LCB File No. R185-08

PROPOSED REGULATION OF THE STATE BOARD OF HEALTH

New text
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Text for Health's reference

NARM Rule 20.1003:
Section 1 *"Accelerator-produced radioactive material" defined. "Accelerator-produced radioactive material" means any material made radioactive by a particle accelerator.*

NARM Rule 20.1003:
Sec. 2 *"Byproduct material" radioactive material defined. "Byproduct material" means—*

1.(1) Any radioactive material (except special nuclear material) yielded in, or made radioactive by, exposure to the radiation incident to the process of producing or using special nuclear material;

2.(2) The tailings or wastes produced by the extraction or concentration of uranium or thorium from ore processed primarily for its source material content, including discrete surface wastes resulting from uranium solution extraction processes. Underground ore bodies depleted by these solution extraction operations do not constitute ''byproduct material'' within this definition;

3.(a)(3)(i) Any discrete source of radium-226 that is produced, extracted, or converted after extraction, before, on, or after August 8, 2005, for use for a commercial, medical, or research activity; or

(b)(ii) Any material that—

(1)(A) Has been made radioactive by use of a particle accelerator; and

(2)(B) Is produced, extracted, or converted after extraction, before, on, or after August 8, 2005, for use for a commercial, medical, or research activity; and

4.(4) Any discrete source of naturally occurring radioactive material, other than source material, that—

(a)(i) The Commission, in consultation with the Administrator of the Environmental Protection Agency, the Secretary of Energy, the Secretary of Homeland Security, and the head of any other appropriate Federal agency, determines would pose a threat similar to the threat posed by a discrete source of radium-226 to the public health and safety or the common defense and security; and

(b)(ii) Before, on, or after August 8, 2005, is extracted or converted after extraction for use in a commercial, medical, or research activity.

NARM Rule 20.1003:
Sec. 3 "Consortium" defined. "Consortium" means an association of medical use licensees and a PET radionuclide production facility in the same geographical area that jointly own or share in the operation and maintenance cost of the PET radionuclide production facility that produces PET radionuclides for use in producing radioactive drugs within the consortium for

noncommercial distributions among its associated members for medical use. The PET radionuclide production facility within the consortium must be located at an educational institution or a medical facility.

NARM Rule 20.1003:
Sec. 4 ***"Cyclotron" defined. "Cyclotron" means a particle accelerator in which the charged particles travel in an outward spiral or circular path. A cyclotron accelerates charged particles at energies usually in excess of 10 megaelectron volts and is commonly used for production of short half-life radionuclides for medical use.***

NARM Rule 20.1003:
Sec. 5 ***"Discrete source" defined. "Discrete source" means a radionuclide that has been processed so that its concentration within a material has been purposely increased for use for commercial, medical, or research activities.***

NARM Rule 20.1003:
Sec. 6 "Particle accelerator" defined. "Particle accelerator" means any 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 1 megaelectron volt. For purposes of this definition, "accelerator" is an equivalent term.

NARM Rule
Sec. 7 ***"Waste" defined. "Waste" means those low-level radioactive wastes containing source, special nuclear, or byproduct material that are acceptable for disposal in a land disposal facility. For the purposes of this definition, low-level radioactive waste means radioactive waste not classified as highlevel radioactive waste, transuranic waste, spent nuclear fuel, or byproduct material as defined in paragraphs 2(2), 3(3), and 4(4) of the definition of Byproduct material in section 2.***

NARM Rule 20.2008
Sec. 8 ***Disposal of certain byproduct material.*** **(10 CFR 20.2006)**
(a) Licensed material as defined in paragraphs 3 (3) and 4 (4) of the definition of Byproduct material set forth in Sec. 2 may be disposed of in accordance with 10 CFR § 61, even though it is not defined as low-level radioactive waste. Therefore, any licensed byproduct material being disposed of at a facility, or transferred for ultimate disposal at a facility licensed under part 10 CFR § 61 or equivalent agreement state regulations, must meet the requirements of NAC 459.313.
(b) A licensee may dispose of byproduct material, as defined in paragraphs 3 (3) and 4 (4) of the definition of Byproduct material at a disposal facility authorized to dispose of such material in accordance with any Federal or State solid or hazardous waste law, including the Solid Waste Disposal Act, as authorized under the Energy Policy Act of 2005.

NARM Rule
Sec. 9 ***General license for certain items and self-luminous products containing radium-226.***

(a) A general license is hereby issued to any person to acquire, receive, possess, use, or transfer, in accordance with the provisions of paragraphs (b), (c), and (d) of this section, radium-226 contained in the following products manufactured prior to {date 60 days after regulation becomes effective}:

(1) Antiquities originally intended for use by the general public. For the purposes of this paragraph, antiquities mean products originally intended for use by the general public and distributed in the late 19th and early 20th centuries, such as radium emanator jars, revigators, radium water jars, radon generators, refrigerator cards, radium bath salts, and healing pads.

(2) Non-intact timepieces and timepiece hands and dials no longer installed in timepieces.

(3) Luminous items installed in air, marine, or land vehicles.

(4) All other luminous products, provided that no more than 100 items are used or stored at the same location at any one time.

(5) Small radium sources containing no more than 1 microcurie (0.037 megabecquerel) of radium-226. For the purposes of this paragraph, "small radium sources" means discrete survey instrument check sources, sources contained in radiation measuring instruments, sources used in educational demonstrations (such as cloud chambers and spinthariscopes), electron tubes, lightning rods, ionization sources, static eliminators, or as designated by the Division.

(b) Persons who acquire, receive, possess, use, or transfer byproduct material under the general license issued in paragraph (a) of this section are exempt from the provisions of NAC 459.780 to 459.794, NAC 459.320 to 459.374, 10 CFR 21, NAC 459.373 and NAC 459.124, to the extent that the receipt, possession, use, or transfer of byproduct material is within the terms of the general license; provided, however, that this exemption shall not be deemed to apply to any such person specifically licensed under this chapter.

(c) Any person who acquires, receives, possesses, uses, or transfers byproduct material in accordance with the general license in paragraph (a) of this section:

(1) Shall notify the Division should there be any indication of possible damage to the product so that it appears it could result in a loss of the radioactive material. A report containing a brief description of the event, and the remedial action taken, must be furnished to the Division within 30 days.

(2) Shall not abandon the device containing radium-226. The product, and any radioactive material from the product, may only be disposed of according to Section 8 § 20.2008 or by transfer to a person authorized by a specific license to receive the radium-226 in the product or as otherwise approved by the Division.

(3) Shall not export the device containing radium-226.

(4) Shall dispose of the product containing radium-226 by export only as provided by paragraph (c)(3) of this section, at a disposal facility authorized to dispose of radioactive material in accordance with any Federal or State solid or hazardous waste law, including the Solid Waste Disposal Act, as authorized under the Energy Policy Act of 2005, by transfer to a person authorized to receive radium-226 by a specific license issued under NAC 459.180 to NAC 459.314, or equivalent regulations of an Agreement State, or as otherwise approved by the Division.

(5) Shall respond to written requests from the Division to provide information relating to the general license within 30 calendar days of the date of the request, or other time specified

in the request. If the general licensee cannot provide the requested information within the allotted time, it shall, within that same time period, request a longer period to supply the information by providing the Division by an appropriate method listed in NAC 459.134, a written justification for the request.

(d) The general license in paragraph (a) of this section does not authorize the manufacture, assembly, disassembly, repair, or import of products containing radium-226, except that timepieces may be disassembled and repaired.

NARM Rule

Sec. 10 *Same: Leak testing of each source.*

Each person licensed under Section 11 shall perform a dry wipe test upon each source containing more than 0.1 microcurie of americium-241 or radium-226 prior to transferring the source to a general licensee under NAC 459.224_. This test shall be performed by wiping the entire radioactive surface of the source with a filter paper with the application of moderate finger pressure. The radioactivity on the paper shall be measured by using radiation detection instrumentation capable of detecting 0.005 microcurie (185 becquerels) of americium-241 or radium-226. If any such test discloses more than 0.005 microcurie (185 becquerels) of radioactive material, the source shall be deemed to be leaking or losing americium-241 or radium-226 and shall not be transferred to a general licensee under NAC 459.224, 10 CFR § 31.8 or equivalent regulations of an Agreement State.

NARM Rule

Sec. 11 *Calibration or reference sources containing americium-241: Requirements for license to manufacture or initially transfer.*

An application for a specific license to manufacture or initially transfer calibration or reference sources containing americium-241, for distribution to persons generally licensed under NAC 459.224, will be approved if:

(a) The applicant satisfies the general requirements of 459.238;

(b) The applicant submits sufficient information regarding each type of calibration or reference source pertinent to evaluation of the potential radiation exposure, including:

(1) Chemical and physical form and maximum quantity of americium 241 in the source;

(2) Details of construction and design;

(3) Details of the method of incorporation and binding of the americium-241 in the source;

(4) Procedures for and results of prototype testing of sources, which are designed to contain more than 0.005 microcurie of americium-241, to demonstrate that the americium-241 contained in each source will not be released or be removed from the source under normal conditions of use;

(5) Details of quality control procedures to be followed in manufacture of the source;

(6) Description of labeling to be affixed to the source or the storage container for the source;

(7) Any additional information, including experimental studies and tests, required by the Division to facilitate a determination of the safety of the source.

(c) Each source will contain no more than 5 microcuries of americium-241.

(d) The Division determines, with respect to any type of source containing more than 0.005 microcurie (185 becquerels) of americium-241, that:

(1) The method of incorporation and binding of the americium-241 in the source is such that the americium-241 will not be released or be removed from the source under normal conditions of use and handling of the source; and

(2) The source has been subjected to and has satisfactorily passed the prototype tests prescribed by 10 CFR § 32.102, Schedule C or equivalent agreement state regulations.

NARM Rule-32.58

Sec. 12 *Same: Labeling of devices. Each person licensed under Section 11 shall affix to each source, or storage container for the source, a label which shall contain sufficient information relative to safe use and storage of the source and shall include the information described in NAC 459.224 or a substantially similar statement*[1]

[1] *Sources licensed under § 32.57 or equivalent state regulations before January 19, 1978 may bear labels authorized by the regulations in effect on January 1, 1978.*

NARM Rule-31.12

Sec. 13 *General license for certain items and self-luminous products containing radium-226.*

1. (a) A general license is hereby issued to any person to acquire, receive, possess, use, or transfer, in accordance with the provisions of paragraphs 2 (b), 3 (c), and 4 (d) of this section, radium-226 contained in the following products manufactured prior to {the effective date of these regulations}.

(a) (1) Antiquities originally intended for use by the general public. For the purposes of this paragraph, antiquities mean products originally intended for use by the general public and distributed in the late 19th and early 20th centuries, such as radium emanator jars, revigators, radium water jars, radon generators, refrigerator cards, radium bath salts, and healing pads.

(b) (2) Intact timepieces containing greater than 1 microcurie (0.037 megabecquerel), nonintact timepieces, and timepiece hands and dials no longer installed in timepieces.

(c)(3) Luminous items installed in air, marine, or land vehicles.

(d)(4) All other luminous products, provided that no more than 100 items are used or stored at the same location at any one time.

(e) (5) Small radium sources containing no more than 1 microcurie (0.037 megabecquerel) of radium-226. For the purposes of this paragraph, "small radium sources" means discrete survey instrument check sources, sources contained in radiation measuring instruments, sources used in educational demonstrations (such as cloud chambers and spinthariscopes), electron tubes, lightning rods, ionization sources, static eliminators, or as designated by the Division.

2. (b) Persons who acquire, receive, possess, use, or transfer byproduct material under the general license issued in paragraph 1 are exempt from the provisions of NAC 459. 320 through NAC 459.374, 459.780 through 459.794 and 459.373 to the extent that the receipt, possession, use, or transfer of byproduct material is within the terms of the general license; provided, however, that this exemption shall not be deemed to apply to any such person specifically licensed.

3. (c) Any person who acquires, receives, possesses, uses, or transfers byproduct material in accordance with the general license in paragraph 1 of this section:

(a) (1) Shall notify the Division should there be any indication of possible damage to the product so that it appears it could result in a loss of the radioactive material. A report

containing a brief description of the event, and the remedial action taken, must made within 30 days.

(c) (2) Shall not abandon products containing radium-226. The product, and any radioactive material from the product, may only be disposed of according to Section 8 § 20.2008 or by transfer to a person authorized by a specific license to receive the radium-226 in the product or as otherwise approved by the NRC.

(d) (3) Shall not export products containing radium-226.

(e) (4) Shall dispose of products containing radium-226 at a disposal facility authorized to dispose of radioactive material in accordance with any Federal or State solid or hazardous waste law, including the Solid Waste Disposal Act, as authorized under the Energy Policy Act of 2005, by transfer to a person authorized to receive radium-226 by a specific license issued under part NAC 459.180 through 459.314 (Part 30), or equivalent regulations of an Agreement State, or as otherwise approved by the NRC.

(f) (5) Shall respond to written requests from the Division to provide information relating to the general license within 30 calendar days of the date of the request, or other time specified in the request. If the general licensee cannot provide the requested information within the allotted time, it shall, within that same time period, request a longer period to supply the information by providing the Division a written justification for the request.

4. (d) The general license in paragraph 1 (a) does not authorize the manufacture, assembly, disassembly, repair, or import of products containing radium-226, except that timepieces may be disassembled and repaired.

XRAY

Sec. 14 {recommend NAC 459.435} ***Definitions: Brachytherapy X-ray systems***

Electronic Brachytherapy: "Electronic Brachytherapy" means a method of radiation therapy using electrically generated X-rays to deliver a radiation dose at a distance of up to a few centimeters by intracavitary, intraluminal or interstitial application, or by applications with the source in contact with the body surface or very close to the body surface.

1. ***Electronic Brachytherapy Device: "Electronic Brachytherapy Device" means the system used to produce and deliver therapeutic radiation including the X-ray tube, the control mechanism, the cooling system, and the power source.***
2. ***Electronic Brachytherapy Source: "Electronic Brachytherapy Source" means the X-ray tube component used in an electronic brachytherapy device.***
3. ***Authorized User: "Authorized user" means a person who has met the requirements of the Training & Education section for authorized users, below.***
4. ***Authorized Medical Physicist: "Authorized medical physicist" means a person who has met the requirements the Training & Education section for medical physicists.***
5. ***Portable Shielding: Moveable shielding that can be placed in the primary or secondary beam to reduce the radiation exposure to the patient, occupational worker or a member of the public. The shielding can be easily moved to position with use of mobility devices or by hand.***
6. ***Medical Event: Is any event, except for an event that results from patient intervention, in which the administration of radiation results in:***
   (a) a dose that differs from the prescribed dose;
   (b) the total dose delivered differs from the prescribed dose by 20 percent or more;

(c) the fractionated dose delivered differs from the prescribed dose, for a single fraction, by 50 percent or more; or

(d) an administration of a dose to the wrong individual or the wrong treatment site.

