illuminating purposes: provided that, each lamp does not contain more than 50 milligrams of thorium,

(E) germicidal lamps, sunlamps, and lamps for outdoor or industrial lighting provided that each lamp does not contain more than two grams of thorium,

(F) rare earth metals and compounds, mixtures, and products containing not more than 0.25 percent by weight thorium, uranium, or any combination of these, or

(G) personnel neutron dosimeters provided that each dosimeter does not contain more than 50 milligrams of thorium;

(ii) source material contained in the following products:

(A) glazed ceramic tableware, provided that the glaze contains not more than 20 percent by weight source material,

(B) piezoelectric ceramic containing not more than two percent by weight source material, or

(C) glassware containing not more than ten percent by weight source material, but not including commercially manufactured glass brick, pane glass, ceramic tile, or other glass or ceramic used in construction;

(iii) photographic film, negatives and prints containing uranium or thorium;

(iv) a finished product or part fabricated of, or containing, tungsten-thorium or magnesium-thorium alloys, provided that the thorium content of the alloy does not exceed four percent by weight and that this exemption shall not be deemed to authorize the chemical, physical, or metallurgical treatment or processing of the product or part;

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

(A) the counterweights are manufactured in accordance with a specific license issued by the U.S. Nuclear Regulatory Commission authorizing distribution by the licensee pursuant to 10 CFR Part 40,

(B) each counterweight has been impressed with the following legend clearly legible through any plating or other covering: "DEPLETED URANIUM",

(C) each counterweight is durably and legibly labeled or marked with the identification of the manufacturer and the statement: "UNAUTHORIZED ALTERATIONS PROHIBITED",

(D) The requirements specified in Subsections R313-19-13(1)(c)(v)(B) and (C) need not be met by counterweights manufactured prior to December 31, 1969, provided that such counterweights are impressed with the legend, "CAUTION - RADIOACTIVE MATERIAL - URANIUM", as previously required by the rules, and

(E) the exemption contained in Subsection R313-19-13(1)(c)(v) shall not be deemed to authorize the chemical, physical, or metallurgical treatment or processing of counterweights other than repair or restoration of any plating or other covering;

(vi) natural or depleted uranium metal used as shielding constituting part of a shipping container which is conspicuously and legibly impressed with the legend "CAUTION - RADIOACTIVE SHIELDING - URANIUM" and the uranium metal is encased in mild steel or equally fire resistant metal of minimum wall thickness of one eighth inch (3.2 mm);

(vii) thorium contained in finished optical lenses, provided that each lens does not contain more than 30 percent by weight of thorium, and that this exemption shall not be deemed to authorize either:

(A) the shaping, grinding, or polishing of a lens or manufacturing processes other than the assembly of such lens into optical systems and devices without alteration of the lens, or

(B) the receipt, possession, use, or transfer of thorium

contained in contact lenses, or in spectacles, or in eyepieces in binoculars or other optical instruments;

(viii) uranium contained in detector heads for use in fire detection units, provided that each detector head contains not more than 0.005 microcurie (185.0 Bq) of uranium; or

(ix) thorium contained in a finished aircraft engine part containing nickel-thoria alloy, provided that:

(A) the thorium is dispersed in the nickel-thoria alloy in the form of finely divided thoria (thorium dioxide), and

(B) the thorium content in the nickel-thoria alloy does not exceed four percent by weight.

(d) The exemptions in Subsection R313-19-13(1)(c) do not authorize the manufacture of any of the products described.

(2) Radioactive material other than source material.

(a) Exempt concentrations.

(i) Except as provided in Subsection R313-19-13(2)(a)(ii) a person is exempt from Rules R313-19, R313-21 and R313-22 to the extent that the person receives, possesses, uses, transfers, owns or acquires products or materials containing:

(A) radioactive material introduced in concentrations not in excess of those listed in Section R313-19-70, or

(B) natural occurring radioactive materials containing less than 15 picocuries per gram radium-226.

(ii) A person may not introduce radioactive material into a product or material knowing or having reason to believe that it will be transferred to persons exempt under Subsection R313-19-13(2)(a)(i) or equivalent regulations of a Licensing State, the U.S. Nuclear Regulatory Commission or an Agreement State, except in accordance with a specific license issued pursuant to Subsection R313-22-75(1) or the general license provided in Section R313-19-30.

(b) Exempt quantities.

(i) Except as provided in Subsections R313-19-13(2)(b)(ii) and (iii) a person is exempt from these rules to the extent that the person receives, possesses, uses, transfers, owns, or acquires radioactive material in individual quantities which do not exceed the applicable quantity set forth in Section R313-19-71.

(ii) Subsection R313-19-13(2)(b) does not authorize the production, packaging or repackaging of radioactive material for purposes of commercial distribution, or the incorporation of radioactive material into products intended for commercial distribution.

