**PROPOSED REGULATION OF THE**

**STATE BOARD OF HEALTH**

**LCB File No. R114-12**

September 21, 2012

EXPLANATION – Matter in ***italics*** is new; matter in brackets **[**~~omitted material~~**]** is material to be omitted.

AUTHORITY: §1, NRS 439.150; §§2-33, 38, 39, 41-46, 48, 49, 51, 57-65, 67-74 and 79-82, NRS 459.201; §§34 and 50, NRS 439.150 and 459.201; §§35-37, 40, 47, 52, 53, 55, 56, 66 and 76-78, NRS 459.030 and 459.201; §54, 75, NRS 459.030.

A REGULATION relating to the control of radiation; prescribing certain disciplinary actions the State Board of Health is authorized to take against an applicant for or holder of a license or registration authorizing the possession and use of radioactive materials; requiring certain applicants for such a license to appoint a radiation safety officer; prescribing the training and experience requirements for such radiation safety officers; adopting by reference certain federal regulations; requiring certain applicants for a license or renewal of a license authorizing the possession and use of radioactive materials to report additional details with regard to the cost estimate for decommissioning; requiring certain licensees to conduct operations to minimize the introduction of residual radioactivity into an area; requiring certain licensees and registrants to perform surveys as necessary to determine whether subsurface residual radioactivity is present and to retain records of those surveys; prescribing the fee for a specific license for radioactive materials that involve the use of an irradiator; and providing other matters properly relating thereto.

**Section 1.** NAC 457.295 is hereby amended to read as follows:

457.295 The Health Division shall charge and collect the following **[**~~nonrefundable~~**]** fees:

1. For the issuance or renewal of a certificate for a machine, $551.

2. For the issuance or renewal of a mammographer's certificate, $88.

3. For the issuance or renewal of a certificate to provide training to mammographers pursuant to NAC 457.357, $100.

**Sec. 2.** Chapter 459 of NAC is hereby amended by adding thereto the provisions set forth as sections 3 to 20, inclusive, of this regulation.

**Sec. 3.** ***"Temporary job site" means a physical location where a source of radiation is stored or used other than the physical location indicated on a license or registration as the location at which the source of radiation covered by that license or registration is used or stored.***

**Sec. 4.** ***1. A source of radiation may be stored at a temporary job site for a period that exceeds:***

***(a) Thirty days only after the licensee or registrant provides written notification to the Division; and***

***(b) One hundred and eighty days only after the licensee or registrant obtains written authorization from the Division.***

***2. A source of radiation may not be transferred from one temporary job site to another temporary job site except as authorized pursuant to a specific license issued by the Division.***

**Sec. 5.** ***In addition to the grounds for disciplinary action set forth in NAC 459.208, the State Board of Health may deny, refuse to renew, suspend or revoke the license or registration of an applicant for or a holder of a license or registration issued pursuant to NAC 459.118 to 459.950, inclusive, and sections 4 to 20, inclusive, of this regulation, if the applicant, licensee or registrant:***

***1. Receives, possesses, uses, transfers, owns or acquires any source of radiation or operates a radiation machine in violation of a provision of NRS 459.010 to 459.290, inclusive, NAC 459.010 to 459.950, inclusive, and sections 3 to 20, inclusive, of this regulation, or any other applicable state or federal laws or regulations;***

***2. Fails to comply with any applicable order issued pursuant to a provision of NRS 459.010 to 459.290, inclusive, NAC 459.010 to 459.950, inclusive, and sections 3 to 20, inclusive, of this regulation, or any other applicable state or federal laws or regulations;***

***3. Violates any term, condition or limitation of a license or registration issued pursuant to a provision of NRS 459.010 to 459.290, inclusive, NAC 459.010 to 459.950, inclusive, and sections 3 to 20, inclusive, of this regulation, or any other applicable state or federal laws or regulations;***

***4. Allows an employee, contractor or subcontractor who is under the supervision of the applicant, licensee or registrant or an employee of such a contractor or subcontractor to violate a provision of NRS 459.010 to 459.290, inclusive, NAC 459.010 to 459.950, inclusive, and sections 3 to 20, inclusive, of this regulation, or any other applicable state or federal laws or regulations, including, without limitation, violating subsection 1 of NAC 459.135;***