(e) Mobile Electronic Brachytherapy Device: Means a device which is transported from one address to be used at another address that is not the address of record.

XRAY

Sec. 15 {recommend NAC 459.5932} ***Brachytherapy X-ray systems: Administrative Requirements; Registration and Notification; Installation, Maintenance or Repair; Facility Diagram;***

1. Registration and Notification

(a) Radiation devices while in transit or storage incident thereto are exempt from the requirements of this part.

(b) Application and Fees for Registration of Therapeutic X-Ray Devices.

(1) A separate registration is required for facilities for which one or more of the following applies:

(I) The facilities are not contiguous;

(II) The facilities are not under a single radiation safety program; or

(III) The facilities are not under the same management.

(c) Each person who acquires a X-ray device or an additional therapeutic X-ray device shall apply for registration of the X-ray device with the division within 30 days after acquisition application must include the following documents:

(I) A list and the of all authorized users, radiation therapy physicists and operators;

(II) Identification of the radiation safety officer and radiation safety committee members;

(III) A copy of the most current record of surveys, calculations and quality assurance checks on each device;

(IV) A current copy of the quality management program.

(V) A current copy of the quality assurance program and

(VI) Manufacturer's certification.

(2) No medical therapy device may be used on human beings until the facility has received a certificate of registration from the division.

2. Installation, Maintenance or Repair

(a) Only a manufacturer's representative registered as a vendor under shall install an electronic brachytherapy device that involves work on the source(s) shielding, the source(s) driving unit, or other electronic or mechanical component that could expose the source(s), reduce the shielding around the source(s), or compromise the radiation safety of the unit or the source(s).

(b) Only a manufacturer's representative registered as a vendor under or an authorized medical physicist shall adjust, repair, maintain, or service an electronic brachytherapy device in accordance with the manufacturer's guidelines.

(c) A registrant shall retain a record of the installation, maintenance, adjustment, service and repair of an electronic brachytherapy device for 5 years.

3. Facility Diagram

(a) Each therapeutic radiation device shall be provided with such primary and/or secondary barriers as are necessary to ensure compliance with NAC 459.

(b) Portable Shielding may be used to comply with NAC 459.

(c) Facility design information for all new installations of therapeutic X-ray devices or installations of therapeutic X-ray devices of higher energy into an existing room shall be submitted for division approval prior to actual installation of the therapeutic radiation device. The minimum facility design information that must be submitted is:

(1) Basic facility information including: legal name, telephone number and the name, address, telephone number, registration number (if known), and license number of the authorized medical physicist responsible for preparation of the shielding plan; name and telephone number of the facility supervisor; and the street address of the therapeutic radiation device facility. The plan should also indicate whether this is a new structure or a modification to existing structure(s).

(2) All wall, floor, and ceiling areas struck by the useful beam shall have primary protective barriers; and

(3) Secondary barriers shall be provided in all wall, floor, and ceiling areas not having primary protective barriers; and

(4) The type and thickness of the portable shielding used for compliance and a procedure demonstrating the use of the shielding prior to treatment.

4. Fees

(a) An annual fee for the registration and inspection of radiation devices shall be paid according to the following schedule:

(1) Electronic Brachytherapy Device $4,400

(b) Registration fees are due within 30 days after acquiring a radiation device.

(c) Renewal fees are due annually. The renewal fee must be received by the Division not later than the date on which the registration expires. If the fee is not received by that date, the registrant must:

(1) Stop operating the radiation machine which does not have a valid registration on or before the date the registration expires; or

(2) Submit to the Division within 5 days after the registration expires:

(I) An application for renewal of the registration;

(II) A fee in an amount that is equal to the appropriate fee set forth in subsection 1; and

(III) A fee for late payment that is equal to twice the amount of the registration fee.

XRAY

Sec. 16 *{recommend NAC 459.5933} Brachytherapy X-ray systems: Training and Education: Qualification of Authorized User; Qualification of Authorized Medical Physicist; Qualification of Operators; Qualification of Radiation Safety Officer; Recentness of Training; Manufacturers Training; Annual Training; and Training Records*

1. Qualification of Authorized User

(a) Training for Radiation Therapy Authorized Users. The registrant for any therapeutic X-ray device shall require the authorized user to be either:

(1) an authorized user of radioactive sources for brachytherapy under the registrant's radioactive material license who has completed a manufacture's device specific training as approved by the division or

(2) a physician who is licensed by the state as a medical doctor or doctor of osteopathy; and

(I) Is certified in:

(i) Radiation oncology or therapeutic radiology by the American Board of Radiology;

(ii) Radiation oncology by the American Osteopathic Board of Radiology;

(iii) Radiology, with specialization in radiotherapy, as a British "Fellow of the Faculty of Radiology" or "Fellow of the Royal College of Radiology"; or

(iv) Therapeutic radiology by the Canadian Royal College of Physicians and Surgeons; and

(II) Has completed a manufacture's device specific training as approved by the division.

(3) A physician shall not act as an authorized user for any therapeutic X-ray device until such time as said physician's training has been reviewed and approved by the division.

2. Qualification of Authorized Medical Physicist

(a) The registrant for any therapeutic X-ray machine shall require the authorized medical physicist to be a person currently licensed as a Therapeutic Radiological Physics by a professional organization or currently licensed by another state and

(b) Has completed a manufacturer's device specific training as approved by the division.

(c) A medical physicist shall not act as an authorized medical physicist for any therapeutic radiation device until such time as said physicist's training has been reviewed and approved by the division.

3. Qualification of Operators

(a) An individual, other than an authorized user, who operates a therapeutic X-ray device may only apply ionizing radiation to a human when under the direct supervision of an authorized user. The individual shall be certified as a Radiation Therapy Technologist by the American Registry of Radiological Technologist (ARRT) or certifying organization accepted by the ARRT; and

(b) Have completed a manufacturer's device specific training as approved by the division.

4. Qualification of Radiation Safety Officer

(a) The registrant shall require the radiation safety officer to be a person who has completed a manufacturer's device specific training as approved by the division and be:

(b) an authorized user or authorized medical physicist, or

(c) A person certified by:

(1) the American Board of Health Physics in Comprehensive Health Physics:

(2) the American Board of Radiology in Radiological Physics, Therapeutic Radiological Physics, or Medical Nuclear Physics;

(3) the American Board of Nuclear Medicine;

(4) the American Board of Science in Nuclear Medicine; or

(5) the American Board of Medical Physicists; or

(d) A person who has completed classroom and laboratory training consisting of the following:

(1) One hundred hours of radiation physics and instrumentation;

(2) Thirty hours of radiation protection;

(3) Twenty hours of mathematics pertaining to the use and measurement of radiation;
(4) Twenty hours of radiation biology;
(5) Thirty hours of medical therapy training; and
(6) One year of full time experience in radiation safety at a medical institution under the supervision of the individual identified as the radiation safety officer.

5. Recentness of Training
(1) The training and experience specified in above in this part must have been obtained within the 7 years preceding the date of application or the individual must have had related continuing education and experience in the same type of radiation therapy use since the required training and experience was completed.

6. Manufacturer's Training
(1) Training in device operation, safety procedures, and clinical use for the types of use approved by FDA. This training requirement may be fulfilled by satisfactory completion of a training program provided by the manufacturer or an approved institution contracted with by the manufacturer for new users and or by receiving training from an authorized user or authorized medical physicist who is authorized to use the device on a division registration

7. Annual Training
(1) The registrant shall provide radiation safety training instructions, initially and at least annually, to all personnel providing patient care and treatment planning to patients. The instructions shall include device operation, safety procedures and clinical use updates.

8. Training Records
(1) The registrant shall retain a record of individuals receiving initial manufacturers training and annual training for a period of three years.

XRAY

Sec. 17 {recommend NAC 459.5934} ***Brachytherapy X-ray systems: General Technical Requirements for Electronic (X-Ray) Brachytherapy Facilities: Protection Surveys; Dosimetry Equipment; Quality Management Program; Quality Assurance Program; Authority and Responsibilities; Operating Procedures; Possession of a Survey Instrument; Calibrations; Routine and Day-of-Use Periodic Spot Checks for Electronic (X-ray) Brachytherapy Devices and Dosimetry Equipment; Mobile Electronic (X-ray) Brachytherapy Devices; and Treatment PlanningProtection Surveys***

(a) The registrant shall ensure that radiation protection surveys of all new facilities and existing facilities not previously surveyed are performed with an operable radiation measurement survey instrument.
(b) The radiation protection survey shall be performed by, or under the direction of an Authorized Medical Physicist or Radiation Safety Officer and shall verify that, with the therapeutic X-ray device in a "BEAM ON" condition, with the largest clinically available treatment field and with a scattering phantom in the useful beam of radiation beam for secondary barriers and no phantom for primary barriers, taking into consideration portable shielding in the primary or secondary beam, does not exceed the following:
(1) Radiation levels in restricted areas are not likely to cause personnel exposures in excess of the limits specified in NAC 459 ; and

(2) Radiation levels in unrestricted areas do not exceed the limits specified in NAC 459.

(c) A radiation protection survey shall also be performed prior to any subsequent medical use and

(1) After making any change in the treatment room shielding or changes in the portable shielding;

(2) After making any change in the location of the therapeutic radiation device within the treatment room;

(3) After relocating the therapeutic radiation machine; or

(4) Before using the therapeutic radiation machine in a manner that could result in increased radiation levels in areas outside the external beam radiation therapy treatment room.

(d) The survey record shall indicate all instances where the facility, in the opinion of a radiation therapy physicist, is in violation of applicable regulations. The survey record shall also include the date of the measurements, the reason the survey is required, the manufacturer's name, model number and serial number of the therapeutic radiation machine, the instrument(s) used to measure radiation levels, a plan of the areas surrounding the treatment room that were surveyed, the measured dose rate at several points in each area expressed in microsieverts or millirems per hour, the calculated maximum level of radiation over a period of 1 week for each restricted and unrestricted area, and the signature of the individual responsible for conducting the survey;

2. Dosimetry Equipment

(a) For electronic (X-ray) brachytherapy devices, the calibration of the dosimetry system shall be for the source and energy or energies in use using an established protocol such as by the American Association of Physicist in Medicine TG 21.

(b) The registrant shall have available for use a dosimetry system for quality assurance check measurements. The quality assurance check system may be the same system used to meet the requirement for calibration.

(c) The registrant shall maintain a record of each dosimetry system calibration, intercomparison, and comparison for the duration of the registration. For each calibration, intercomparison, or comparison, the record shall include the date, the model numbers and serial numbers of the instruments that were calibrated, inter-compared. The names of the individuals who performed the calibration, intercomparison, or comparison, and evidence that the intercomparison was performed by, or under the direct supervision and in the physical presence of an authorized medical physicist of record.

(d) Reports of Electronic (X-ray) Brachytherapy Device Surveys and Measurements. The registrant for any therapeutic radiation device shall furnish a copy of the survey and calibration records to the division within 30 days following completion of the action that initiated the record requirement.

3. Quality Management Program

(a) Each registrant under this part, as applicable, shall establish and maintain a written quality management program to provide a high confidence that radiation therapy devices will be used as directed by the authorized user. The quality management program must include written policies and procedures to meet the following objectives:

(1) Except where a delay to provide a written directive as defined in NAC 459 would jeopardize the patient's health, a written directive is prepared prior to administration of a therapeutic radiation dose;

(2) An oral directive is acceptable when a delay to provide a written directive would jeopardize the patient's health because of the emergent nature of the patient's condition. The information contained in the oral directive must be documented immediately in the patient's record and a written directive prepared within 24 hours of the oral directive;

(3) An oral revision to an existing written directive is acceptable when a delay to provide a written revision to an existing written directive would jeopardize the patient's health. The oral revision must be documented immediately in the patient's record and a revised written directive must be signed by the authorized user within 48 hours of the oral revision;

(4) A written directive that changes an existing written directive can be made for any therapeutic procedure if the revision is dated and signed by an authorized user prior to the administration of the therapeutic electronic (X-ray) brachytherapy dose, or the next electronic (X-ray) brachytherapy fractional dose;

(5) The patient's identity is verified by more than one method as the individual named in the written directive prior to administration;

(6) The final plans of treatment and related calculations agree with the respective written directives;

(7) Each administration agrees with the written directive; and

(8) Any unintended deviation from the written directive is identified and evaluated and appropriate action is taken.

(b) The registrant shall develop procedures for and conduct a review of the quality management program including an evaluation of the following:

(1) A representative sample of patient administrations within the review period, as described in a procedure submitted to the Division;

(2) All recordable events as defined in NAC 459 within the review period; and

(3) All medical event within the review period to verify compliance with all aspects of the quality management program.

(c) The review of the quality management program shall be conducted at intervals not to exceed 12 months. A record of each dated review shall be maintained for inspection by the division in an auditable form for 3 years and shall include evaluations and findings of the review.

(d) The registrant shall evaluate each of these reviews to determine the effectiveness of the quality management program and make modifications to meet the objectives in NAC 459.

(e) Within 30 days of discovery of each recordable event, the registrant shall:

(1) Assemble the relevant facts including the cause;

(2) Identify any corrective action required to prevent recurrence;

(3) Retain a record in an auditable form for 3 years of the relevant facts and any corrective action taken.

(f) The registrant shall retain in an auditable form for 3 years each written directive.

(g) The registrant may make modifications to the quality management program to increase the program's efficiency if the program's effectiveness is not decreased. The registrant

is required to submit the modifications to the division within 30 days after the modifications have been made.

(h) Each applicant for a new registration shall submit to the division a quality management program as part of the application for registration and implement the program upon issuance of the registration by the division.

(i) Each registrant shall submit and maintain records and reports of medical events until the termination of the registration.

4. Quality Assurance Program

(a) Each electronic (X-ray) brachytherapy facility shall develop and administer a Quality Assurance Program in compliance with the US Food and Drug Administration approval of the medical device as a method of minimizing deviations from facility procedures and to document preventative measures taken prior to serious patient injury or therapeutic misadministration. The quality assurance program should address the following topics:

(1) Treatment planning, chart and treatment field parameters;

(2) Patient simulation, verification of catheter placement and device exchange procedures;

(3) Dose calculation and review procedures and;

(4) Review of daily treatment records.