(iii) A person may not, for purposes of commercial distribution, transfer radioactive material in the individual quantities set forth in Section R313-19-71, knowing or having reason to believe that the quantities of radioactive material will be transferred to persons exempt under Subsection R313-19-13(2)(b) or equivalent regulations of a Licensing State, the U.S. Nuclear Regulatory Commission or an Agreement State, except in accordance with a specific license issued by the U.S. Nuclear Regulatory Commission, pursuant to 10 C.F.R. Part 32 or by the Executive Secretary pursuant to Subsection R313-22-75(2), which license states that the radioactive material may be transferred by the licensee to persons exempt under Subsection R313-19-13(2)(b) or the

equivalent regulations of a Licensing State, the U.S. Nuclear Regulatory Commission or an Agreement State.

(iv) A person who possesses radioactive material received or acquired prior to September 25, 1971, under the general license formerly provided in 10 C.F.R. Part 31.5 is exempt from the requirements for a license set forth in Rule R313-19 to the extent that the person possesses, uses, transfers or owns the radioactive material. This exemption does not apply for radium-226.

(c) Exempt items.

(i) Certain items containing radioactive material. Except for persons who apply radioactive material to, or persons who incorporate radioactive material into the following products, a person is exempt from these rules to the extent that person receives, possesses, uses, transfers, owns or acquires the following products:

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

(I) 25 millicuries (925.0 MBq) of tritium per timepiece;

(II) five millicuries (185.0 MBq) of tritium per hand;

(III) 15 millicuries (555.0 MBq) of tritium per dial. Bezels when used shall be considered as part of the dial;

(IV) 100 microcuries (3.7 MBq) of promethium-147 per watch or 200 microcuries (7.4 MBq) of promethium-147 per any other timepiece;

(V) 20 microcuries (0.74 MBq) of promethium-147 per watch hand or 40 microcuries (1.48 MBq) of promethium-147 per other timepiece hand;

(VI) 60 microcuries (2.22 MBq) of promethium-147 per watch dial or 120 microcuries (4.44 MBq) of promethium-147 per other timepiece dial. Bezels when used shall be considered as part of the dial;

(VII) the radiation dose rate from hands and dials containing promethium-147 will not exceed, when measured through 50 milligrams per square centimeter of absorber:

for wrist watches, 0.1 millirad (1.0 uGy) per hour at ten centimeters from any surface;

for pocket watches, 0.1 millirad (1.0 uGy) per hour at one centimeter from any surface;

for other timepieces, 0.2 millirad (2.0 uGy) per hour at ten centimeters from any surface;

(VIII) one microcurie (37.0 kBq) of radium-226 per timepiece in timepieces manufactured prior to the effective date of these rules.

(B) Lock illuminators containing not more than 15 millicuries (555.0 MBq) of tritium or not more than two millicuries (74.0 MBq) of promethium-147 installed in automobile locks. The levels of radiation from each lock illuminator containing promethium-147 will not exceed one millirad (10 uGy) per hour at one centimeter from any surface when measured through 50 milligrams per square centimeter of absorber.

(C) Precision balances containing not more than one millicurie (37.0 MBq) of tritium per balance or not more than 0.5 millicurie (18.5 MBq) of tritium per balance part.

(D) Automobile shift quadrants containing not more than 25 millicuries (925 MBq) of tritium.

(E) Marine compasses containing not more than 750 millicuries (27.8 GBq) of tritium gas and other marine navigational instruments containing not more than 250 millicuries (9.25 GBq) of tritium gas.

(F) Thermostat dials and pointers containing not more than 25 millicuries (925.0 MBq) of tritium per thermostat.

(G) Electron tubes, including spark gap tubes, power tubes, gas tubes including glow lamps, receiving tubes, microwave tubes, indicator tubes, pick-up tubes, radiation detection tubes, and other completely sealed tubes that are designed to conduct or control electrical currents; provided that each tube does not contain more than one of the following specified quantities of radioactive material:

(I) 150 millicuries (5.55 GBq) of tritium per microwave receiver protector tube or ten millicuries (370.0 MBq) of tritium per any other electron tube;

(II) one microcurie (37.0 kBq) of cobalt-60;

(III) five microcuries (185.0 kBq) of nickel-63;

(IV) 30 microcuries (1.11 MBq) of krypton-85;

(V) five microcuries (185.0 kBq) of cesium-137;

(VI) 30 microcuries (1.11 MBq) of promethium-147;

(VII) one microcurie (37.0 kBq) of radium-226;

and provided further, that the radiation dose rate from each electron tube containing radioactive material will not exceed one millirad (10.0 uGy) per hour at one centimeter from any surface when measured through seven milligrams per square centimeter of absorber.

(H) Ionizing radiation measuring instruments containing, for purposes of internal calibration or standardization, one or more sources of radioactive material, provided that:

(I) each source contains no more than one exempt quantity set forth in Section R313-19-71; and

(II) each instrument contains no more than ten exempt quantities. For purposes of this requirement, an instrument's source(s) may contain either one type or different types of radionuclides and an individual exempt quantity may be composed of fractional parts of one or more of exempt quantities in Section R313-19-71, provided that the sum of the fractions shall not exceed unity;

(III) for purposes of Subsection R313-19-13(2)(c)(i)(H), 0.05 microcurie (1.85 kBq) of americium-241 is considered an exempt quantity under Section R313-19-71.