***5. Fails or refuses to cooperate with the Division during an investigation, evaluation or inspection;***

***6. Fails or refuses to comply with a written request from the Division, the Nuclear Regulatory Commission or any applicable local or national accreditation body for records, reports or other materials;***

***7. Provides false or misleading or otherwise inaccurate information on an application for a license or registration or for renewal of a license or registration;***

***8. Has been disciplined by any applicable federal agency, local or national accreditation body or has otherwise been found by the Division to have committed unprofessional conduct, including, without limitation, a violation of the code of ethics or professional code of conduct of the federal agency or accreditation body;***

*9. Held a certificate issued by the Division or by the appropriate agency in another jurisdiction and the certificate was withdrawn, revoked, terminated or suspended; or*

*10. Fails to obtain a license or registration required pursuant to a provision of NRS 459.010 to 459.290, inclusive, NAC 459.010 to 459.950, inclusive, and sections 3 to 20, inclusive, of this regulation, or any other applicable state or federal laws or regulations.*

**Sec. 6.** *1. In addition to any other requirements for obtaining a specific license issued by the Division, an applicant for a specific license must, except as otherwise provided in NAC 459.272, appoint a radiation safety officer to implement and oversee a radiation safety program for the use of radioactive material specified in the application for the specific license.*

*2. The radiation safety officer must satisfy the training and experience requirements set forth in sections 7 to 19, inclusive, of this regulation, as applicable, and any other training deemed by the Division to be necessary to minimize danger to the public health and safety or property.*

**Sec. 7.** *A radiation safety officer for a license for the medical use of radioactive material must satisfy the training and experience requirements set forth in the definition of a radiation safety officer pursuant to 10 C.F.R. § 35.2, as adopted by reference in NAC 459.3062.*

**Sec. 8.** *1. A radiation safety officer for a license for by-product material that involves the use of a portable gauge must have successfully completed:*

*(a) A course of training in portable gauges provided by the manufacturer for users of portable gauges or radiation safety officers; or*

*(b) An equivalent course that meets the criteria set forth in subsection 2.*

*2. An equivalent course must:*

*(a) Be taught by an instructor who meets the qualifications set forth in subsection 3;*

***(b) Include at least 1 1/2 hours of training in radiation safety and regulatory requirements, emphasizing practical subjects relating to the safe use of a portable gauge, including, without limitation, training in:***

***(1) The difference between radiation and radioactive contamination;***

***(2) The difference between internal and external exposure to radiation;***

***(3) The use of the methods involving time, distance and shielding to minimize exposure to radiation;***

***(4) The control and surveillance of a portable gauge;***

***(5) The location of a sealed source within a portable gauge;***

***(6) Inventory concerning portable gauges;***

***(7) Recordkeeping concerning portable gauges;***

***(8) Handling incidents involving radiation which compromise safety;***

***(9) Licensing and inspection of radioactive materials by the Division;***

***(10) Maintaining complete and accurate information as it relates to a license for by-product material that involves the use of a portable gauge;***

***(11) The protection of employees who provide information concerning an alleged violation of the Atomic Energy Act of 1954 or the Energy Reorganization Act of 1974; and***

***(12) The meaning of deliberate misconduct as it relates to a license for by-product material that involves the use of a portable gauge and possible enforcement actions relating to such deliberate misconduct;***

***(c) Include at least 1 1/2 hours of practical training in portable gauge theory and operation, including, without limitation:***

***(1) Training in operating, emergency, maintenance and transportation procedures; and***

*(2) Field training emphasizing radiation safety, including, without limitation, practical tests which involve:*

*(I) Setting up and making measurements with the portable gauge;*

*(II) Controlling and maintaining surveillance of the portable gauge;*

*(III) Performing routine cleaning and lubrication of the portable gauge;*

*(IV) Packaging and transporting the portable gauge;*

*(V) Storing the portable gauge; and*

*(VI) Following emergency procedures concerning the portable gauge; and*

*(d) Require each proposed radiation safety officer to pass a closed-book examination with a score of not less than 70 percent. The examination must:*