(b) Deviations from the prescribed treatment or from the facilities quality assurance and operating procedures shall be investigated and brought to the attention of the authorized user, authorized medical physicist and radiation safety officer.

(c) The review of the quality assurance program shall include all the deviations from the prescribed treatment and shall be conducted at intervals not to exceed 3 months. A signed record of each dated review shall be maintained for inspection by the division in an audible form for 3 years and shall include evaluations and findings of the review.

5. Authority and Responsibilities

(a) Radiation Safety Officer

(1) A registrant shall appoint a radiation safety officer responsible for implementing the radiation safety program. The registrant, through the radiation safety officer, shall ensure that radiation safety activities are performed in accordance with approved procedures and regulatory requirements in the daily operation of the therapeutic X-ray machines program.

(2) The radiation safety officer shall promptly investigate and implement corrective actions as necessary regarding:

(I) Incidents as defined in NAC 459:

(II) Reportable events as defined in NAC 459; and

(III) Other deviations from approved radiation safety practice. A written report of these investigations and the corrective actions taken shall be given to management.

(3) The radiation safety officer shall implement written policies and procedures to:

(I) Use therapeutic X-ray machine(s) safely;

(II) Perform radiation surveys whenever necessary;

(III) Perform checks of survey instruments and other safety equipment;

(IV) Train personnel who work in or frequent areas where radiation is present; and

(V) Keep a copy of all records and reports required by division regulations, a copy of these regulations, and a copy of each registration correspondence to the division, and the written policies and procedures required by the regulations.

(VI) The radiation safety officer shall review at least every 3 months the occupational radiation exposure records of all personnel working with X-ray therapy devices.

(b) Authorized User

(1) Authorized users shall have the following special responsibilities:

(2) Be physically present during the initiation of all patient treatment or identify in writing an authorized medical physicist who is trained in the operation and emergency response for the device who will be physically present during the initiation of all patient treatments

(3) Review personally the patient's case to assure that the therapeutic X-ray procedure is appropriate; and

(4) Review regularly the progress of the patient receiving therapy and modify the originally prescribed dose, if needed.

(c) Authorized Medical Physicist

(1) The Authorized Medical Physicist shall be responsible for:

(2) Evaluation of the output from the electronic (X-ray) brachytherapy device;

(3) Generation of the necessary dosimetric information;

(4) Supervision and review of treatment calculations prior to initial treatment of any treatment site;

(5) Establishing the quality assurance spot checks and reviewing the data from those checks as required by the submitted procedures;

(6) Consultation with the authorized user in treatment planning, as needed; and

(7) Perform calculations/assessments regarding patient treatments that may constitute medical events.

(d) Operating Procedures

(1) The therapeutic X-ray device shall not be used for irradiation of patients unless the facility follows the US Food and Drug Administration approved criteria for human use.

(2) When not in use, the therapeutic X-ray device shall be secured from unauthorized access or use.

(3) When a patient must be held in position for radiation therapy, mechanical supporting or restraining devices shall be used;

(4) A copy of the current operating and emergency procedures shall be maintained in the therapeutic X-ray device room and visible

(5) No individual other than the patient shall be exposed during the treatment and the facility shall use portable shielding to reduce occupational dose.

(6) A registrant shall:

(I) Notify the Radiation Safety Officer, or his/her designee, and an authorized user as soon as possible if the patient or human research subject has a medical emergency or dies.

(II) Permit only individuals approved by the authorized user, Radiation Safety Officer, or authorized medical physicist to be present in the treatment room during treatment;

(III) Prevent dual operation of more than one radiation producing device in a treatment room if applicable; and

(IV) Develop, implement, and maintain written procedures for responding to an abnormal situation when the operator is unable to complete the treatment in compliance with the written directive. These procedures must include:

(i) Instructions for responding to equipment failures and the names of the individuals responsible for implementing corrective actions;

(ii) The process for restricting access to and posting of the treatment area to minimize the risk of inadvertent exposure; and

(iii) The names and telephone numbers of the authorized users, the authorized medical physicist, and the Radiation Safety Officer to be contacted if the device operates abnormally.

(e) Possession of a Survey Instrument

(1) Each facility location authorized to use a therapeutic X-ray device shall possess appropriately calibrated portable monitoring equipment. As a minimum, such equipment shall include a portable radiation measurement survey instrument or instruments capable of measuring dose rates over the range 0.1 μSv (0.01 mrem) per hour to 10 mSv (1000 mrem) per hour. The survey instrument or instruments shall be operable and calibrated annually.

(f) Calibration

(1) Validation of the electronic brachytherapy x-ray device output shall be performed by an Authorized Medical Physicist.

(2) Calibration validation measurements shall be made for each x-ray tube, or after any repair affecting the x-ray beam generation, or when indicated by the spot checks.

(3) Calibration validation must include, as applicable, determination of:

(I) The output within 2 % of the expected value, if applicable, or determination of the output if there is no expected value;

(II) Timer accuracy and linearity over the typical range of use;

(III) Proper operation of back-up exposure control devices;

(IV) Evaluation that the relative dose distribution about the source is within 5 % of that expected;

(V) X-ray tube positioning accuracy to within 1 millimeter within the applicator;

(4) The validation of the output shall use a dosimetry system as described by the facilities procedures using approved professional guidelines (AAPM recommendations) to measure the output.

(5) The registrant shall make calibration measurements required by this section in accordance with any current recommendations from a recognized, national professional association (such as the American Association of Physicists in Medicine) for electronic (X-ray) brachytherapy when available. Equivalent alternative methods are acceptable. In the absence of a protocol by a national professional association, published protocol included in the device manufacturer's operator's manual should be followed.

(g) Routine and Day-of-Use Periodic Spot checks for Electronic (X-Ray) Brachytherapy devices and dosimetry equipment

(1) A registrant authorized to use electronic (X-ray) brachytherapy devices shall have a program to perform spot checks on each unit:

(I) At the beginning of each day of use of an electronic (X-ray) brachytherapy unit;

(II) Each time the unit is moved to a new room or site;

(III) After each X-ray tube installation.

(2) The Authorized Medical Physicist shall:

(I) Establish written procedures for performing the spot checks.

(II) The Authorized Medical Physicist is responsible for general supervision of the spot checks and must review the spot checks within 2 days of completion.

(III) Notify the registrant in writing of any failures detected during the spot checks, within 24 hours of the identification of the spot check failure.

(3) The authorized user will prevent the clinical use of a malfunctioning device until the malfunction identified in the spot check has been evaluated and corrected or, if necessary, the equipment repaired.

(4) The spot checks must, at a minimum, assure proper operation of:

(I) Radiation exposure indicator lights on the electronic (X-ray) brachytherapy device and on the control console;

(II) Viewing and intercom systems in each electronic (X-ray) brachytherapy facility, if applicable;

(III) Radiation monitors, if applicable; and

(IV) The integrity of all cables, catheters or parts of the device that carry high voltages.

(5) Spot checks of dosimetry must include checks that the output of the X-ray source falls within +-3 % of expected values, which might include, as appropriate for the unit:

(I) Output as a function of time, or

(II) Output as a function of setting on a monitor chamber;

(III) Verification of the consistency of the dose distribution to within 3% of that found during calibration;

(IV) Validation of the operation of positioning methods to assure that the treatment dose exposes the intended location within 1 mm; and

(V) Inspection of all treatment components (e.g., connecting guide tubes, transfer tubes, transfer-tube-applicator interfaces, treatment spacers) on the day of use for any imperfections.

(6) Records

(I) A registrant shall retain a record of each check required for 3 years. The record shall include:

(i) The date of the check;

(ii) The manufacturer's name, model number, and serial number of the electronic brachytherapy unit

(iii) Notations indicating the operability of radiation monitors, source exposure indicator lights, viewing and intercom system, applicators, source-transfer tubes, and transfer tube-applicator interfaces, and source-positioning accuracy, as applicable ; and

(iv) The name and signature of the individual who performed the check.

(7) Mobile Electronic Therapy Devices

(I) A registrant providing mobile electronic (X-ray) brachytherapy services shall:

(i) Check all survey instruments before medical use at each address of use or on each day of use, whichever is more restrictive

(ii) Account for the X-ray tube in the device before departure from the client's address

(iii) Perform, at each location, all of the required periodic spot checks specified above to assure proper operation of the device

(8) Treatment Planning

(I) Where applicable, the Authorized Medical Physicist shall perform acceptance testing on the treatment planning system of therapy-related computer systems in accordance with published protocols accepted by nationally recognized bodies. At a minimum, the acceptance testing shall include, as applicable, verification of:

(i) The source-specific input parameters required by the dose-calculation algorithm;

(ii) The accuracy of dose, dwell-time (if applicable), and treatment-time calculations at representative points;

(iii) The accuracy of isodose plots and graphic displays;

(iv) The accuracy of the software used to determine source positions from images; and

(v) If the treatment-planning system is different from the treatment-delivery system, the accuracy of electronic transfer of the treatment-delivery parameters to the treatment-delivery unit from the treatment-planning system.

(II) The position indicators in the applicator shall be compared to the actual position of the source or planned dwell positions as appropriate at the time of commissioning.

(III) Prior to each patient treatment regimen, the parameters for the treatment shall be evaluated and approved by the Authorized User and the Authorized Medical Physicist for correctness through means independent of that used for the determination of the parameters.

NARM Rule

Sec. 18 NAC 459.076 is hereby amended to read as follows:

NAC 459.076 is hereby amended to read as follows:

NAC 459.076 "Radioactive material" defined. "Radioactive material" means any solid, liquid or gaseous material which emits radiation spontaneously***, this definition includes byproduct material.***

Appendix B update

Sec. 19 NAC 459.0192 is hereby amended to read as follows:

NAC 459.0192 "Appendix B" defined. **(**NRS 459.201**)** "Appendix B" means Appendix B to 10 C.F.R. §§ 20.1001 to 20.2402, inclusive, as those provisions existed on October 1~~3~~, ~~1999~~***2007***.

Sec. 20 NAC 459.180 is hereby amended to read as follows:

NAC 459.180 Applicable provisions. **(**NRS 459.030**,** 459.201**)**

1. The provisions of NAC 459.180 to 459.314, inclusive, provide for the licensing of radioactive materials. No person may receive, possess, use, transfer, own or acquire radioactive material except as authorized in a specific or general license issued pursuant to NAC 459.180 to 459.314, inclusive, or as otherwise provided in those sections.

2. In addition to the requirements of NAC 459.180 to 459.314, inclusive, all licensees are subject to the requirements of NAC 459.010 to 459.142, inclusive, 459.320 to 459.374, inclusive, and 459.780 to 459.794, inclusive. Licensees engaged in industrial radiography are subject to the requirements of NAC 459.737 and licensees using radioactive materials in the healing arts are subject to the requirements of ~~[NAC 459.3066]~~, 459.3801 and 459.3805.

NARM Rule

Sec. 21 NAC 459.188 is hereby amended to read as follows:

NAC 459.188 Table of exempt quantities. Exempt quantities are:

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

Radioactive material	Microcuries
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)	***100***
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

Radioactive material	Microcuries
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

Radioactive material	Microcuries
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
Sulphur 35 (S 35)	100
Tantalum 182 (Ta 182)	10
Technetium 96 (Tc 96)	10
Technetium 97m (Tc 97m)	100
Technetium 97 (Tc 97)	100
Technetium 99m (Tc 99m)	100
Technetium 99 (Tc 99)	10
Tellurium 125m (Te 125m)	10
Tellurium 127m (Te 127m)	10
Tellurium 127 (Te 127)	100

Radioactive material	Microcuries
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.	***0.01***

NARM Rule-10 CFR

Sec. 22 NAC 459.190 is hereby amended to read as follows:

NAC 459.190 Miscellaneous exemptions: Certain timepieces, lock illuminators, precision balances, automobile shift quadrants, marine navigational instruments, thermostats, electron tubes and ionizing radiation measuring instruments. (NRS 459.030**,** 459.201)

1. Except for persons who apply radioactive material to, or persons who incorporate radioactive material into, the following products, any person is exempt from NAC 459.010 to 459.950, inclusive, to the extent that he receives, possesses, uses, transfers, owns or acquires the following products:

(a) Timepieces, hands or dials containing not more than the following specified quantities of radioactive material and not exceeding the following specified levels of radiation:

(1) Twenty-five millicuries (925 megabecquerels) of tritium per timepiece.

(2) Five millicuries (185 megabecquerels) of tritium per hand.

(3) Fifteen millicuries (555 megabecquerels) of tritium per dial. If bezels are used, they are considered part of the dial.

(4) One hundred microcuries (3.7 megabecquerels) of promethium 147 per watch or 200 microcuries (7.4 megabecquerels) of promethium 147 per other timepiece.

(5) Twenty microcuries (740 kilobecquerels) of promethium 147 per watch hand or 40 microcuries (1.48 megabecquerels) of promethium 147 per other timepiece hand.

(6) Sixty microcuries (2.22 megabecquerels) of promethium 147 per watch dial or 120 microcuries (4.44 megabecquerels) of promethium 147 per other timepiece dial. If bezels are used, they are considered part of the dial.

~~[(7) Fifteen hundredths microcurie (5.55 kilobecquerels) of radium per timepiece.~~

~~(8) Three hundredths microcurie (1.11 kilobecquerels) of radium per hand.~~

~~(9) Nine hundredths microcurie (3.33 kilobecquerels) of radium per dial. If bezels are used, they are considered part of the dial.]~~

(10) Notwithstanding these quantities, the levels of radiation from hands and dials containing promethium 147 or radium 226 must not exceed, when measured through 50 milligrams per square centimeter of absorber:

(I) For wrist watches, 0.1 millirad (1 microgray) per hour at 10 centimeters from any surface;

(II) For pocket watches, 0.1 millirad (1 microgray) per hour at 1 centimeter from any surface, also radium must not be used for pocket watches; and

(III) For any other timepiece, 0.2 millirad (2 micrograys) per hour at 10 centimeters from any surface.

(11) One microcurie (37 kilobecquerels) of radium 226 per timepiece in ***intact*** timepieces acquired before February 28, 1980.

(b) Lock illuminators containing not more than 15 millicuries (555 megabecquerels) of tritium or not more than 2 millicuries (74 megabecquerels) of promethium 147 installed in automobile locks. The levels of radiation from each lock illuminator containing promethium 147 must not exceed 1 millirad (10 micrograys) per hour at 1 centimeter from any surface when measured through 50 milligrams per square centimeter of absorber.