(I) Spark gap irradiators containing not more than one microcurie (37.0 kBq) of cobalt-60 per spark gap irradiator for use in electrically ignited fuel oil burners having a firing rate of at least three gallons (11.4 liters) per hour.

(ii) Self-luminous products containing radioactive material.

(A) Tritium, krypton-85 or promethium-147. Except for persons who manufacture, process or produce self-luminous products containing tritium, krypton-85 or promethium-147, a person is exempt from these rules to the extent that the person receives, possesses, uses, transfers, owns, or acquires tritium, krypton-85 or promethium-147 in self-luminous products manufactured,

processed, produced, imported or transferred in accordance with a specific license issued by the U.S. Nuclear Regulatory Commission pursuant to 10 C.F.R. Part 32.22, which license authorizes the transfer of the product to persons who are exempt from regulatory requirements. The exemption in Subsection R313-19-13(2)(c)(ii) does not apply to tritium, krypton-85, or promethium-147 used in products for frivolous purposes or in toys or adornments.

(B) Radium-226. A person is exempt from these rules, to the extent that such person receives, possesses, uses, transfers, or owns articles containing less than 0.1 microcurie (3.7 kBq) of radium-226 which were acquired prior to the effective date of these rules.

(iii) Gas and aerosol detectors containing radioactive material.

(A) Except for persons who manufacture, process, or produce gas and aerosol detectors containing radioactive material, a person is exempt from these rules to the extent that the person receives, possesses, uses, transfers, owns, or acquires radioactive material in gas and aerosol detectors designed to protect life or property from fires and airborne hazards, provided that detectors containing radioactive material shall have been manufactured, imported, or transferred in accordance with a specific license issued by the U.S. Nuclear Regulatory Commission pursuant to 10 C.F.R. Part 32.26, or a Licensing State pursuant to Subsection R313-22-75(3) or equivalent requirements, which authorizes the transfer of the detectors to persons who are exempt from regulatory requirements.

(B) Gas and aerosol detectors previously manufactured and distributed to general licensees in accordance with a specific license issued by an Agreement State shall be considered exempt under Subsection R313-19-13(2)(c)(iii)(A), provided that the device is labeled in accordance with the specific license authorizing distribution of the general licensed device, and provided further that they meet the requirements of Subsection R313-22-75(3).

(C) Gas and aerosol detectors containing naturally occurring and accelerator-produced radioactive material (NARM) previously manufactured and distributed in accordance with a specific license issued by a Licensing State shall be considered exempt under Subsection R313-19-13(2)(c)(iii)(A), provided that the device is labeled in accordance with the specific license authorizing distribution, and provided further that they meet the requirements of Subsection R313-22-75(3).

(iv) Capsules containing carbon-14 urea for "in vivo" diagnostic use for humans.

(A) Except as provided in Subsection R313-19-13(2)(c)(iv)(B), any person is exempt from the requirements in Rules R313-19 and R313-32 provided that the person receives, possesses, uses, transfers, owns, or acquires capsules containing 37 kBq (1 uCi) carbon-14 urea (allowing for nominal variation that may occur during the manufacturing process) each, for "in vivo" diagnostic use for humans.

(B) Any person who desires to use the capsules for research involving human subjects shall apply for and receive a specific license pursuant to Rule R313-32.

(C) Nothing in Subsection R313-19-13(2)(c)(iv) relieves

persons from complying with applicable United States Food and Drug Administration, other Federal, and State requirements governing receipt, administration, and use of drugs.

(v) Resins containing scandium-46 and designed for sand consolidation in oil wells. A person is exempt from these rules to the extent that the person receives, possesses, uses, transfers, owns or acquires synthetic plastic resins containing scandium-46 which are designed for sand consolidation in oil wells. The resins shall have been manufactured or imported in accordance with a specific license issued by the U.S. Nuclear Regulatory Commission, or shall have been manufactured in accordance with the specifications contained in a specific license issued by the Executive Secretary or an Agreement State to the manufacturer of resins pursuant to licensing requirements equivalent to those in 10 C.F.R. Part 32.16 and 32.17. This exemption does not authorize the manufacture of any resins containing scandium-46.

(vi) With respect to Subsections R313-19-13(2)(b)(iii), R313-19-13(2)(c)(i), (iii) and (iv), the authority to transfer possession or control by the manufacturer, processor, or producer of equipment, devices, commodities, or other products containing byproduct material whose subsequent possession, use, transfer, and disposal by other persons is exempted from regulatory requirements may be obtained only from the U.S. Nuclear Regulatory Commission, Washington, D.C. 20555.

R313-19-20. Types of Licenses.

Licenses for radioactive materials are of two types: general and specific.