*(1) Consist of at least 25 but not more than 50 questions that place an emphasis on radiation safety as it relates to the storage, use, maintenance and transportation of portable gauges and the location of sealed sources within portable gauges;*

*(2) Be administered by an instructor who meets the qualifications set forth in subsection 3; and*

*(3) Be reviewed with the proposed radiation safety officer immediately following the scoring of the examination to ensure that the proposed radiation safety officer knows the correct answers to any questions incorrectly answered on the examination.*

*3. An instructor is qualified to teach the course and administer the examination described in subsection 2 if he or she:*

*(a) Has:*

*(1) Received a bachelor's degree, master's degree or more advanced degree in the physical or life sciences or in engineering;*

*(2) Successfully completed a course of training in portable gauges provided by the manufacturer for users of portable gauges;*

*(3) Successfully completed a course in radiation safety that consists of at least 8 hours of instruction; and*

*(4) At least 8 hours of hands-on experience with portable gauges; or*

*(b) Has:*

*(1) Successfully completed a course of training in portable gauges provided by the manufacturer for users of portable gauges;*

*(2) Successfully completed a course in radiation safety that consists of at least 40 hours of instruction; and*

*(3) At least 30 hours of hands-on experience with portable gauges.*

**Sec. 9.** *1. A radiation safety officer for a license for by-product material that involves the use of a fixed gauge must have successfully completed:*

*(a) A course of training in fixed gauges provided by the manufacturer or distributor for users of fixed gauges or radiation safety officers; or*

*(b) An equivalent course that meets the criteria set forth in subsection 2.*

*2. An equivalent course must include, without limitation:*

*(a) Classroom training in radiation safety emphasizing practical subjects relating to the safe use of a fixed gauge, including, without limitation, training in:*

*(1) The difference between radiation and radioactive contamination;*

*(2) The difference between internal and external exposure to radiation;*

*(3) The biological effects of radiation;*

*(4) The types and relative hazards of the radioactive material possessed by the licensee;*

*(5) The concept of keeping exposure to radiation as low as is reasonably achievable;*

*(6) The use of the methods involving time, distance and shielding to minimize exposure to radiation; and*

*(7) The location of a sealed source within a fixed gauge;*

*(b) Classroom training in regulatory requirements, including, without limitation, training relating to:*

*(1) The applicable state and federal regulations;*

*(2) The conditions of, amendments to and renewal of a license;*

*(3) The physical location at which radioactive materials are used and stored;*

*(4) The control of and accountability relating to radioactive materials;*

*(5) An annual audit of a radiation safety program;*

*(6) The transfer and disposal of radioactive materials;*

*(7) Recordkeeping concerning fixed gauges;*

*(8) Any reports or studies describing prior accidents or problems involving fixed gauges;*

*(9) Handling incidents involving radiation which compromise safety;*

*(10) Recognizing and ensuring that signs warning of radiation are visible and legible;*

*(11) Licensing and inspection of radioactive materials by the Division;*

*(12) Maintaining complete and accurate information as it relates to a license for by-product material that involves the use of a fixed gauge;*

*(13) The protection of employees who provide information concerning an alleged violation of the Atomic Energy Act of 1954 or the Energy Reorganization Act of 1974; and*

***(14) The meaning of deliberate misconduct as it relates to a license for by-product material that involves the use of a fixed gauge and possible enforcement actions relating to such deliberate misconduct;***

***(c) Practical training in fixed gauge theory and operation, including, without limitation, training in:***

***(1) Operating and emergency procedures;***

***(2) The difference between and requirements related to routine and nonroutine maintenance; and***

***(3) Lockout procedures;***

***(d) On-the-job training under the supervision of a radiation safety officer or a person who is authorized to use and supervise the use of by-product material that involves the use of a fixed gauge which includes, without limitation, hands-on experience performing:***

***(1) Operating procedures;***

***(2) Practical tests which involve following emergency procedures;***

***(3) Routine maintenance; and***

***(4) Lockout procedures; and***

***(e) An evaluation by the licensee or his or her designee concerning whether the proposed radiation safety officer is qualified to work independently with and is knowledgeable of the radiation safety aspects of each type of fixed gauge that is possessed by the licensee. This evaluation may be accomplished by a written or oral examination or by observation.***