(c) Precision balances containing no more than 1 millicurie (37 megabecquerels) of tritium per balance or 0.5 millicurie (18.5 megabecquerels) of tritium per balance part ***manufactured before {effective date of these regulations}***.

(d) Automobile shift quadrants containing not more than 25 millicuries (925 megabecquerels) of tritium.

(e) Marine compasses containing not more than 750 millicuries (27.75 gigabecquerels) of tritium gas and other marine navigational instruments containing not more than 250 millicuries (9.25 gigabecquerels) of tritium gas ***manufactured before {effective date of these regulations}***.

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

(~~[f]~~***g***) Thermostat dials and pointers containing not more than 25 millicuries (925 megabecquerels) of tritium per thermostat.

(~~[g]~~***h***) Electron tubes, if each tube does not contain more than one of the following specified quantities of radioactive material:

(1) One hundred fifty millicuries (5.55 gigabecquerels) of tritium per microwave receiver protector tube or 10 millicuries (370 megabecquerels) of tritium per any other electron tube;

(2) One microcurie (37 kilobecquerels) of cobalt 60;

(3) Five microcuries (185 kilobecquerels) of nickel 63;

(4) Thirty microcuries (1.11 megabecquerels) of krypton 85;

(5) Five microcuries (185 kilobecquerels) of cesium 137;

(6) Thirty microcuries (1.11 megabecquerels) of promethium 147; or

(7) One microcurie (37 kilobecquerels) of radium 226,

and if the levels of radiation from each electron tube containing radioactive material do not exceed 1 millirad (10 micrograys) per hour at 1 centimeter from any surface when measured through 7 milligrams per square centimeter of absorber.

(~~[h]~~***i***) Ionizing radiation measuring instruments containing, for purposes of internal calibration or standardization, a source of radioactive material***:***

(i) not exceeding the applicable quantity in NAC 459.188~~[.]~~***; and***

(ii) Each instrument contains no more than 10 exempt quantities. For purposes of this paragraph, 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 the exempt quantities in NAC 459.188, provided that the sum of such fractions shall not exceed unity.

(iii) For purposes of this paragraph, 0.05 microcurie of americium-241 is considered an exempt quantity under NAC 459.188.

2. For the purposes of NAC 459.180 to 459.314, inclusive, authority to transfer possession or control by the manufacturer, processor or producer of any equipment, device, commodity or other product containing source material or by-product material whose subsequent possession, use, transfer and disposal by all other persons are exempted from regulatory requirements may be obtained only from the Nuclear Regulatory Commission.

3. For the purposes of paragraph (g) of subsection 1, electron tubes include spark gap tubes, power tubes, gas tubes including glow lamps, receiving tubes, microwave tubes, indicator tubes, pick-up tubes, radiation detection tubes and any other completely sealed tube that is designed to conduct or control electrical currents.

NARM Rule

Sec. 23 NAC 459.1951 is hereby amended to read as follows:

NAC 459.1951 Quantities of radioisotopes. The following table sets forth quantities of radioisotopes for the purposes of subsections 1 and 2 of NAC 459.195.

Radioactive material	Release fraction	Quantity (curies)
Actinium-228	0.001	4,000
Americium-241	.001	2
Americium-242	.001	2
Americium-243	.001	2
Antimony-124	.01	4,000
Antimony-126	.01	6,000
Barium-133	.01	10,000
Barium-140	.01	30,000
Bismuth-207	.01	5,000
Bismuth-210	.01	600
Cadmium-109	.01	1,000
Cadmium-113	.01	80
Calcium-45	.01	20,000
Californium-252	.001	9(20mg)
Carbon-14	.01	50,000
	Non CO	
Cerium-141	.01	10,000
Cerium-144	.01	300
Cesium-134	.01	2,000
Cesium-137	.01	3,000
Chlorine-36	.5	100
Chromium-51	.01	300,000
Cobalt-60	.001	5,000
Copper-64	.01	200,000
Curium-242	.001	60
Curium-243	.001	3
Curium-244	.001	4
Curium-245	.001	2
Europium-152	.01	500
Europium-154	.01	400
Europium-155	.01	3,000
Germanium-68	.01	2,000
Gadolinium-153	.01	5,000
Gold-198	.01	30,000
Hafnium-172	.01	400
Hafnium-181	.01	7,000
Holmium-166m	.01	100
Hydrogen-3	.5	20,000

Radioactive material	Release fraction	Quantity (curies)
Iodine-125	.5	10
Iodine-131	.5	10
Indium-114m	.01	1,000
Iridium-192	.001	40,000
Iron-55	.01	40,000
Iron-59	.01	7,000
Krypton-85	1.0	6,000,000
Lead-210	.01	8
Manganese-56	.01	60,000
Mercury-203	.01	10,000
Molybdenum-99	.01	30,000
Neptunium-237	.001	2
Nickel-63	.01	20,000
Niobium-94	.01	300
Phosphorus-32	.5	100
Phosphorus-33	.5	1,000
Polonium-210	.01	10
Potassium-42	.01	9,000
Promethium-145	.01	4,000
Promethium-147	.01	4,000
Radium-226	***0.001***	***100***
Ruthenium-106	.01	200
Samarium-151	.01	4,000
Scandium-46	.01	3,000
Selenium-75	.01	10,000
Silver-110m	.01	1,000
Sodium-22	.01	9,000
Sodium-24	.01	10,000
Strontium-89	.01	3,000
Strontium-90	.01	90
Sulfur-35	.5	900
Technetium-99	.01	10,000
Technetium-99m	.01	400,000
Tellurium-127m	.01	5,000
Tellurium-129m	.01	5,000
Terbium-160	.01	4,000
Thulium-170	.01	4,000
Tin-113	.01	10,000
Tin-123	.01	3,000
Tin-126	.01	1,000
Titanium-44	.01	100
Vanadium-48	.01	7,000
Xenon-133	1.00	900,000

Radioactive material	Release fraction	Quantity (curies)
Yttrium-91	.01	2,000
Zinc-65	.01	5,000
Zirconium-93	.01	400
Zirconium-95	.01	5,000
Any other beta-gamma emitter	.01	10,000
Mixed fission products	.01	1,000
Mixed corrosion products	.01	10,000
Contaminated equipment beta-gamma	.001	10,000
Irradiated material, any form other than solid noncombustible	.01	1,000
Irradiated material, solid noncombustible	.001	10,000
Mixed radioactive waste, beta-gamma	.01	1,000
Packaged mixed waste, beta-gamma	.001	10,000
Any other alpha emitter	.001	2
Contaminated equipment, alpha	.0001	20
Packaged waste, alpha	.0001	20

Sec. 24 NAC 459.192 is hereby amended to read as follows:

NAC 459.192 Exempt ~~[self-luminous]~~ products containing radioactive material.

1. Except for persons who manufacture, process or produce self-luminous products containing tritium, krypton 85 or promethium 147, any person is exempt from the provisions of NAC 459.010 to 459.950, inclusive, to the extent that he 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 Nuclear Regulatory Commission pursuant to 10 C.F.R. § 32.22 which license authorizes the transfer of the product to persons who are exempt from regulatory requirements. The exemption

in this subsection for self-luminous products does not apply to tritium, krypton 85 or promethium 147 used in products for frivolous purposes or in toys or adornments.

2. Any person is exempt from the provisions of NAC 459.010 to 459.950, inclusive, to the extent that he receives, possesses, uses, transfers or owns articles containing less than 0.1 microcurie (3.7 kilobequerels) of radium 226 which were acquired before February 28, 1980.

30.20

3. Except for persons who manufacture, process, produce, ***or initially transfer for sale or distribution***, gas and aerosol detectors containing radioactive material, any person is exempt from the provisions of NAC 459.010 to 459.950, inclusive, to the extent that he 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 if the detectors containing radioactive material have been manufactured, ~~[imported or]~~ ***processed, produced or initially*** transferred in accordance with a specific license issued by the Division, the Nuclear Regulatory Commission or any other agreement state pursuant to 10 C.F.R. § 32.26 or its equivalent, which authorizes the transfer of the detectors to persons who are exempt from regulatory requirements. The following also applies to gas and aerosol detectors containing radioactive material:

(a) The provisions of subsection 2 of NAC 459.190 apply to this subsection.

(b) Any gas and aerosol detector which contains by-product material, or naturally occurring and accelerator-produced radioactive material, and which was previously manufactured and distributed to general licensees in accordance with a specific license issued by an agreement state ***under comparable provisions to 10 CFR §32.26*** is exempt under this subsection if the device is labeled in accordance with the specific license and if the device meets the requirements of NAC 459.280.

4. Any person who receives, possesses, uses, transfers, owns or acquires capsules that contain carbon 14 urea is exempt from the provisions of NAC 459.180 to 459.314, inclusive, if each capsule:

(a) Is intended solely for in vivo diagnostic use in humans and is not used for research involving human subjects; and

(b) Contains, allowing for nominal variation that may occur during the manufacturing process, not more than 1 microcurie (37 kilobequerels) of carbon 14 urea. Nothing in this subsection relieves a person from complying with any other federal, state or local requirement governing the receipt, administration or use of drugs.

5. Any person who receives, possesses, uses, transfers, owns or acquires synthetic plastic resins containing scandium 46 which are designed for sand consolidation in oil wells is exempt from the provisions of NAC 459.010 to 459.950, inclusive, if the resins have been manufactured or imported in accordance with a specific license issued by the Nuclear Regulatory Commission or have been manufactured in accordance with the specifications contained in a specific license issued by the Division or any agreement state to the manufacturer of resins pursuant to licensing requirements equivalent to those in 10 C.F.R. §§ 32.16 and 32.17 of the regulations of the Nuclear Regulatory Commission. This exemption does not authorize the manufacture of any resins containing scandium 46.

NARM Rule

Sec. 25 NAC 459.1951 is hereby amended to read as follows:

NAC 459.1951 Quantities of radioisotopes. The following table sets forth quantities of radioisotopes for the purposes of subsections 1 and 2 of NAC 459.195.

Radioactive material	Release fraction	Quantity (curies)
Actinium-228	0.001	4,000
Americium-241	.001	2
Americium-242	.001	2
Americium-243	.001	2
Antimony-124	.01	4,000
Antimony-126	.01	6,000
Barium-133	.01	10,000
Barium-140	.01	30,000
Bismuth-207	.01	5,000
Bismuth-210	.01	600
Cadmium-109	.01	1,000
Cadmium-113	.01	80
Calcium-45	.01	20,000
Californium-252	.001	9(20mg)
Carbon-14	.01	50,000
	Non CO	
Cerium-141	.01	10,000
Cerium-144	.01	300
Cesium-134	.01	2,000
Cesium-137	.01	3,000
Chlorine-36	.5	100
Chromium-51	.01	300,000
Cobalt-60	.001	5,000
Copper-64	.01	200,000
Curium-242	.001	60
Curium-243	.001	3
Curium-244	.001	4
Curium-245	.001	2
Europium-152	.01	500
Europium-154	.01	400
Europium-155	.01	3,000
Germanium-68	.01	2,000
Gadolinium-153	.01	5,000
Gold-198	.01	30,000
Hafnium-172	.01	400
Hafnium-181	.01	7,000
Holmium-166m	.01	100
Hydrogen-3	.5	20,000
Iodine-125	.5	10
Iodine-131	.5	10
Indium-114m	.01	1,000
Iridium-192	.001	40,000

Radioactive material	Release fraction	Quantity (curies)
Iron-55	.01	40,000
Iron-59	.01	7,000
Krypton-85	1.0	6,000,000
Lead-210	.01	8
Manganese-56	.01	60,000
Mercury-203	.01	10,000
Molybdenum-99	.01	30,000
Neptunium-237	.001	2
Nickel-63	.01	20,000
Niobium-94	.01	300
Phosphorus-32	.5	100
Phosphorus-33	.5	1,000
Polonium-210	.01	10
Potassium-42	.01	9,000
Promethium-145	.01	4,000
Promethium-147	.01	4,000
Radium-226	***0.001***	***100***
Ruthenium-106	.01	200
Samarium-151	.01	4,000
Scandium-46	.01	3,000
Selenium-75	.01	10,000
Silver-110m	.01	1,000
Sodium-22	.01	9,000
Sodium-24	.01	10,000
Strontium-89	.01	3,000
Strontium-90	.01	90
Sulfur-35	.5	900
Technetium-99	.01	10,000
Technetium-99m	.01	400,000
Tellurium-127m	.01	5,000
Tellurium-129m	.01	5,000
Terbium-160	.01	4,000
Thulium-170	.01	4,000
Tin-113	.01	10,000
Tin-123	.01	3,000
Tin-126	.01	1,000
Titanium-44	.01	100
Vanadium-48	.01	7,000
Xenon-133	1.00	900,000
Yttrium-91	.01	2,000
Zinc-65	.01	5,000
Zirconium-93	.01	400
Zirconium-95	.01	5,000

Radioactive material	Release fraction	Quantity (curies)
Any other beta-gamma emitter	.01	10,000
Mixed fission products	.01	1,000
Mixed corrosion products	.01	10,000
Contaminated equipment beta-gamma	.001	10,000
Irradiated material, any form other than solid noncombustible	.01	1,000
Irradiated material, solid noncombustible	.001	10,000
Mixed radioactive waste, beta-gamma	.01	1,000
Packaged mixed waste, beta-gamma	.001	10,000
Any other alpha emitter	.001	2
Contaminated equipment, alpha	.0001	20
Packaged waste, alpha	.0001	20

NARM Rule-30.34

Sec. 26 NAC 459.198 is hereby amended to read as follows:

NAC 459.198 Terms and conditions of licenses. **(**NRS 459.201**)**

1. Each license issued pursuant to NAC 459.180 to 459.950, inclusive, is subject to all the provisions of chapter 459 of NRS, now or hereafter in effect, and to all regulations and orders of the Division.

2. No license issued or granted under NAC 459.180 to 459.950, inclusive, or right to possess or utilize radioactive material granted by any license issued pursuant to those provisions, may be transferred, assigned or in any manner disposed of, either voluntarily or involuntarily, directly or indirectly, through transfer of control of any license to any person unless the Division, after securing full information finds that the transfer is in accordance with the provisions of chapter 459 of NRS and gives its consent in writing.

3. Each person licensed by the Division pursuant to NAC 459.180 to 459.950, inclusive, or each person seeking a license, shall:

(a) Confine his use and possession of the material licensed to the locations and purposes authorized in the license.