(1) General licenses provided in Rule R313-21 are effective without the filing of applications with the Executive Secretary or the issuance of licensing documents to the particular persons, although the filing of a registration certificate with the Executive Secretary may be required by the particular general license. The general licensee is subject to the other applicable portions of these rules and limitations of the general license.

(2) Specific licenses require the submission of an application to the Executive Secretary and the issuance of a licensing document by the Executive Secretary. The licensee is subject to applicable portions of these rules as well as limitations specified in the licensing document.

R313-19-25. Prelicensing Inspection.

The Executive Secretary may verify information contained in applications and secure additional information deemed necessary to make a reasonable determination as to whether to issue a license and whether special conditions should be attached thereto by visiting the facility or location where radioactive materials would be possessed or used, and by discussing details of the proposed possession or use of the radioactive materials with the applicant or representatives designated by the applicant. Such visits may be made by representatives of the Board or the Executive Secretary.

R313-19-30. Reciprocal Recognition of Licenses.

(1) Subject to these rules, a person who holds a specific license from the U.S. Nuclear Regulatory Commission, an Agreement State, or Licensing State, and issued by the agency having jurisdiction where the licensee maintains an office for directing the licensed activity and at which radiation safety records are normally maintained, is hereby granted a general license to conduct the activities authorized in the licensing document within this state, except in areas of exclusive federal jurisdiction, for a period not in excess of 180 days in a calendar year provided that:

(a) the licensing document does not limit the activity authorized by the document to specified installations or locations;

(b) the out-of-state licensee notifies the Executive Secretary in writing at least three days prior to engaging in such activity. Notifications shall indicate the location, period, and type of proposed possession and use within the state, and shall be accompanied by a copy of the pertinent licensing document. 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 Executive Secretary, obtain permission to proceed sooner. The Executive Secretary may waive the requirement for filing additional written notifications during the remainder of the calendar year following the receipt of the initial notification from a person engaging in activities under the general license provided in Subsection R313-19-30(1);

(c) the out-of-state licensee complies with all applicable rules of the Board and with the terms and conditions of the licensing document, except those terms and conditions which may be inconsistent with applicable rules of the Board;

(d) the out-of-state licensee supplies other information as the Executive Secretary may request; and

(e) the out-of-state licensee shall not transfer or dispose of radioactive material possessed or used under the general license provided in Subsection R313-19-30(1) except by transfer to a person:

(i) specifically licensed by the Executive Secretary or by the U.S. Nuclear Regulatory Commission, a Licensing State, or an Agreement State to receive the material, or

(ii) exempt from the requirements for a license for material under Subsection R313-19-13(2)(a).

(2) Notwithstanding the provisions of Subsection R313-19-30(1), a person who holds a specific license issued by the U.S. Nuclear Regulatory Commission, a Licensing State, or an Agreement State authorizing the holder to manufacture, transfer, install, or service a device described in Subsection R313-21-22(4) within the areas subject to the jurisdiction of the licensing body is hereby granted a general license to install, transfer, demonstrate, or service a device in this state provided that:

(a) the person shall file a report with the Executive Secretary within thirty days after the end of a calendar quarter in which a device is transferred to or installed in this state. Reports shall identify each general licensee to whom a device is transferred by name and address, the type of device transferred, and the quantity and type of radioactive material contained in the device;

(b) the device has been manufactured, labeled, installed, and serviced in accordance with applicable provisions of the specific license issued to the person by the Nuclear Regulatory Commission, a Licensing State, or an Agreement State;

(c) the person shall assure that any labels required to be affixed to the device under rules of the authority which licensed manufacture of the device bear a statement that "Removal of this label is prohibited"; and

(d) the holder of the specific license shall furnish to the general licensee to whom the device is transferred or on whose premises a device is installed a copy of the general license contained in Subsection R313-21-22(4) or in equivalent rules of the agency having jurisdiction over the manufacture and distribution of the device.

(3) The Executive Secretary may withdraw, limit, or qualify his acceptance of a specific license or equivalent licensing document issued by the U.S. Nuclear Regulatory Commission, a Licensing State or an Agreement State, or a product distributed pursuant to the licensing document, upon determining that the action is necessary in order to prevent undue hazard to public health and safety or the environment.

R313-19-34. Terms and Conditions of Licenses.

(1) Licenses issued pursuant to Rule R313-19 shall be subject to provisions of the Act, now or hereafter in effect, and to all rules, and orders of the Executive Secretary.

(2) Licenses issued or granted under Rules R313-21 and R313-22 and rights to possess or utilize radioactive material granted by a license issued pursuant to Rules R313-21 and R313-22 shall not be transferred, assigned, or in any manner disposed of, either voluntarily or involuntarily, directly or indirectly, through transfer of control of a license to a person unless the Executive Secretary shall, after securing full information find that the transfer is in accordance with the provisions of the Act now or hereafter in effect, and to all rules, and orders of the Executive Secretary, and shall give his consent in writing.

(3) Persons licensed by the Executive Secretary pursuant to Rules R313-21 and R313-22 shall confine use and possession of the material licensed to the locations and purposes authorized in the license.