***3. The classroom training required by subsection 2 may be in the form of lecture, videotape or self-study.***

*4. In addition to the training required by subsection 1, if the radiation safety program implemented pursuant to section 6 of this regulation involves nonroutine operations, the proposed radiation safety officer must have successfully completed a course of training in nonroutine operations related to fixed gauges provided by the manufacturer or distributor. As used in this subsection, "nonroutine operations" include, without limitation:*

*(a) Repairs involving or potentially affecting components related to radiological safety of the fixed gauge, such as the source, source holder, source drive mechanism, shutter, shutter control or shielding; and*

*(b) Any other activities during which personnel may receive doses of radiation exceeding safe limits including, without limitation, the installation of the fixed gauge, the initial radiation survey of the fixed gauge, a relocation of the fixed gauge and the removal of the fixed gauge from service.*

**Sec. 10.** *1. A radiation safety officer for a license for by-product material that involves the use of a category 1 irradiator must have successfully completed:*

*(a) Training in radiation safety emphasizing practical subjects relating to the safe use of category 1 irradiators, including, without limitation, training in:*

*(1) The difference between radiation and radioactive contamination;*

*(2) The difference between internal and external exposure to radiation;*

*(3) The biological effects of radiation;*

*(4) The types and relative hazards of the radioactive material possessed by the licensee;*

*(5) The concept of keeping exposure to radiation as low as is reasonably achievable;*

*(6) The use of the methods involving time, distance and shielding to minimize exposure to radiation; and*

*(7) The use of radiation detection instruments;*

*(b) Training in regulatory requirements, including, without limitation, training relating to:*

*(1) The conditions of, amendments to and renewal of a license;*

*(2) The physical location at which radioactive materials are used and stored;*

*(3) The control of and accountability relating to radioactive materials;*

*(4) An annual audit of a radiation safety program;*

*(5) The transfer and disposal of radioactive materials;*

*(6) Recordkeeping concerning category 1 irradiators;*

*(7) Handling incidents involving radiation which compromise safety;*

*(8) Licensing and inspection of radioactive materials by the Division;*

*(9) Maintaining complete and accurate information as it relates to a license for by-product material that involves the use of a category 1 irradiator;*

*(10) The protection of employees who provide information concerning an alleged violation of the Atomic Energy Act of 1954 or the Energy Reorganization Act of 1974; and*

*(11) The meaning of deliberate misconduct as it relates to a license for by-product material that involves the use of a category 1 irradiator and possible enforcement actions relating to such deliberate misconduct;*

*(c) Practical training in the theory and operation of each category 1 irradiator possessed by the licensee, including, without limitation, training in:*

*(1) Operating and emergency procedures;*

*(2) The difference between and requirements related to routine and nonroutine maintenance; and*

*(3) Any reports or studies describing prior accidents or problems involving category 1 irradiators; and*

*(d) An evaluation by the licensee or his or her designee concerning whether the proposed radiation safety officer is qualified to work independently with each type of category 1 irradiator that is possessed by the licensee. This evaluation may be accomplished by a written or oral examination or by observation.*

*2. The training required by subsection 1 may be in the form of a lecture, videotape, self-study or hands-on experience.*

**Sec. 11.** *1. A radiation safety officer for a license for by-product material that involves the use of an irradiator, other than a category 1 irradiator, must have:*

*(a) At least 3 months of full-time experience at the irradiator of the applicant for the license or at another irradiator of a similar type, which may include, without limitation, preoperational involvement with the irradiator, including, without limitation, testing while the irradiator is being constructed to ensure that the irradiator meets the design specifications;*

*(b) Except as otherwise provided in subsection 2, successfully completed at least 40 hours of training in radiation safety generally that:*

*(1) Includes, without limitation, training in:*

*(I) Radioactivity and the decay of radioactive material;*

*(II) The interaction of radiation with matter;*

*(III) The biological effects of radiation;*

*(IV) The detection of radiation through the use of radiation detection instruments and dosimeters;*

***(V) The use of basic principles for protection against radiation protection and good safety practices, including, without limitation, the use of the methods involving time, distance and shielding to minimize exposure to radiation; and***