(b) Inform the Division in writing before the sale or lease of his business if the transaction involves the transfer of a source of radiation to another person.

(c) Inform the Division, in writing, immediately following the filing of a voluntary or involuntary petition for bankruptcy under Title 11 of the United States Code or the appropriate chapter of NRS by or against:

(1) The licensee;

(2) An entity, as that term is defined in 11 U.S.C. § 101(15), which controls the licensee or which lists the licensee as a property of the estate of the entity; or

(3) An affiliate, as that term is defined in 11 U.S.C. § 101(2), of the licensee.

(d) Keep records of information important to the safe and effective decommissioning of the facility where the radioactive material is located in a location identified to the Division until the license is terminated by the Division. If records of information relevant to decommissioning are kept for other purposes, references to these records and their locations may be used. Such information must include:

(1) Records of spills or other unusual occurrences involving the spread of contamination in or around the facility, the equipment of the facility or the site of the facility. These records may be limited to instances when contamination remains after any cleanup procedures or when there is a reasonable likelihood that contaminants may have spread to inaccessible areas including possible seepage into porous materials such as concrete. These records must include any information known to the licensee on the identification of nuclides, quantities, forms and concentrations involved.

(2) Any available drawings of structures and equipment of the facility, as originally built and as modified, which are located in restricted areas where radioactive material are used or stored, and of locations of inaccessible areas to which contaminants may spread such as buried pipes which may be subject to contamination. If drawings are not available, the licensee shall provide to the Division other appropriate records of information concerning these areas.

(3) Records of any performance of an estimate of the costs of decommissioning for incorporation in a plan for financing the decommissioning and any records of the method used for assuring the availability of money for the costs of decommissioning the facility.

4. Each person licensed by the Division pursuant to NAC 459.180 to 459.950, inclusive, who uses a portable gauge shall use a minimum of two independent physical controls that form tangible barriers to secure the portable gauge from unauthorized removal when the portable gauge is not under the control and constant surveillance of the licensee.

5. Each licensee preparing technetium-99m radiopharmaceuticals from molybdenum-99/technetium-99m generators or rubidium-82 from strontium-82/rubidium-82 generators shall test the generator eluates for molybdenum-99 breakthrough or strontium-82 and strontium-85 contamination, respectively, in accordance with 10 C.F.R. § 35.204. The licensee shall record the results of each test and retain each record for 3 years after the record is made.

6. (j)(1) Authorization under NAC 459.236.9 § 30.32(j) to produce Positron Emission Tomography (PET) radioactive drugs for noncommercial transfer to medical use licensees in its consortium does not relieve the licensee from complying with applicable FDA, other Federal, and State requirements governing radioactive drugs.

(2) Each licensee authorized under NAC 459.236.9 § 30.32(j) to produce PET radioactive drugs for noncommercial transfer to medical use licensees in its consortium shall:

(i) Satisfy the labeling requirements in NAC 459. 300.1(d) § 32.72(a)(4) for each PET radioactive drug transport radiation shield and each syringe, vial, or other container used to hold a PET radioactive drug intended for noncommercial distribution to members of its consortium.

(ii) Possess and use instrumentation to measure the radioactivity of the PET radioactive drugs intended for noncommercial distribution to members of its consortium and meet the procedural, radioactivity measurement, instrument test, instrument check, and instrument adjustment requirements in NAC 459.300.3 § 32.72(c).

(3) A licensee that is a pharmacy authorized under NAC 459.236.9 § 30.32(j) to produce PET radioactive drugs for noncommercial transfer to medical use licensees in its consortium shall require that any individual that prepares PET radioactive drugs shall be:

(i) an authorized nuclear pharmacist that meets the requirements in NAC 459.300.2(b) § 32.72(b)(2), or

(ii) an individual under the supervision of an authorized nuclear pharmacist as specified in § 35.27.

(4) A pharmacy, authorized under NAC 459.236.9 § 30.32(j) to produce PET radioactive drugs for noncommercial transfer to medical use licensees in its consortium that allows an individual to work as an authorized nuclear pharmacist, shall meet the requirements of NAC 459.300.2(d) § 32.72(b)(5).

NARM Rule

Sec. 27 NAC 459.218 is hereby amended to read as follows:

NAC 459.218 Duties and restrictions regarding certain detecting, measuring, gauging or controlling devices and devices for producing light or ionized atmosphere. **(**NRS 459.201**)** Any person who owns, receives, acquires, possesses, uses or transfers radioactive material in a device pursuant to the general license in subsection 1 of NAC 459.216:

1. Shall ensure that all labels affixed to the device at the time of receipt, and bearing a statement that removal of the label is prohibited, are maintained thereon and comply with all instructions and precautions provided by the labels.

2. Shall ensure that the device is tested for leakage of radioactive material and proper operation of the on-and-off mechanism and indicator, if any, and that such tests are conducted at no longer than 6-month intervals or at such other intervals as are specified in the label, except that:

(a) Devices containing only krypton need not be tested for leakage of radioactive material; and

(b) Devices containing only tritium or not more than 100 microcuries of other beta- or gamma-emitting material, or both, or 10 microcuries of alpha-emitting material and devices held in storage in the original shipping container before initial installation need not be tested for any purpose.

3. Shall ensure that the tests required by subsection 2 and other testing, installation, servicing and removal from installation, involving the radioactive materials, its shielding or containment, are performed and recorded:

(a) In accordance with the instructions provided by the labels; or

(b) By a person holding an applicable specific license from the Division, the Nuclear Regulatory Commission or an agreement state to perform such activities.

4. Shall maintain records showing compliance with the requirements of subsections 2 and 3. The records must show the results of tests. The records also must show the dates of performance of, and the names of persons performing, testing, installing, servicing and removal from installation concerning the radioactive material, its shielding or containment. Records of tests for leakage of radioactive material required by subsection 2 must be maintained until the sealed source is transferred or disposed of. Records of tests of the on-and-off mechanism and indicator required by subsection 2 must be maintained for 1 year after the next required test of the on-and-off mechanism and indicator is performed or until the sealed source is transferred or disposed of. Records which are required by subsection 3 must be maintained for a period of 2 years from the date of the recorded event or until the device is transferred or disposed of.

5. Upon the occurrence of a failure of or damage to, or any indication of a possible failure of or damage to, the shielding of the radioactive material or the on-and-off mechanism or indicator, or upon the detection of 0.005 microcurie (185 becquerel) or more of removable radioactive material:

(a) Shall immediately inform the Radiological Health Section of the Division by telephone;

(b) Shall immediately suspend operation of the device;

(c) Shall, within 30 days, furnish to the Division a report containing a brief description of the event and the remedial action taken;

(d) Shall, in a case of detection of 0.005 microcurie (185 becquerel) or more of radioactive material or failure of or damage to a source likely to result in contamination of the premises or the environs, furnish to the Division a plan for ensuring that the premises and environs are acceptable for unrestricted use; and

(e) Shall not, in a case of detection of 0.005 microcurie (185 becquerel) or more of radioactive material or failure of or damage to a source likely to result in contamination of the premises and the environs, operate the device until it has been repaired by the manufacturer or other person holding a specific license to repair the device issued pursuant to 10 C.F.R. Parts 30 and 32 or equivalent regulations of an agreement state.

6. Shall not abandon the device containing radioactive material.

7. Except as otherwise provided in subsection 8, may transfer or dispose of the device containing radioactive material only by transfer to a specific licensee of the Division, the Nuclear Regulatory Commission or an agreement state whose specific license authorizes him to receive the device or whose license authorizes waste collection. Within 30 days after transfer of a device to a specific licensee, the person shall furnish to the Division a report containing identification of the device by the manufacturer's or initial transferor's name, the model number and serial number of the device transferred, the name, address and license number of the person receiving the device and the date of the transfer. A transferor shall not transfer the device to any specific licensee not described in this subsection without first obtaining approval of the transfer from the Division.

8. May transfer the device to another general licensee only:

(a) Where the device remains in use at a particular location. In such a case the transferor shall give the transferee a copy of NAC 459.010 to 459.794, inclusive, and any safety documents identified in the label on the device and within 30 days after the transfer shall report to the Division the manufacturer's or initial transferor's name, the model number and serial number of the device transferred, the name, title, telephone number and address of the transferee, and the name and position of a person who may constitute a point of contact between the Division and

the transferee and who has knowledge of and authority to take actions to ensure compliance with the appropriate regulations and requirements; or

(b) Where the device is held in storage by an intermediate person in the original shipping container at its intended location of use before initial use by a general licensee.

9. Shall comply with the provisions of NAC 459.369 and 459.3695 for reporting radiation incidents, theft or loss of licensed material, but is exempt from the other requirements of NAC 459.320 to 459.374, inclusive, and 459.780 to 459.794, inclusive.

10. Except as otherwise provided in this subsection, shall respond to written requests from the Division to provide information relating to the general license within 30 calendar days after the date of the request or within the time specified in the request. If the general licensee cannot provide the requested information within the allotted time, the licensee shall, within the allotted time, request in writing additional time to comply with the request from the Division pursuant to the provisions of NAC 459.134.

11. Shall appoint a person responsible for having knowledge of the appropriate regulations and requirements and the authority for taking required actions to comply with those regulations and requirements. The general licensee, through the person appointed pursuant to this subsection, shall ensure daily compliance with all applicable regulations and requirements. The provisions of this subsection do not relieve the licensee of any responsibility or obligation under this chapter or chapter 459 of NRS.

12. Except for a person who holds a general license issued by the Nuclear Regulatory Commission or an agreement state and who uses a device described in paragraph (a) in areas subject to the jurisdiction of the Division for a period of less than 180 days in any calendar year, ***under the provisions of NAC 459.210,*** shall:

(a) Register any device which contains:

(1) Ten millicuries (370 megabecquerels) or more of cesium-137;

(2) One-tenth millicuries (3.7 megabecquerels) or more of strontium-90;

(3) One millicurie (37 megabecquerels) or more of cobalt-60;

(4) ***One-tenth millicuries (3.7 megabecquerels) of radium-226***;

(4~~5~~) One millicurie (37 megabecquerels) or more of americium-241; or

(5~~6~~) One millicurie (37 megabecquerels) or more of any other transuranic element, that is, an element with an atomic number greater than uranium-92,

— based on the activity indicated on the label. The general licensee shall register the device annually with the Division and shall pay the appropriate fee. In registering the device, the person shall verify, correct and, as appropriate, add to the information provided in a request from the Division for registration. The registration information must be submitted to the Division within 30 days after the date of the request for registration made by the Division, unless otherwise indicated in the request.

(b) In complying with the registration requirements of paragraph (a), in addition to any other information specifically requested by the Division, provide, without limitation, the following information:

(1) The name and mailing address of the general licensee;

(2) The name of the manufacturer or initial transferor of each device;

(3) The model number, serial number, radioisotope and activity, as indicated on the label, of each device;

(4) The name, title and telephone number of the responsible person designated as a representative of the general licensee pursuant to subsection 11;

(5) The address of the physical location at which each device is used and stored or, in the case of a portable device, the address of the primary place of storage;

(6) A certification by the responsible person designated as the representative of the general licensee pursuant to subsection 11 that the information provided in the registration has been verified through a physical inventory and check of label information; and

(7) A certification by the responsible person designated as the representative of the general licensee pursuant to subsection 11 that the responsible person is aware of the requirements of the general license.

13. Shall report to the Division any change to the mailing address for a location of use, including any change in the name of the general licensee, within 30 days after the effective date of the change. For a portable device, the general licensee is required to report only a change in the address of the primary place of storage of the portable device.

14. Shall not hold a device that is not in use for more than 2 years, except that a device that is kept in standby for future use is excluded from the 2-year time limit if the general licensee performs physical inventories of those devices held in standby on a quarterly basis. If a device with shutters is not being used, the shutters must be locked in the closed position. If a device is put back into service or is transferred to another person and was not tested during the required test interval, the device must be tested for leakage before use or transfer and the shutter must be tested before use. The Division may determine the eligibility for release for unrestricted use of such a device in accordance with the provisions of NAC 459.3178.

Sec. 28 NAC 459.224 is hereby amended to read as follows:

NAC 459.224 General licenses: Calibration and reference sources. **(**NRS 459.201**)**

1. A general license is hereby issued to those persons listed to own, receive, acquire, possess, use and transfer, in accordance with the provisions of subsections 4 and 5, americium 241 in the form of calibration or reference sources:

(a) Any person who holds a specific license issued by the Division which authorizes him to receive, possess, use and transfer radioactive material; and

(b) Any person who holds a specific license issued by the Nuclear Regulatory Commission which authorizes him to receive, possess, use and transfer special nuclear material.

2. A general license is hereby issued to own, receive, possess, use and transfer plutonium in the form of calibration or reference sources in accordance with the provisions of subsections 4 and 5 to any person who holds a specific license issued by the Division which authorizes him to receive, possess, use and transfer radioactive material.

3. A general license is hereby issued to own, receive, possess, use and transfer radium 226 in the form of calibration or reference sources in accordance with the provisions of subsections 4 and 5 to any person who holds a specific license issued by the Division which authorizes him to receive, possess, use and transfer radioactive material.

4. The general licenses in paragraphs (a), (b) and (c) of subsection 5 apply only to calibration or reference sources which have been manufactured ***or initially transferred*** in accordance with the specifications contained in a specific license issued to the manufacturer or importer of the sources by the Nuclear Regulatory Commission pursuant to 10 C.F.R. § 32.57 or 10 C.F.R. § 70.39 or which have been manufactured in accordance with specifications contained in a specific license issued to the manufacturer by the Division or any agreement state pursuant to licensing requirements equivalent to those contained in 10 C.F.R. § 32.57 or 10 C.F.R. § 70.39 of the regulations of the Nuclear Regulatory Commission.

5. The general licenses provided in subsections 1, 2 and 3 are subject to the provisions of NAC 459.124 to 459.134, inclusive, 459.198, 459.208, 459.312, 459.314, 459.320 to 459.374, inclusive, and 459.780 to 459.794, inclusive. In addition, persons who own, receive, acquire, possess, use or transfer one or more calibration or reference sources pursuant to NAC 459.180 to 459.314, inclusive:

(a) Shall not possess at any one time or at any one location of storage or use more than 5 microcuries of americium 241, 5 microcuries of plutonium and 5 microcuries of radium 226 in those sources;

(b) Shall not receive, possess, use or transfer such a source unless the source or its storage container bears a label which includes the following statement or a substantially similar statement:

(1) The receipt, possession, use and transfer of this source, Model ....., Serial No. ....., are subject to a general license and the regulations of the Nuclear Regulatory Commission or of a state with which the Commission has entered into an agreement for the exercise of regulatory authority. Do not remove this label.