(4) Licensees shall notify the Executive Secretary in writing and request termination of the license when the licensee decides to terminate activities involving materials authorized under the license.

(5) Licensees shall notify the Executive Secretary in writing immediately following the filing of a voluntary or involuntary petition for bankruptcy under any Chapter of Title 11, Bankruptcy, of the United States Code by or against:

(a) the licensee;

(b) an entity, as that term is defined in 11 U.S.C.101(14), controlling the licensee or listing the license or licensee as property of the estate; or

(c) an affiliate, as that term is defined in 11 U.S.C.101(2),

of the licensee.

(6) The notification specified in Subsection R313-19-34(5) shall indicate:

(a) the bankruptcy court in which the petition for bankruptcy was filed; and

(b) the date of the filing of the petition.

(7) Licensees required to submit emergency plans pursuant to Subsection R313-22-32(8) shall follow the emergency plan approved by the Executive Secretary. The licensee may change the approved plan without the Executive Secretary's approval only if the changes do not decrease the effectiveness of the plan. The licensee shall furnish the change to the Executive Secretary and to affected off-site response organizations within six months after the change is made. Proposed changes that decrease, or potentially decrease, the effectiveness of the approved emergency plan may not be implemented without prior application to and prior approval by the Executive Secretary.

R313-19-41. Transfer of Material.

(1) Licensees shall not transfer radioactive material except as authorized pursuant to Section R313-19-41.

(2) Except as otherwise provided in the license and subject to the provisions of Subsections R313-19-41(3) and (4), licensees may transfer radioactive material:

(a) to the Executive Secretary, if prior approval from the Executive Secretary has been received;

(b) to the U.S. Department of Energy;

(c) to persons exempt from the rules in Rule R313-19 to the extent permitted under the exemption;

(d) to persons authorized to receive the material under terms of a general license or its equivalent, or a specific license or equivalent licensing document, issued by the Executive Secretary, the U.S. Nuclear Regulatory Commission, an Agreement State or a Licensing State, or to a person otherwise authorized to receive the material by the federal government or an agency thereof, the Executive Secretary, an Agreement State or a Licensing State; or

(e) as otherwise authorized by the Executive Secretary in writing.

(3) Before transferring radioactive material to a specific licensee of the Executive Secretary, the U.S. Nuclear Regulatory Commission, an Agreement State or a Licensing State, or to a general licensee who is required to register with the Executive Secretary, the U.S. Nuclear Regulatory Commission, an Agreement State or a Licensing State prior to receipt of the radioactive material, the licensee transferring the material shall verify that the transferee's license authorizes the receipt of the type, form, and quantity of radioactive material to be transferred.

(4) The following methods for the verification required by Subsection R313-19-41(3) are acceptable:

(a) the transferor may possess, and read a current copy of the transferee's specific license or registration certificate;

(b) the transferor may possess a written certification by the transferee that the transferee is authorized by license or

registration certificate to receive the type, form, and quantity of radioactive material to be transferred, specifying the license or registration certificate number, issuing agency, and expiration date;

(c) for emergency shipments, the transferor may accept oral certification by the transferee that the transferee is authorized by license or registration certificate to receive the type, form, and quantity of radioactive material to be transferred, specifying the license or registration certificate number, issuing agency, and expiration date, provided that the oral certification is confirmed in writing within ten days;

(d) the transferor may obtain other information compiled by a reporting service from official records of the Executive Secretary, the U.S. Nuclear Regulatory Commission, an Agreement State, or a Licensing State regarding the identity of licensees and the scope and expiration dates of licenses and registration; or

(e) when none of the methods of verification described in Subsection R313-19-41(4) are readily available or when a transferor desires to verify that information received by one of the methods is correct or up-to-date, the transferor may obtain and record confirmation from the Executive Secretary, the U.S. Nuclear Regulatory Commission, an Agreement State, or a Licensing State that the transferee is licensed to receive the radioactive material.

(5) Shipment and transport of radioactive material shall be in accordance with the provisions of Section R313-19-100.

R313-19-50. Reporting Requirements.

(1) Licensees shall notify the Executive Secretary as soon as possible but not later than four hours after the discovery of an event that prevents immediate protective actions necessary to avoid exposures to radiation or radioactive materials that could exceed regulatory limits or releases of licensed material that could exceed regulatory limits. Events may include fires, explosions, toxic gas releases, etc.