***(VI) The state and federal regulations governing protection against radiation; and***

***(2) Includes a written examination or evaluation of the proposed radiation safety officer's comprehension of the topics;***

***(c) If the previous experience of the radiation safety officer was with an irradiator of a similar type as the irradiator of the applicant for the license or if the radiation safety officer was trained as an irradiation operator but does not have experience working at an irradiator, at least 40 hours of training that includes, without limitation:***

***(1) Training in radiation safety for operating irradiators, including, without limitation, training in:***

***(I) The difference between radiation and radioactive contamination;***

***(II) The difference between internal and external exposure to radiation;***

***(III) The biological effects of radiation, including, without limitation, the reasons for avoiding large doses of radiation;***

***(IV) The units of radiation dose and quantities;***

***(V) The types and relative hazards of the radioactive material possessed by the licensee;***

***(VI) The concept of keeping exposure to radiation as low as is reasonably achievable;***

***(VII) The use of the methods involving time, distance and shielding to minimize exposure to radiation; and***

*(VIII) The use of survey meters and personnel dosimeters; and*

*(2) Training in regulatory requirements, including, without limitation, training relating to:*

*(I) The applicable state and federal regulations, including, without limitation, 10 C.F.R. Parts 20 and 36;*

*(II) The dose limits authorized by the Division pursuant to NAC 459.335;*

*(III) The conditions of, amendments to and renewal of a license;*

*(IV) The physical location at which radioactive materials are used and stored;*

*(V) The control of and accountability relating to radioactive materials;*

*(VI) An annual audit of a radiation safety program;*

*(VII) The transfer and disposal of radioactive materials;*

*(VIII) Recordkeeping concerning irradiators;*

*(IX) Any reports or studies describing prior accidents or problems involving irradiators;*

*(X) Handling incidents involving radiation which compromise safety;*

*(XI) Recognizing and ensuring that signs warning of radiation are visible and legible;*

*(XII) Licensing and inspection of radioactive materials by the Division;*

*(XIII) Maintaining complete and accurate information as it relates to a license for by-product material that involves the use of an irradiator, other than a category 1 irradiator;*

*(XIV) The protection of employees who provide information concerning an alleged violation of the Atomic Energy Act of 1954 or the Energy Reorganization Act of 1974; and*

***(XV) The meaning of deliberate misconduct as it relates to a license for by-product material that involves the use an irradiator, other than a category 1 irradiator, and possible enforcement actions relating to such deliberate misconduct;***

***(3) Practical training in theory and operation for irradiators, including, without limitation, training in:***

***(I) The basic function of an irradiator;***

***(II) The radiation safety features of an irradiator;***

***(III) Operating and emergency procedures which the radiation safety officer is responsible for performing;***

***(IV) The difference between and requirements related to routine and nonroutine maintenance;***

***(V) Lockout procedures; and***

***(VI) The methods used in the design of an irradiator to prevent contamination;***

***(4) On-the-job training under the supervision of a qualified irradiator operator that includes, without limitation, hands-on experience performing:***

***(I) Operating procedures which the radiation safety officer is responsible for performing;***

***(II) Practical tests which involve following emergency procedures;***

***(III) Routine maintenance; and***

***(IV) Lockout procedures; and***

***(5) A requirement that each proposed radiation safety officer pass a closed-book examination with a score of not less than 70 percent. The examination must:***

*(I) Consist of at least 25 but not more than 50 questions that place an emphasis on radiation safety as it relates to irradiator operations and maintenance, operating and emergency procedures which the radiation safety officer is responsible for performing and other operations which are necessary for operating the irradiator safely and without supervision; and*

*(II) Be reviewed with the proposed radiation safety officer immediately following the scoring of the examination to ensure that the proposed radiation safety officer knows the correct answers to any questions incorrectly answered on the examination.*

*2. Formal training in health physics or certification by the American Board of Health Physics may be substituted for the training required by paragraph (b) of subsection 1 upon approval by the Division.*

*3. The training required by paragraph (c) of subsection 1 may be in the form of self-study or directed study.*

**Sec. 12.** *1. A radiation safety officer for a license which authorizes the use of by-product materials in academic research or other research and development must have received:*