> CAUTION - RADIOACTIVE MATERIAL - THIS SOURCE CONTAINS (AMERICIUM 241) (PLUTONIUM) (RADIUM 226) DO NOT TOUCH RADIOACTIVE PORTION OF THIS SOURCE.
>
> .....
> .
> Name of manufacturer or importer

(2) The label must show only the name of the appropriate material;

(c) Shall not transfer, abandon or dispose of such source except by transfer to a person authorized by a license from the Division, the Nuclear Regulatory Commission or an agreement state to receive the source;

(d) Shall store such source, except when the source is being used, in a closed container adequately designed and constructed to contain americium 241, plutonium or radium 226 which might otherwise escape during storage; and

(e) Shall not use such source for any purpose other than the calibration of radiation detectors or the standardization of other sources.

6. These general licenses do not authorize the manufacture of calibration or reference sources containing americium 241, plutonium or radium 226.

NARM Rule 30.32

Sec. 29 NAC 459.236 is hereby amended to read as follows:

NAC 459.236 Specific licenses: Application. **(**NRS 459.201**)**

1. Applications for specific licenses must be filed on a form prescribed by the Division and accompanied by the appropriate fee as prescribed in NAC 459.310.

2. The Division may at any time after the filing of the original application, and before the expiration of the license, require further statements in order to enable the Division to determine whether the application should be granted or denied or whether a license should be modified or revoked.

3. Each application must be signed by the applicant or licensee or a person duly authorized to act for and on his behalf.

4. An application for a license may include a request for a license authorizing one or more activities.

5. In his application, the applicant may incorporate by reference information contained in previous applications, statements or reports filed with the Division provided such references are clear and specific.

6. Applications and documents submitted to the Division may be made available for public inspection except that the Division may withhold any document or part thereof from public inspection if disclosure of its content is not required in the public interest and would adversely affect the interest of a person concerned.

7. An application for a specific license to use radioactive material in the form of a sealed source or in a device that contains a sealed source must:

(a) Identify the source or device by manufacturer and model number as registered with the Nuclear Regulatory Commission pursuant to the provisions of NAC 459.289 or 459.2895***, NAC 459.3075*** or 10 C.F.R. § 32.210 or registered with an agreement state pursuant to an equivalent regulation of the agreement state***, or for a source or a device containing radium-226 or accelerator-produced radioactive material under NAC 459.289 or 459.2895, NAC 459.3075 or an agreement state under provisions comparable to 10 C.F.R. § 32.210***; or

(b) Contain the information identified in NAC 459.289 or 459.2895, ***NAC 459.3075,*** 10 C.F.R. § 32.210 or an equivalent regulation of an agreement state.

(c) For sources or devices containing naturally occurring or accelerator-produced radioactive material manufactured prior to {the effective date of these regulations} that are not registered with the Nuclear Regulatory Commission under NAC 459.3075, 10 C.F.R. § 32.210 or with an Agreement State, and for which the applicant is unable to provide all categories of information specified in 10 C.F.R.§ 32.210(c), the applicant must provide:

(1) All available information identified in 10 C.F.R § 32.210(c) concerning the source, and, if applicable, the device; and

(2) Sufficient additional information to demonstrate that there is reasonable assurance that the radiation safety properties of the source or device are adequate to protect health and minimize danger to life and property. Such information must include a description of the source or device, a description of radiation safety features, the intended use and associated operating experience, and the results of a recent leak test.

8. If applicable pursuant to NAC 459.1955, an application for a specific license must contain a proposed plan for financing decommissioning or a certification of financial assurance for decommissioning.

9. An application from a medical facility, or educational institution to produce Positron Emission Tomography (PET) radioactive drugs for noncommercial transfer to licensees in its consortium authorized for medical use under part 10 CFR § 35 or equivalent Agreement State requirements shall include:

(1) A request for authorization for the production of PET radionuclides or evidence of an existing license issued under NAC 459.180 to NAC 459.314 or Agreement State requirements for a PET radionuclide production facility within its consortium from which it receives PET radionuclides.

(2) Evidence that the applicant is qualified to produce radioactive drugs for medical use by meeting one of the criteria in NAC 459.300 § 32.72(a)(2).

NRC Comment

Sec. 30 NAC 459.300 is hereby amended to read as follows:

NAC 459.300 Specific licenses: Manufacture, preparation or transfer for commercial distribution of radioactive drugs for medical use.

1. An application for a specific license to manufacture, prepare or transfer for commercial distribution radioactive drugs containing radioactive material for use by persons licensed for medical use pursuant to NAC 459.240 or 459.242, or by persons authorized under a license issued by the Nuclear Regulatory Commission or any other agreement state will be approved if:

(a) The applicant satisfies the general requirements specified in NAC 459.238;

(b) The applicant submits evidence that the applicant is:

(1) Registered or licensed as a drug manufacturer by:

(I) The United States Food and Drug Administration; or

(II) An agency of this State;

(2) Licensed as a pharmacy by the State Board of Pharmacy; or

(3) Operating as a nuclear pharmacy within a medical facility;

(c) The applicant submits information on the radionuclide, chemical and physical form, maximum activity per vial, syringe, generator or other container of the radioactive drug and shielding provided by the packaging of the radioactive material to demonstrate that it is appropriate for safe handling and storage of radioactive drugs by licensees authorized to use radioactive material for medical use; and

(d) The applicant complies with the following labeling requirements:

(1) A label must be affixed to each transport radiation shield of the radioactive drug, including, without limitation, shields made of lead, glass or plastic, to be transferred for commercial distribution. The label must set forth or contain the radiation symbol, the words "CAUTION, RADIOACTIVE MATERIAL" or "DANGER, RADIOACTIVE MATERIAL," the name of the radioactive drug, or its abbreviation, and the quantity of radioactivity at the time and date specified on the label. For radioactive drugs with a half-life of more than 100 days, the time may be omitted from the label.

(2) A label must be affixed to each syringe, vial or other container used to hold a radioactive drug to be transferred for commercial distribution. The label must set forth the radiation symbol, the words "CAUTION, RADIOACTIVE MATERIAL" or "DANGER, RADIOACTIVE MATERIAL" and an identifier that ensures that the syringe, vial or other container can be correlated with the information on the transport radiation shield label.

2. A licensee who is licensed as a pharmacy by the State Board of Pharmacy or who is operating as a nuclear pharmacy within a medical facility:

(a) May prepare a radioactive drug for medical use if the radioactive drug is prepared by an authorized nuclear pharmacist.

(b) May allow a pharmacist to work as an authorized nuclear pharmacist if the pharmacist is an authorized nuclear pharmacist ***as defined in 10 CFR 35.2, or if the individual meets the requirements specified in 10 CFR 35.55(b) and 35.59, and the licensee has received an approved license amendment identifying this individual as an authorized nuclear pharmacist***.

(c) May designate a pharmacist as an authorized nuclear pharmacist if the pharmacist is identified, as of November 13, 2006, as an authorized user on a license for a nuclear pharmacy issued by the Division, the Nuclear Regulatory Commission pursuant to 10 C.F.R. Part 32 or an agreement state.

(d) Shall provide to the Division:

(1) A copy of the certification, license or permit for each pharmacist that authorizes the pharmacist to perform any of the activities set forth in this subsection within 30 days after performing such activities; and

(2) A copy of the license or registration of the pharmacy or nuclear pharmacy within 30 days after the pharmacist performs any of the activities set forth in this subsection.

3. A licensee who prepares radioactive drugs for medical use pursuant to this section shall:

(a) Possess and use an instrument to measure the radioactivity of alpha-, beta- or photon-emitting radioactive drugs;

(b) Have procedures for the use of the instrument;

(c) Measure, by direct measurement or by a combination of measurements and calculations, the amount of radioactivity in dosages of alpha-, beta- or photon-emitting radioactive drugs before transfer for commercial distribution;

(d) Perform tests before initial use, periodically and following repair on each instrument for accuracy, linearity and geometry dependence, as appropriate for the instrument, and make adjustments to the instrument if necessary; and

(e) Check each instrument for constancy and proper operation at the beginning of each day of use.

4. No provision of this section relieves a licensee of his duty to comply with any other federal, state or local requirement governing the receipt, administration or use of drugs or radioactive drugs.

Sec. 31 NAC 459.306 is hereby amended to read as follows:

NAC 459.306 Specific licenses: Manufacture and distribution of sources and devices for medical use. An application for a specific license to manufacture and distribute sources and devices containing radioactive material to persons licensed pursuant to 10 C.F.R. Part 35 or equivalent regulations of an agreement state, for use as a calibration***, transmission,*** or reference source or for the uses listed in 10 C.F.R. ~~§§~~ 35.400, 35.500 and 35.600 or equivalent regulations of an agreement state, will be approved if:

1. The applicant satisfies the general requirements in NAC 459.238;

2. The applicant submits sufficient information regarding each type of source or device pertinent to an evaluation of its radiation safety, including:

(a) The radioactive material contained, its chemical and physical form, and amount;

(b) Details of design and construction of the source or device;

(c) Procedures for, and results of, prototype tests to demonstrate that the source or device will maintain its integrity under stresses likely to be encountered in normal use and in accidents;

(d) For devices containing radioactive material, the radiation profile of a prototype device;

(e) Details of quality control procedures to ensure that production sources and devices meet the standards of the design and prototype tests;

(f) Procedures and standards for calibrating sources and devices;

(g) Legends and methods for labeling sources and devices as to their radioactive content; and

(h) Instructions for handling and storing the source or device from the radiation safety standpoint, these instructions are to be included on a durable label attached to the source or device or attached to a permanent storage container for the source or device, provided that instructions which are too lengthy for the label may be summarized on the label and printed in detail on a brochure which is referenced on the label; and

3. The label affixed to the source, device or permanent storage container for the source or device contains information on the radionuclide, quantity, date of assay, and a statement that the source or device is approved by the Division for distribution to persons licensed to use radioactive material identified in 10 C.F.R. §§ 35.57, 35.400, 35.500 and 35.600 or to persons who hold equivalent licenses of the Nuclear Regulatory Commission or an agreement state.

Sec. 32 NAC 459.3062 is hereby amended to read as follows:

NAC 459.3062 Adoption by reference and revision of certain provisions of federal regulations regarding medical use of radioactive material. **(**NRS 459.201**)**

1. The provisions of 10 C.F.R. Part 35, as they existed on ***October 1, 2007***, are hereby adopted by reference, subject to the following:

(a) 10 C.F.R. §§ 35.8, ***35.10(a), 35.11(c)(1) and (c)(2), 35.13(a)(1), (a)(2) and (b)(5), 35.57((b)(3),*** 35.4001 and 35.4002 are not adopted by reference.

(b) Except as otherwise provided in this chapter, the implementation date described in 10 C.F.R. §§ 35.10(a) and 35.10(d) is November 13, 2006.

(c) Except as otherwise provided in this chapter, the October 24, 2002, date described in 10 C.F.R. § 35.57(a)(1) shall be deemed to mean November 13, 2006.

(d) ***Except as otherwise provided in this chapter, the April 29, 2005, date described in 10 C.F.R. 35.57(a)(2) shall be deemed to mean April 29, 2008.***

(e) Except as otherwise provided in this section, any reference in 10 C.F.R. Part 35 to:

(1) "10 CFR Part 19" or "10 CFR 19" shall be deemed to mean "NAC 459.780 to 459.794, inclusive."

(2) "10 CFR 19.12" or "§ 19.12" shall be deemed to mean "NAC 459.784."

(3) "10 CFR Part 20" or "10 CFR 20" shall be deemed to mean "NAC 459.320 to 459.374, inclusive."

(4) "10 CFR 20.1101" or "§ 20.1101" shall be deemed to mean "paragraph (a) of subsection 1 of NAC 459.321."

(5) "10 CFR 20.1301(a)(1)" or "§ 20.1301(a)(1)" shall be deemed to mean "paragraph (a) of subsection 1 of NAC 459.335."

(6) "10 CFR 20.1301(c)" or "§ 20.1301(c)" shall be deemed to mean "paragraph (c) of subsection 1 of NAC 459.335."

(7) "10 CFR 20.1501" or "§ 20.1501" shall be deemed to mean "NAC 459.337."

(8) "10 CFR Part 30" or "10 CFR 30" shall be deemed to mean "NAC 459.180 to 459.314, inclusive."

(9) "10 CFR 30.34(b)" or "§ 30.34(b)" shall be deemed to mean "subsection 2 of NAC 459.198."

(10) "10 CFR 30.6" or "§ 30.6" shall be deemed to mean "NAC 459.134."

(11) "10 CFR 32.72(b)(4)" or "§ 32.72(b)(4)" shall be deemed to mean "paragraph (c) of subsection 2 of NAC 459.300."

(12) "10 CFR Part 33" or "10 CFR 33" shall be deemed to mean "NAC 459.262 to 459.274, inclusive."

(13) "10 CFR 33.13" or "§ 33.13" shall be deemed to mean "NAC 459.268."

(14) "10 CFR 71," "10 CFR Part 71," "10 CFR 71.5," "§ 71.5," or "49 CFR Parts 171-173" shall be deemed to mean "NAC 459.314."

(15) "10 CFR Part 170," "10 CFR 170," "10 CFR Part 171" or "10 CFR 171" shall be deemed to mean "NAC 459.310."

(16) “Byproduct material” shall be deemed a reference to “radioactive material.”

(17) “Commission” or “NRC” shall be deemed a reference to “Division.”

(18) “Commission’s regulations,” “federal regulations” or “NRC regulations” shall be deemed a reference to “NAC 459.010 to 459.950, inclusive.”

(19) “NRC Form 313” shall be deemed a reference to “NRC Form 5,” Application for Radioactive Material License, described in NAC 459.2434.

(20) “NRC license” shall be deemed a reference to “license issued by the Division pursuant to NAC 459.010 to 459.950, inclusive.”

(21) “NRC Operations Center”***, “NRC Regional Office listed in § 30.6”*** or “Director, Office of Nuclear Safety and Safeguards” shall be deemed a reference to “the provisions of NAC 459.134 and the contact information described in the State of Nevada Radiological Emergency Response Plan.”

(22) “NRC or an Agreement State,” “Commission or an Agreement State” or “Commission or by an Agreement State” shall be deemed a reference to “Division, Nuclear Regulatory Commission or an agreement state.”