(2) The following events involving licensed material require notification of the Executive Secretary by the licensee within 24 hours:

(a) an unplanned contamination event that:

(i) requires access to the contamination area, by workers or the public, to be restricted for more than 24 hours by imposing additional radiological controls or by prohibiting entry into the area;

(ii) involves a quantity of material greater than five times the lowest annual limit on intake specified in Appendix B of 10 CFR 20.1001 through 20.2402 (2000), which is incorporated by reference, for the material; and

(iii) has access to the area restricted for a reason other than to allow radionuclides with a half-life of less than 24 hours to decay prior to decontamination; or

(b) an event in which equipment is disabled or fails to function as designed when:

(i) the equipment is required by rule or license condition to

prevent releases exceeding regulatory limits, to prevent exposures to radiation and radioactive materials exceeding regulatory limits, or to mitigate the consequences of an accident;

(ii) the equipment is required by rule or license condition to be available and operable; and

(iii) no redundant equipment is available and operable to perform the required safety function; or

(c) an event that requires unplanned medical treatment at a medical facility of an individual with spreadable radioactive contamination on the individual's clothing or body; or

(d) an unplanned fire or explosion damaging licensed material or a device, container, or equipment containing licensed material when:

(i) the quantity of material involved is greater than five times the lowest annual limit on intake specified in Appendix B of 10 CFR 20.1001 through 20.2402 (2000), which is incorporated by reference, for the material; and

(ii) the damage affects the integrity of the licensed material or its container.

(3) Preparation and submission of reports. Reports made by licensees in response to the requirements of Section R313-19-50 must be made as follows:

(a) licensees shall make reports required by Subsections R313-19-50(1) and (2) by telephone to the Executive Secretary. To the extent that the information is available at the time of notification, the information provided in these reports must include:

(i) the caller's name and call back telephone number;

(ii) a description of the event, including date and time;

(iii) the exact location of the event;

(iv) the radionuclides, quantities, and chemical and physical form of the licensed material involved; and

(v) available personnel radiation exposure data.

(b) Written report. A licensee who makes a report required by Subsections R313-19-50(1) or (2) shall submit a written follow-up report within 30 days of the initial report. Written reports prepared pursuant to other rules may be submitted to fulfill this requirement if the reports contain all of the necessary information and the appropriate distribution is made. These written reports shall be sent to the Executive Secretary. The report shall include the following:

(i) A description of the event, including the probable cause and the manufacturer and model number, if applicable, of equipment that failed or malfunctioned;

(ii) the exact location of the event;

(iii) the radionuclides, quantities, and chemical and physical form of the licensed material involved;

(iv) date and time of the event;

(v) corrective actions taken or planned and results of evaluations or assessments; and

(vi) the extent of exposure of individuals to radiation or radioactive materials without identification of individuals by name.

R313-19-61. Modification, Revocation, and Termination of Licenses.

(1) The terms and conditions of all licenses shall be subject to amendment, revision, or modification or the license may be suspended or revoked by reason of amendments to the Act, or by reason of rules, and orders issued by the Executive Secretary.

(2) Licenses may be revoked, suspended, or modified, in whole or in part, for any material false statement in the application or any statement of fact required under provisions of the Act, or because of conditions revealed by the application or statement of fact or any report, record, or inspection or other means which would warrant the Executive Secretary to refuse to grant a license on an original application, or for violation of, or failure to observe any of the terms and conditions of the Act, or of the license, or of any rule, or order of the Executive Secretary.

(3) Administrative reviews, modifications, revocations or terminations of licenses will be in accordance with Title 19, Chapter 3.

(4) The Executive Secretary may terminate a specific license upon written request submitted by the licensee to the Executive Secretary.

R313-19-70. Exempt Concentrations of Radioactive Materials.

Refer to Subsection R313-19-13(2)(a)

TABLE

Element (Atomic Number)	Radionuclide	Column I Concentration Material Normally Used As Gas (uCi/ml)	Column II Concentration Liquid (uCi/ml) Solid (uCi/g)
Antimony (51)	Sb-122		3 E-4
	Sb-124		2 E-4
	Sb-125		1 E-3
Argon (18)	Ar-37	1 E-3	
	Ar-41	4 E-7	
Arsenic (33)	As-73		5 E-3
	As-74		5 E-4
	As-76		2 E-4
	As-77		8 E-4
Barium (56)	Ba-131		2 E-3
	Ba-140		3 E-4
Beryllium (4)	Be-7		2 E-2
Bismuth (83)	Bi-206		4 E-4
Bromine (35)	Br-82	4 E-7	3 E-3
Cadmium (48)	Cd-109		2 E-3
	Cd-115m		3 E-4
	Cd-115		3 E-4
Calcium (20)	Ca-45		9 E-5
	Ca-47		5 E-4
Carbon (6)	C-14	1 E-6	8 E-3
Cerium (58)	Ce-141		9 E-4
	Ce-143		4 E-4