*(a) A college degree at the bachelor level or equivalent training and experience in the physical, chemical or biological sciences or in engineering; and*

*(b) Training and experience in radiation protection principles, the characteristics of ionizing radiation, units of radiation dose and quantities, radiation detection instrumentation and biological hazards of exposure to radiation appropriate to the type and forms of radioactive material to be used, applicable state and federal regulations and hands-on use of radioactive materials.*

*2. As determined by the Division, the length of training and experience required by subsection 1:*

*(a) Will depend on the type, form, quantity and proposed use of the radioactive material specified in the application for the license or registration; and*

*(b) Must be sufficient to enable the radiation safety officer to identify and control the anticipated radiation hazards.*

*3. The training required by subsection 1 must be obtained from training courses designed for radiation safety officers and consist of classroom and laboratory training. Such courses may be obtained from academic institutions, commercial radiation safety consulting companies or other appropriate professional organizations.*

**Sec. 13.** *1. A radiation safety officer for a license for by-product material that involves the use of gas chromatographs must have received:*

*(a) A college degree at the bachelor level or equivalent training and experience in the physical, chemical or biological sciences or in engineering; and*

*(b) Training and experience in radiation protection principles, the characteristics of ionizing radiation, units of radiation dose and quantities, radiation detection instrumentation and biological hazards of exposure to radiation appropriate to the type and forms of radioactive material to be used, applicable state and federal regulations and hands-on use of radioactive materials.*

*2. As determined by the Division, the length of training and experience required by subsection 1:*

*(a) Will depend on the type, form, quantity and proposed use of the radioactive material specified in the application for the license or registration; and*

*(b) Must be sufficient to enable the radiation safety officer to identify and control the anticipated radiation hazards.*

*3. The training required by subsection 1 must be obtained from training courses designed for radiation safety officers and consist of classroom and laboratory training. Such courses may be obtained from academic institutions, commercial radiation safety consulting companies or other appropriate professional organizations.*

**Sec. 14.** *1. A radiation safety officer for a license for by-product material that involves the use of analytical x-ray equipment for x-ray fluorescence analysis must have received:*

*(a) A college degree at the bachelor level or equivalent training and experience in the physical, chemical or biological sciences or in engineering; and*

*(b) Training and experience in radiation protection principles, the characteristics of ionizing radiation, units of radiation dose and quantities, radiation detection instrumentation and biological hazards of exposure to radiation appropriate to the type and forms of radioactive material to be used, applicable state and federal regulations and hands-on use of radioactive materials.*

*2. As determined by the Division, the length of training and experience required by subsection 1:*

*(a) Will depend on the type, form, quantity and proposed use of the radioactive material specified in the application for the license or registration; and*

*(b) Must be sufficient to enable the radiation safety officer to identify and control the anticipated radiation hazards.*

*3. The training required by subsection 1 must be obtained from training courses designed for radiation safety officers and consist of classroom and laboratory training. Such courses*

*may be obtained from academic institutions, commercial radiation safety consulting companies or other appropriate professional organizations.*

**Sec. 15.** *A radiation safety officer for a type A specific license of broad scope must have received training and experience that includes, without limitation:*

*1. The types and quantities of radioactive material specified on the application for the license; and*

*2. The performance of the duties required for the position, including, without limitation:*

*(a) Being a member of the radiation safety committee established pursuant to NAC 459.268 and working closely with the radiation safety committee and the management of the applicant for the license in implementing the radiation safety program;*

*(b) Ensuring that radiation safety activities are being performed safely according to policies and procedures and that all regulatory requirements are met; and*

*(c) Performing safety evaluations of proposed uses of radioactive material as described in subparagraph (2) of paragraph (c) of subsection 3 of NAC 459.268 before such proposed uses are reviewed by the radiation safety committee.*

**Sec. 16.** *A radiation safety officer for a type B specific license of broad scope must have received training and experience that includes, without limitation:*

*1. The types and quantities of radioactive material specified on the application for the license; and*

*2. The performance of the duties required for the position, including, without limitation:*

*(a) Working closely with the management of the applicant for the license in implementing the radiation safety program;*

*(b) Ensuring that radiation safety activities are being performed safely according to policies and procedures and that all regulatory requirements are met; and*