(23) The text of 10 CFR 35.35.491(b)(3) is changed to read:

“(3) Has obtained written attestation, signed by a preceptor authorized user who meets the requirements in §§35.490, 35.491, or equivalent Agreement State requirements, that the individual has satisfactorily completed the requirements in paragraph (b)(1) and (b)(2) of this section and has achieved a level of competency sufficient to function independently as an authorized user of strontium-90 for ophthalmic use.”

(~~[e]~~*f*) The full text of any sentence that contains a reference to “10 CFR Part 21,” “10 CFR 21,” “10 CFR 30.7,” “§ 30.7,” “10 CFR 30.9,” “§ 30.9,” “10 CFR 30.10” or “§ 30.10” shall be deemed omitted.

2. A copy of the volume containing 10 C.F.R. Part 35 may be obtained from the Superintendent of Documents, United States Government Printing Office, Washington, D.C. 20402-9325, at a cost of $61, or free of charge at the Internet address http://www.gpoaccess.gov/cfr/index.html.

NARM Rule-20.2006

Sec. 33 NAC 459.313 is hereby amended to read as follows:

NAC 459.313 Shipment of radioactive waste for ultimate disposal at licensed land disposal facility.

1. A licensee who ships radioactive waste intended for ultimate disposal at a licensed land disposal facility must document the information required on Nuclear Regulatory Commission ~~[Form 541]~~, Uniform Low-Level Radioactive Waste Manifest, and transfer th~~[e]~~*is* recorded manifest information to the intended consignee in accordance with the provisions of Appendix G.

2. Each manifest described in subsection 1 must include a certification by the waste generator as provided in section II of Appendix G.

3. Each person involved in the transfer for disposal or the disposal of radioactive waste, including, without limitation, the waste generator, waste collector, waste processor and disposal facility operator, shall comply with the requirements of section III of Appendix G.

4. Any licensee shipping byproduct material as defined in paragraphs (3) and (4) of the definition of Byproduct material set forth in Section 2 intended for ultimate disposal at a land

disposal facility licensed under 10 CFR § 61 must document the information required on the NRC's Uniform Low-Level Radioactive Waste Manifest and transfer this recorded manifest information to the intended consignee in accordance with Appendix G.

Sec. 34 NAC 459.314 is hereby amended to read as follows:

NAC 459.314 Transportation: Preparation of radioactive material.

All persons who transport radioactive material or deliver radioactive material to a carrier for transport must comply with the applicable provisions contained in 10 CFR Part 71 and 49 CFR Parts 170 through 189. The regulations in 10 CFR Part 71 apply to any licensee authorized by specific or general license to receive, possess, use, or transfer licensed material, if the licensee delivers that material to a carrier for transport, transports the material outside the site of usage, or transports that material on public highways. No provision of 10 CFR Part 71 authorizes possession of licensed material.

The provisions of 10 CFR 71.0(c), 71,1(a), 71.3, 71.4(a), 71.15, 71.17 71.19(a), 71.19(b), 71.19(c) 71.20 through 71.23, 71.47, 71.83 through 71.89, 71.97, 71.101(a), 71.101(b), 71.101(c), 71.101(g), 71.105, 71.127 through 71.137 and Appendix A to Part 71, as they existed on ***November 14, 2007***, are hereby adopted by reference, subject to the following:

~~[1. Byproduct material, described in 10 CFR 71.4, is deemed to include naturally occurring and accelerator produced radioactive material (NARM);~~

~~2. 10 CFR 71.6 is not adopted by reference;~~

~~3. 71.65 is not adopted by reference;~~

~~4. 71.100 is not adopted by reference~~

~~5. Any reference to a license, licensee, applicant, or applicant for a license, an NRC license, licensee or applicant, Commission license, licensee or applicant, license issued by the Commission or licensee of the Commission shall be deemed to be a reference to a Nevada State Health Division license, licensee or applicant or license issued by the Division;~~

~~6. Any reference to the Commission, the Nuclear Regulatory Commission, or the NRC, except as provided below, shall be deemed a reference to the Nevada State Health Division:~~

~~a. 10 CFR 71.4, definition of certificate holder;~~

~~b. 71.0(a)(2), 71.0(d)(1) and 71.0(g);~~

~~c. 71.1(a);~~

~~d. 71.4(3);~~

~~e. 71.8(b)(2);~~

~~f. 71.10;~~

~~g. 71.12;~~

~~h. The reference, in 71.17(a), to the NRC;~~

~~i. The reference, 71.17(b), to the Commission;~~

~~j. 71.17(c)(3);~~

~~k. 71.17(e);~~

~~l. 71.19(a), 71.19(c), 71.19(d); 71.19(e);~~

~~m. The reference, in 71.23(b) to the Commission;~~

~~n. The reference, in 71.37, to the applicant, refers to an applicant to the NRC;~~

~~o. 71.38(b);~~

~~p. 71.39;~~

~~q. 71.41(a), 71.41(b)and 71.41(c);~~

~~r. 71.55(c);~~

~~s. The reference, in 71.85(c) to the Commission;~~

~~t. The reference, in 71.93(c) to the NRC;~~

~~u. The reference, in 71.95(a)(1) to the NRC;~~

~~v. 71.99;~~

~~w. The reference, in 71.101(g);~~

~~7. The reference, in 10 CFR 71.9(e)(1) and 2, to NRC Form 3, shall be deemed a reference to Division Form NRC-1;~~

~~8. The reference, in 10 CFR 71.9(e)(1), to §19.11(c)shall be deemed a reference to NAC 459.782.3;~~

~~9. 10 CFR 71.9(f) is not adopted by reference;~~

~~10. 10 CFR 71.100 is not adopted by reference;]~~

1. The exclusion of the following:

(a). In 10 CFR 71.4 the following definitions:

(1) "close reflection by water";

(2) "licensed material";

(3) "optimum interspersed hydrogenous moderation";

(4) "spent nuclear fuel or spent fuel"; and

(5) "state."

2. The substitution of the following date reference:

(a) "October 1, 2011" for "October 1, 2008";

3. The substitution for the following rule references:

(a) "NAC 459.737 [incorporating 10 CFR 34.31(b) by reference]" for "Sec. 34.31(b) of this chapter" as found in 10 CFR 71.101(g);

(b) "NAC 459.339.1" for reference to "10 CFR 20.1502";

(c) 10 CFR Part 2, Subpart B, has no equivalent in Nevada Administrative Code 459;

(d) "NAC 459.3602" for reference to "10 CFR part 35";

(e) "NAC 459.3585.5" for reference to "10 CFR 20.1906(e)";

(f) "NAC 459.314" for reference to "10 CFR 71.5";

(g) "10 CFR 71.101(a), 71.101(b), 71.101(c)(1), 71.101(g), 71.105, and 71.127 through 71.137" for "subpart H of this part" or for "subpart H" except in 10 CFR 71.17(b), 71.20(b), 71.21(b), 71.22(b), 71.23(b);

(h) "10 CFR 71.0(c), 71.1(a), 71.3, 71.4, 71.17(c)(2), 71.20(c)(2), 71.21(d)(2), 71.83 through 71.89, 71.97, 71.101(a), 71.101(b), 71.101(c)(1), 71.101(g), 71.105, and 71.127 through 71.137" for "subparts A, G, and H of this part";

(i) "10 CFR 71.47" for "subparts E and F of this part"; and

(j) "10 CFR 71.101(a), 71.101(b), 71.101(c)(1), 71.101(g), 71.105, and 71.127 through 71.137" for "Sec. 71.101 through 71.137."

4. The substitution of the following terms:

(a) "Division" for:

(1)"Commission" in 10 CFR 71.0(c), 71.17(a), 71.20(a), 71.21(a), 71.22(a), 71.23(a), and 71.101(c)(1);

(2) "Director, Division of Nuclear Safety, Office of Nuclear Security and Incident Response" in 10 CFR 71.97(c)(1), and 71.97(f)(1);

(3) "Director, Office of State Programs, U.S. Nuclear Regulatory Commission, Washington, DC 20555-0001" in 10 CFR 71.97(c)(3)(iii);

(4) "NRC" in 10 CFR 71.101(f);

(b) "Executive Secretary, the U.S. Nuclear Regulatory Commission, or an Agreement State" for "Commission" in 10 CFR 71.3;

(c) "The Governor of Nevada" for:

(1) "the governor of a State" in 71.97(a);

(2) "each appropriate governor" in 10 CFR 71.97(c)(1);

(3) "the governor" in 10 CFR 71.97(c)(3);

(4) "the governor of the state" in 10 CFR 71.97(e);

(5) "the governor of each state" in 10 CFR 71.97(f)(1);

(6) "a governor" in 10 CFR 71.97(e);

(d) "State of Nevada" for "State" in 71.97(a), 71.97(b)(2), and 71.97(d)(4);

(e) "the Governor of Nevada's" for:

(1) "the governor's" in 10 CFR 71.97(a), 71.97(c)(3), 71.97(c)(3)(iii), 71.97(e), and 71.97(f)(1);

(2) "governor's" in 10 CFR 71.97(c)(1), and 71.97(e);

(f) "Specific or general" for "NRC" in 10 CFR 71.0(c);

(g) "The Division" for reference to "ATTN: Document Control Desk, Director, Spent Fuel Project Office, Office of Nuclear Material Safety and Safeguards" in 10 CFR 71.101(c)(1);

(h) "Each" for "Using an appropriate method listed in Sec. 71.1(a), each" in 10 CFR 71.101(c)(1);

(i) "The material must be contained in a Type A package meeting the requirements of 49 CFR 173.417(a)." for "The fissile material need not be contained in a package which meets the standards of subparts E and F of this part; however, the material must be contained in a Type A package. The Type A package must also meet the DOT requirements of 49 CFR 173.417(a)." as found in 10 CFR 71.22(a) and 71.23(a);

(j) "Licensee" for "licensee, certificate holder, and applicant for a COC"; and

(k) "Licensee is" for reference to "licensee, certificate holder, and applicant for a COC are."

5. Transportation of licensed material

(a) Each licensee who transports licensed material outside the site of usage, as specified in the license issued by the Executive Secretary, the U.S. Nuclear Regulatory Commission or an Agreement State, 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 regulations in 49 CFR parts 107, 171 through 180, and 390 through 397 ~~[2006]~~*, appropriate to the mode of transport.*

(1) The licensee shall particularly note DOT regulations in the following areas:

(I) Packaging--49 CFR part 173: subparts A (49 CFR 173.1 through 49 CFR 173.13), B (49 CFR 173.21 through 49 CFR 173.40), and I (49 CFR 173.401 through 49 CFR 173.477).

(II) Marking and labeling--49 CFR part 172: subpart D (49 CFR 172.300 through 49 CFR 172.338); and 49 CFR 172.400 through 49 CFR 172.407 and 49 CFR 172.436 through 49 CFR 172.441 of subpart E.

(III) Placarding--49 CFR part 172: subpart F (49 CFR 172.500 through 49 CFR 172.560), especially 49 CFR 172.500 through 49 CFR 172.519 and 49 CFR 172.556; and appendices B and C.

(IV) Accident reporting--49 CFR part 171: 49 CFR 171.15 and 171.16.

(V) Shipping papers and emergency information--49 CFR part 172: subparts C (49 CFR 172.200 through 49 CFR 172.205) and G (49 CFR 172.600 through 49 CFR 172.606).

(VI) Hazardous material employee training--49 CFR part 172: subpart H (49 CFR 172.700 through 49 CFR 172.704).

(VIII) Security plans--49 CFR part 172: subpart I (49 CFR 172.800 through 49 CFR 172.804).

(IX) Hazardous material shipper/carrier registration--49 CFR part 107: subpart G (49 CFR 107.600 through 49 CFR 107.606).

(2) The licensee shall also note DOT regulations pertaining to the following modes of transportation:

(I) Rail--49 CFR part 174: subparts A through D (49 CFR 174.1 through 49 CFR 174.86) and K (49 CFR 174.700 through 49 CFR 174.750).

(II) Air--49 CFR part 175.

(III) Vessel--49 CFR part 176: subparts A through F (49 CFR 176.1 through 49 CFR 176.99) and M (49 CFR 176.700 through 49 CFR 107.720).

(IV) Public Highway--49 CFR part 177 and parts 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, waiver, or exemption from those requirements, and any notification referred to in those requirements, must be filed with, or made to, the Division.

Sec. 35 NAC 459.3585 is hereby amended to read as follows:

NAC 459.3585 Precautionary procedures: Receiving, monitoring and opening packages.

1. Each licensee who expects to receive a package containing quantities of radioactive material in excess of a type A quantity, as defined in 10 C.F.R. § 71.4, as that section existed on *November 14, 2007*, shall make arrangements to receive:

(a) The package when the carrier offers it for delivery; or

(b) Notification of the arrival of the package at the terminal of the carrier and to take possession of the package expeditiously.

2. Except as otherwise provided in subsection 6, each licensee shall monitor the external surfaces of a package known to contain radioactive material for radioactive contamination and radiation levels if the package:

(a) Is labeled as containing radioactive material; or

(b) Has evidence of potential contamination.

3. The licensee shall perform the monitoring required pursuant to subsection 2 as soon as practicable after receipt of the package, but not later than 3 hours after the package is received at the facility of the licensee if the package is received during the normal working hours of the licensee. If the package is received after the normal working hours of the licensee, the monitoring must be performed not later than 3 hours after the beginning of the next normal working day of the licensee.

4. A licensee shall immediately notify the carrier who made the final delivery of a package and, by telephone and telegram, mailgram or facsimile, the Division, if:

(a) Removable radioactive contamination on the surface of the package is detected that exceeds 22,000 disintegrations per minute per 100 square centimeters of package surface; or

(b) The radiation level at 1 meter from the surface of the package exceeds 10 milliroentgens per hour.

5. Each licensee shall:

(a) Establish, maintain and retain written procedures for safely opening packages in which radioactive material is received; and

(b) Ensure that the procedures established pursuant to paragraph (a) are followed and that consideration is given to any special instructions for the type of package being opened.

6. A licensee transferring a source of radiation in a special form in a motor vehicle owned or operated by the licensee to and from a work site is not required to comply with the requirements of subsection 2, but shall ensure that the source of radiation is still properly lodged in its shield.