	Ce-144		1 E-4
Cesium (55)	Cs-131		2 E-2
	Cs-134m		6 E-2
	Cs-134		9 E-5
Chlorine (17)	Cl-38	9 E-7	4 E-3
Chromium (24)	Cr-51		2 E-2
Cobalt (27)	Co-57		5 E-3
	Co-58		1 E-3
	Co-60		5 E-4
Copper (29)	Cu-64		3 E-3
Dysprosium (66)	Dy-165		4 E-3
	Dy-166		4 E-4
Erbium (68)	Er-169		9 E-4
	Er-171		1 E-3
Europium (63)	Eu-152 (T = 9.2 h)		6 E-4
	Eu-155		2 E-3
Fluorine (9)	F-18	2 E-6	8 E-3
Gadolinium (64)	Gd-153		2 E-3
	Gd-159		8 E-4
Gallium (31)	Ga-72		4 E-4
Germanium (32)	Ge-71		2 E-2
Gold (79)	Au-196		2 E-3
	Au-198		5 E-4
	Au-199		2 E-3
Hafnium (72)	Hf-181		7 E-4
Hydrogen (1)	H-3	5 E-6	3 E-2
Indium (49)	In-113m		1 E-2
	In-114m		2 E-4
Iodine (53)	I-126	3 E-9	2 E-5
	I-131	3 E-9	2 E-5
	I-132	8 E-8	6 E-4
	I-133	1 E-8	7 E-5
	I-134	2 E-7	1 E-3
Iridium (77)	Ir-190		2 E-3
	Ir-192		4 E-4
	Ir-194		3 E-4
Iron (26)	Fe-55		8 E-3
	Fe-59		6 E-4
Krypton (36)	Kr-85m	1 E-6	
	Kr-85	3 E-6	
Lanthanum (57)	La-140		2 E-4
Lead (82)	Pb-203		4 E-3
Lutetium (71)	Lu-177		1 E-3
Manganese (25)	Mn-52		3 E-4
	Mn-54		1 E-3
	Mn-56		1 E-3
Mercury (80)	Hg-197m		2 E-3
	Hg-197		3 E-3
	Hg-203		2 E-4
Molybdenum (42)	Mo-99		2 E-3
Neodymium (60)	Nd-147		6 E-4
	Nd-149		3 E-3
Nickel (28)	Ni-65		1 E-3

Niobium (Columbium) (41)	Nb-95		1 E-3
	Nb-97		9 E-3
Osmium (76)	Os-185		7 E-4
	Os-191m		3 E-2
	Os-191		2 E-3
	Os-193		6 E-4
Palladium (46)	Pd-103		3 E-3
	Pd-109		9 E-4
Phosphorus (15)	P-32		2 E-4
Platinum (78)	Pt-191		1 E-3
	Pt-193m		1 E-2
	Pt-197m		1 E-2
	Pt-197		1 E-3
Potassium (19)	K-42		3 E-3
Praseodymium (59)	Pr-142		3 E-4
	Pr-143		5 E-4
Promethium (61)	Pm-147		2 E-3
	Pm-149		4 E-3
Rhenium (75)	Re-183		6 E-4
	Re-186		9 E-3
	Re-188		6 E-4
Rhodium (45)	Rh-103m		1 E-1
	Rh-105		1 E-3
Rubidium (37)	Rb-86		7 E-4
Ruthenium (44)	Ru-97		4 E-4
	Ru-103		8 E-4
	Ru-105		1 E-3
	Ru-106		1 E-4
Samarium (62)	Sm-153		8 E-4
Scandium (21)	Sc-46		4 E-4
	Sc-47		9 E-4
	Sc-48		3 E-4
Selenium (34)	Se-75		3 E-3
Silicon (14)	Si-31		9 E-3
Silver (47)	Ag-105		1 E-3
	Ag-110m		3 E-4
	Ag-111		4 E-4
Sodium (11)	Na-24		2 E-3
Strontium (38)	Sr-85		1 E-4
	Sr-89		1 E-4
	Sr-91		7 E-4
	Sr-92		7 E-4
Sulfur (16)	S-35	9 E-8	6 E-4
Tantalum (73)	Ta-182		4 E-4
Technetium (43)	Tc-96m		1 E-1
	Tc-96		1 E-3
Tellurium (52)	Te-125m		2 E-3
	Te-127m		6 E-4
	Te-127		3 E-3
	Te-129m		3 E-4
	Te-131m		6 E-4
	Te-132		3 E-4
Terbium (65)	Tb-160		4 E-4
Thallium (81)	Tl-200		4 E-3

	Tl-201		3 E-3
	Tl-202		1 E-3
	Tl-204		1 E-3
Thulium (69)	Tm-170		5 E-4
	Tm-171		5 E-3
Tin (50)	Sn-113		9 E-4
	Sn-125		2 E-4
Tungsten	W-181		4 E-3
(Wolfram) (74)	W-187		7 E-4
Vanadium (23)	V-48		3 E-4
Xenon (54)	Xe-131m	4 E-6	
	Xe-133	3 E-6	
	Xe-135	1 E-6	
Ytterbium (70)	Yb-175		1 E-3
Yttrium (39)	Y-90		2 E-4
	Y-91m		3 E-2
	Y-91		3 E-4
	Y-92		6 E-4
	Y-93		3 E-4
Zinc (30)	Zn-65		1 E-3
	Zn-69m		7 E-4
	Zn-69		2 E-2
Zirconium (40)	Zr-95		6 E-4
	Zr-97		2 E-4
Beta or gamma emitting radioactive material not listed above with half-life less than 3 years		1 E-10	1 E-6

(1) In expressing the concentrations in Section R313-19-70, the activity stated is that of the parent radionuclide and takes into account the radioactive decay products, because many radionuclides disintegrate into radionuclides which are also radioactive.

(2) For purposes of Subsection R313-19-13(2)(a) 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 Section R313-19-70 for the specific radionuclide when not in combination. The sum of the ratios may not exceed one or unity.

(3) To convert microcuries (uCi) to SI units of kilobecquerels (kBq), multiply the above values by 37.

R313-19-71. Exempt Quantities of Radioactive Materials.

Refer to Subsection R313-19-13(2)(b)

TABLE

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
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
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-103m (Rh-103m)	100
Rhodium-105 (Rh-105)	100
Rubidium-81 (Rb-81)	10
Rubidium-86 (Rb-86)	10
Rubidium-87 (Rb-87)	10
Ruthenium-97 (Ru-97)	100
Ruthenium-103 (Ru-103)	10
Ruthenium-105 (Ru-105)	10
Ruthenium-106 (Ru-106)	1
Samarium-151 (Sm-151)	10
Samarium-153 (Sm-153)	100
Scandium-46 (Sc-46)	10
Scandium-47 (Sc-47)	100
Scandium-48 (Sc-48)	10
Selenium-75 (Se-75)	10
Silicon-31 (Si-31)	100
Silver-105 (Ag-105)	10
Silver-110m (Ag-110m)	1
Silver-111 (Ag-111)	100
Sodium-22 (Na-22)	10
Sodium-24 (Na-24)	10
Strontium-85 (Sr-85)	10
Strontium-89 (Sr-89)	1
Strontium-90 (Sr-90)	0.1
Strontium-91 (Sr-91)	10
Strontium-92 (Sr-92)	10
Sulfur-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
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

(1) To convert microcuries (uCi) to SI units of kilobecquerels (kBq), multiply the above values by 37.

R313-19-100. Transportation.

For purposes of Section R313-19-100, 10 CFR 71.4, 71.10, 71.12, 71.13(a) and (b) through 71.16, 71.47, 71.81, 71.85 through 71.89, 71.97 (1998), and Appendix A to part 71 are incorporated by reference with the following clarifications or exceptions:

(1) The substitution of the following:

(a) "Issued by the Executive Secretary" for reference to "issued by the Commission" in 10 CFR 71.4;

(b) "Licensee" for reference to "licensee of the Commission";

(c) "Subsection R313-19-100(3)" for reference to "10 CFR 71.5";

(d) "Subsection R313-15-906(5)" for reference to "10 CFR 20.1906(e)";

(e) "Section R313-15-502" for reference to "10 CFR 20.1502"; and

(f) "Utah" for reference to "the United States" in 10 CFR 71.10(b)(3);

(2) The exclusion of the following:

(a) "close reflection by water" and "optimum interspersed

hydrogenous moderation" in 10 CFR 71.4;

(b) "10 CFR 71.12(b)", "10 CFR 71.14(b)", and "10 CFR 71.16(b)"; and

(c) "subpart H" in 10 CFR 71.12(c)(2), 71.14(c)(2), 71.16(d)(2), and 71.81;

(3) Transportation of licensed material.

(a) Each licensee who transports licensed material outside the site of usage, as specified in the license, or where transport is on public highways, or who delivers licensed material to a carrier for transport, shall comply with the applicable requirements of the U.S. Department of Transportation (DOT) regulations in 49 CFR 170 through 189 (1998) appropriate to the mode of transport.

(i) The licensee shall particularly note DOT regulations in the following areas:

(A) Packaging--49 CFR 173.1 through 173.13, 173.21 through 173.40, and 173.401 through 173.476;

(B) Marking and labeling--49 CFR 172.300 through 172.338, 172.400 through 172.407, 172.436 through 172.440, and 172.400 through 172.450;

(C) Placarding--49 CFR 172.500 through 172.560 and Appendices B and C;

(D) Accident reporting--49 CFR 171.15 and 171.16;

(E) Shipping papers and emergency information--49 CFR 172.200 through 172.205 and 172.600 through 172.606;

(F) Hazardous material employee training--49 CFR 172.700 through 172.704; and

(G) Hazardous material shipper/carrier registration--49 CFR 107.601 through 107.620.

(ii) The licensee shall also note DOT regulations pertaining to the following modes of transportation:

(A) Rail--49 CFR 174.1 through 174.86 and 174.700 through 174.750;

(B) Air--49 CFR 175;

(C) Vessel--49 CFR 176.1 through 176.99 and 176.700 through 176.715; and

(D) Public Highway--49 CFR 177 and 390 through 397.

(b) If DOT regulations are not applicable to a shipment of licensed material, the licensee shall conform to the standards and requirements of the DOT specified in paragraph (a) of this section to the same extent as if the shipment or transportation were subject to DOT regulations. A request for modification, wavier, or exemption from those requirements, and any notification referred to in those requirements, must be filed with, or made to, the Executive Secretary.

KEY: license, reciprocity, transportation, exemptions

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