~~[7. For the purposes of this section, the State Board of Health hereby adopts by reference 10 C.F.R. § 71.4, as that section existed on January 1, 1993. A copy of the volume containing that section may be purchased from the Superintendent of Documents, United States Government Printing Office, Washington, D.C. 20402, for the price of $21.]~~

Sec. 36 NAC 459.737 is hereby amended to read as follows:

NAC 459.737 Adoption by reference of certain provisions of Code of Federal Regulations; revision of certain terms. (NRS 459.030)

1. ***(a)*** In addition to any applicable requirement of NAC 459.010 to 459.794, inclusive, a person licensed by the Division to use a sealed source to engage in industrial radiography shall comply with all applicable requirements of, and may rely on all applicable exclusions or exemptions included in, the provisions of Part 34 of Title 10 of the Code of Federal Regulations, as adopted by reference in this section.

(b) The requirements of this paragraph shall not apply to persons using electronic sources of radiation to conduct industrial radiography.

2. Part 34 of Title 10 of the Code of Federal Regulations, as those provisions existed on January ***3***1, 200~~[1]~~***8***, is hereby adopted by reference, subject to the following:

(a) (1) The exclusion of the following 10 CFR sections: "34.1", "34.5", "34.8", "34.11", "34.121", and "34.123";

(b) (2) The exclusion of "10 CFR 34.45(a)(9)";

(c) (3) The exclusion of the following 10 CFR references within 10 CFR 34: "21", "Sec. 21.21", "30.7", "30.9", and "30.10";

(d) (4) The exclusion of "offshore" in 10 CFR 34.3 definition for "offshore platform radiography";

(e) (5) The substitution of the following wording:

(1)(a) "Nevada Administrative Code Chapter 459" for the reference to:

(I) (i) "Commission's regulations", except as stated in NAC 459.737.2(e)(6);

(II) (ii) "Federal regulations";

(III) (iii) "NRC regulations"; and

(IV) (iv) "this chapter" as stated in 10 CFR 34.101(1)(a);

(2) (b) "Nevada State Health Division " for the reference to "Commission", except as stated in 10 CFR 34.20 and NAC 459.737.2(e)(3)(IV);

(3) (c) "Division, U.S. Nuclear Regulatory Commission, or an Agreement State" for references to:

(I) (i) "NRC or an Agreement State";

(II) (ii) "Commission or by an Agreement State";

(III) (iii) "Commission or an Agreement State"; and

(IV) (iv) "Commission" in 10 CFR 34.43(a)(2);

(4) (d) "License" for reference to "NRC license(s)";

(5) (e) In 10 CFR 34.27(d), "reports of test results for leaking or contaminated sealed sources shall be made pursuant to NAC 459.307.", for reference to the following statements:

(I) (i) "A report must be filed with the Director of Nuclear Material Safety and Safeguards, by an appropriate method listed in Sec. 30.6(a) of this chapter, the report to be filed within 5 days of any test with results that exceed the threshold in this paragraph (d), and to describe the equipment involved, the test results, and the corrective action taken."; and

(II) (ii) "A copy of the report must be sent to the Administrator of the appropriate Nuclear Regulatory Commission's Regional Office listed in appendix D of 10 CFR part 20 of this chapter "Standards for Protection Against Radiation.";

(6) (f) In 10 CFR 34.27(d), "NAC 459.307.3" for the reference to "Commission regulations";

(7) (g) In 10 CFR 34.43(a)(1), "10 CFR 30.6" for the reference to "Sec. 30.6(a) of this chapter";

(8) (h) In 10 CFR 34.89, "a U.S. Nuclear Regulatory Commission or an Agreement State" for the reference to "the Agreement State";

(I) (i) In 10 CFR 34.101(a), "Nevada State Health Division" for the following wording:

"NRC's Office of Nuclear Material Safety and Safeguards, Division of Industrial and Medical Nuclear Safety, by an appropriate method listed in Sec. 30.6(a) of this chapter,";

(9) (j) In 10 CFR 34.101(c), " Nevada State Health Division " for the reference to "appropriate NRC regional office listed in 10 CFR 30.6(a)(2) of this chapter";

(10) (k) In Item 12, Section I of Appendix A to 10 CFR 34, "Nevada State Health Division, the U.S. Nuclear Regulatory Commission and other independent certifying organizations and/or Agreements States" for the reference to "Commission and other independent certifying organizations and/or Agreement States";

(11) (l) In Item 1, Section II of Appendix A to 10 CFR 34, "equivalent U.S. Nuclear Regulatory Commission or Agreement State regulations" for the reference to "equivalent Agreement State regulations"; and

(12) (m) In Item 2(c), Section II of Appendix A to 10 CFR 34, "a Nevada, U.S. Nuclear Regulatory Commission, or an Agreement State licensee" for the reference to "an Agreement State or a NRC licensee"; and

(f) (6) The substitution of the following NAC 459 references for specific 10 CFR references:

(1) (a) "NAC 459.120.1" for reference to "10 CFR 34.111";

(2) (b) " NAC 459.320 to NAC 459.374" for the reference to "10 CFR 20";

(3) (c) "NAC 459.341.1(a)" for the reference to "10 CFR 20.1601(a)(1)";

(4) (d) "NAC 459.3555.1 and .2" for the reference to "10 CFR 20.1902(a) and (b)";

(5) (e) "NAC 459.3565" for the reference to "10 CFR 20.1903";

(6) (f) "NAC 459.371" for the reference to "10 CFR 20.2203";

(7) (g) "NAC 459.780 to 459.794 " for the reference to "10 CFR 19";

(8) (h) "NAC 459.210" for the reference to "10 CFR 150.20";

(9) (i) "NAC 459.373" for the reference to "Sec. 30.50";

(10) (j) "NAC 459.314" for the reference to "10 CFR 71", "10 CFR 71.5", and "49 CFR 171 to 173";

(11) (k) "NAC 459.238" for the reference to "10 CFR 30.33"; and

(12) (l) "NAC 459.737" for the reference to "10 CFR 34."

~~[(a) Except as otherwise provided in this section, any reference to "Commission's regulations," "federal regulations" or "NRC regulations" shall be deemed a reference to "NAC 459.010 to 459.950, inclusive";~~

~~(b) Except in 10 C.F.R. § 34.20 and as otherwise provided in this section, any reference to the "Commission" or "NRC" shall be deemed a reference to the "Division";~~

~~(c) Except as otherwise provided in this section, any reference to "NRC or an Agreement State," "Commission or an Agreement State" or "Commission or by an Agreement State" shall be deemed a reference to "Division, Nuclear Regulatory Commission or an agreement state";~~

~~(d) Except as otherwise provided in this section, any reference to "NRC license" shall be deemed a reference to "license issued by the Division pursuant to NAC 459.010 to 459.950, inclusive";~~

~~(e) Any reference to "10 CFR part 19" or "10 CFR 19" shall be deemed a reference to "NAC 459.780 to 459.794, inclusive";~~

~~(f) Any reference to "10 CFR part 20" or "10 CFR 20" shall be deemed a reference to "NAC 459.320 to 459.374, inclusive";~~

~~(g) Any reference to "10 CFR 20.1601(a)(1)" or "§ 20.1601(a)(1)" shall be deemed a reference to "paragraph (a) of subsection 1 of NAC 459.341";~~

~~(h) Any reference to "10 CFR 20.1902" or "§ 20.1902" shall be deemed a reference to "NAC 459.3555";~~

~~(i) Any reference to "10 CFR 20.1903" or "§ 20.1903" shall be deemed a reference to "NAC 459.3565";~~

~~(j) Any reference to "10 CFR 20.2203" or "§ 20.2203" shall be deemed a reference to "NAC 459.371";~~

~~(k) The full text of a sentence that contains any reference to "10 CFR part 21" or "10 CFR 21" shall be deemed omitted;~~

~~(l) The full text of a sentence that contains any reference to "10 CFR 30.7," "§ 30.7," "10 CFR 30.9," "§ 30.9," "10 CFR 30.10" or "§ 30.10" shall be deemed omitted;~~

~~(m) Any reference to "10 CFR 30.33" or "§ 30.33" shall be deemed a reference to "NAC 459.238";~~

~~(n) Any reference to "10 CFR 30.50" or "§ 30.50" shall be deemed a reference to "NAC 459.373";~~

~~(o) Any reference to "10 CFR part 34" or "10 CFR 34" shall be deemed a reference to "this section";~~

~~(p) Any reference to "10 CFR 34.111" shall be deemed a reference to "NAC 459.120";~~

~~(q) Any reference to "10 CFR 71," "10 CFR part 71," "10 CFR 71.5," "§ 71.5," or "49 CFR parts 171-173" shall be deemed a reference to "NAC 459.314";~~

~~(r) Any reference to "10 CFR 150.20" or "§ 150.20" shall be deemed a reference to "NAC 459.210";~~

~~(s) In 10 C.F.R. § 34.3, any reference to "offshore platform radiography" shall be deemed a reference to "platform radiography";~~

~~(t) In 10 C.F.R. § 34.27(d), any reference to:~~

~~(1) "Commission regulations" shall be deemed a reference to "NAC 459.307"; and~~

~~(2) "Director of Nuclear Material Safety and Safeguards, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001" or "Administrator of the appropriate Nuclear Regulatory Commission's Regional Office listed in appendix D of 10 CFR part 20 of this chapter 'Standards for Protection Against Radiation' " shall be deemed a reference to "Division pursuant to NAC 459.307";~~

~~(u) In 10 C.F.R. § 34.43(a)(2), any reference to "Commission" shall be deemed a reference to "Division, Nuclear Regulatory Commission or an agreement state";~~

~~(v) In 10 C.F.R. § 34.89, any reference to "Agreement State" shall be deemed a reference to "Nuclear Regulatory Commission or an agreement state";~~

~~(w) In 10 C.F.R. § 34.101(a), any reference to "U.S. Nuclear Regulatory Commission, Division of Industrial and Medical Nuclear Safety, Washington, D.C. 20555-0001, with a copy to the Director, Office for Analysis and Evaluation of Operation Data, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001," shall be deemed a reference to "Division";~~

~~(x) In 10 C.F.R. § 34.101(c), any reference to "appropriate NRC regional office listed in § 30.6(a)(2) of this chapter" shall be deemed a reference to "Division"; and~~

~~(y) In Appendix A to Part 34 of Title 10 of the Code of Federal Regulations:~~

~~(1) The reference in item 12 of section I to "Commission and other independent certifying organizations and/or Agreement States" shall be deemed a reference to "Division, Nuclear Regulatory Commission, other independent certifying organizations and agreement states";~~

~~(2) The reference in item 1 of section II to "Agreement State regulations" shall be deemed a reference to "regulations of the Nuclear Regulatory Commission or an agreement state"; and~~

~~(3) The reference in item 2 of section II to "an Agreement State or a NRC licensee" shall be deemed a reference to "a person that holds a license issued pursuant to NAC 459.010 to 459.950, inclusive, by the Nuclear Regulatory Commission or an agreement state."~~]

3. The following sections of Part 34 of Title 10 of the Code of Federal Regulations, as those provisions existed on January *3*1, 200~~[1]~~*8*, are not adopted by reference:

(a) Section 34.1;

(b) Section 34.5;

(c) Section 34.8;

(d) Section 34.11;

(e) Section 34.45(a)(9);

(f) Section 34.121; and

(g) Section 34.123.

4. A copy of a publication that contains Part 34 of Title 10 of the Code of Federal Regulations may be obtained from the Superintendent of Documents, United States Government Printing Office, Washington, D.C. 20402, at the price of $55.

Sec. 37 NAC 459.2434, 459.2565, and 459.3064 through 459.3068 are hereby repealed.

Text of Sections to be Repealed

NAC 459.2434 Specific licenses: Application, amendment or renewal of license for medical use of radioactive material. (NRS 459.201)

1. An application for a license for medical use of radioactive material must be made by submitting an original and one copy of NRC Form 5 to the Division. NRC Form 5 and its instructions may be obtained at no charge from the Division.

2. An application for amendment to a license or renewal of a license for medical use of radioactive material must be made by submitting an original and one copy of a letter of request to the Division.

NAC 459.2565 Specific licenses: Use of sealed sources for diagnosis. (NRS 459.201)

1. A licensee may use the following sealed sources for diagnosis in accordance with the radiation safety and handling instructions of the manufacturer:

(a) Iodine-125, americium-241 and gadolinium-153 in a device for bone mineral analysis; and

(b) Iodine-125 in a portable imaging device.

2. A licensee who uses radioactive material as a sealed source for diagnosis shall have in his possession a portable radiation detection survey instrument capable of:

(a) Detecting dose rates that range from 0.1 millirem per hour to 100 millirem per hour; or

(b) Measuring dose rates that range from 1 millirem per hour to 1000 millirem per hour.

NAC 459.3064 Written attestations not required for authorized users who have license issued by Nuclear Regulatory Commission or agreement state. (NRS 459.201) The written attestations described in 10 C.F.R. §§ 35.14(a), 35.50(d), 35.51(b)(2), 35.55(b)(2), 35.190(c)(2), 35.290(c)(2), 35.390(b)(2), 35.392(c)(3), 35.394(c)(3), 35.396(d)(3), 35.490(b)(3), 35.491(b)(3) and 35.690(b)(3) are not required for authorized users who have been named on a radioactive material license issued by the Nuclear Regulatory Commission or an agreement state before November 13, 2006.

NAC 459.3066 Satisfaction of training requirements for radiation safety officer, authorized medical physicist, authorized nuclear pharmacist or authorized user. (NRS 459.201)

1. Before April 29, 2008, a licensee shall satisfy the training requirements for a radiation safety officer, an authorized medical physicist, an authorized nuclear pharmacist or an authorized user by complying with:

(a) The appropriate provisions of 10 C.F.R. Part 35, Subpart J; or

(b) The appropriate provisions of 10 C.F.R. Part 35, Subpart B or Subparts D to H, inclusive.

2. On or after April 29, 2008, a licensee shall satisfy the training requirements for a radiation safety officer, an authorized medical physicist, an authorized nuclear pharmacist or an authorized user by complying with the provisions of 10 C.F.R. Part 35, Subpart B or Subparts D to H, inclusive.

NAC 459.3068 Additional requirements for persons registered to use sealed source to engage in medical use. (NRS 459.201) Except as otherwise provided in NAC 459.3064 and 459.3066, in addition to any applicable requirement of NAC 459.010 to 459.794, inclusive, a person registered with the Division to use a sealed source to engage in medical use of a radioactive material shall comply with all applicable requirements of, and may rely on all applicable exclusions or exemptions included in, the provisions of 10 C.F.R. Part 35, as adopted by reference pursuant to NAC 459.3062.