*(c) Performing safety evaluations of proposed uses of radioactive material as described in subparagraph (2) of paragraph (b) of subsection 2 of NAC 459.270 and reviewing and approving such proposed uses.*

**Sec. 17.** *1. A radiation safety officer for a license issued pursuant to NAC 459.300 to manufacture, prepare or transfer for commercial distribution radioactive drugs must be qualified by training and experience to perform the duties required for the position. Such training and experience may be met by:*

*(a) Being named as an authorized nuclear pharmacist;*

*(b) Being identified as an authorized user on the license and having experience in the use of the types and quantities of licensed material for which the radiation safety officer has responsibilities; or*

*(c) The classroom and laboratory training and work experience described in subsection 2.*

*2. The required classroom and laboratory training and work experience must be demonstrated by, without limitation:*

*(a) A college degree at the bachelor level or equivalent training and experience in the physical, chemical or biological sciences or in engineering; and*

*(b) Training and experience in radiation protection principles, the characteristics of ionizing radiation, units of radiation dose and quantities, radiation detection instrumentation and biological hazards of exposure to radiation appropriate to the type and forms of radioactive material to be used, applicable state and federal regulations and hands-on use of radioactive materials.*

***3. As determined by the Division, the length of training and experience required by subsection 2:***

***(a) Will depend on the type, form, quantity and proposed use of the radioactive material specified in the application for the license; and***

***(b) Must be sufficient to enable the radiation safety officer to identify and control the anticipated radiation hazards.***

***4. The training required by subsection 2 must be obtained from formal training courses designed for radiation safety officers and consist of classroom and laboratory training. Such courses may be obtained from academic institutions, commercial radiation safety consulting companies or other appropriate professional organizations. Each hour of training may be counted only once.***

***5. On-the-job training must not be counted toward the hours documenting the length of training unless the training is part of a formal training course. In addition to meeting the requirements of subsection 4, for a course to be considered formal training, the course must be a course in which:***

***(a) A detailed description of the content of the course is maintained on file at the sponsoring institution and is available, upon request, to the Division;***

***(b) A permanent record indicating that the proposed radiation safety officer successfully completed the course is kept at the sponsoring institution; and***

***(c) Evidence that the sponsoring institution has examined the proposed radiation safety officer's knowledge of the content of the course is maintained on file at the sponsoring institution and is available, upon request, to the Division. This evidence of the proposed***

*radiation safety officer's overall competency in the course material must include a final grade or percentile.*

**Sec. 18.** *1. Except as otherwise provided in subsection 2, a radiation safety officer for a license that uses sealed sources in well logging must have:*

*(a) At least one year of full-time experience as a logging supervisor; and*

*(b) A thorough knowledge of management policies, company administrative and operating procedures and safety procedures related to protection against radiation exposures.*

*2. In lieu of the requirements set forth in subsection 1, a person may serve as a radiation safety officer if he or she:*

*(a) Is certified by the American Board of Health Physics; or*

*(b) Holds a bachelor's degree, master's degree or more advanced degree in the physical or biological sciences and has at least 1 year of full-time experience conducting a radiation safety program of comparable size and scope as the radiation safety program associated with the applicant's license or registration.*

*3. In addition to implementing and overseeing a radiation safety program as required pursuant to section 6 of this regulation, a radiation safety officer for a license that uses sealed sources in well logging shall:*

*(a) Coordinate the safe use of the radioactive material specified in the application for the license; and*

*(b) Ensure compliance with the applicable requirements of this chapter, chapter 459 of NRS and federal law.*

**Sec. 19.** *1. A radiation safety officer for a registration for use a particle accelerator must have received:*

*(a) A college degree at the bachelor level or equivalent training and experience in the physical, chemical or biological sciences or in engineering; and*

*(b) Training and experience in radiation protection principles, characteristics of ionizing radiation, units of radiation dose and quantities, radiation detection instrumentation and biological hazards of exposure to radiation appropriate to the type and forms of radioactive material to be used, applicable state and federal regulations and handling of radioactive material in relation to production activities, including, without limitation, maintenance and repair of the accelerator.*

*2. As determined by the Division, the length of training and experience required by subsection 1:*

*(a) Will depend on the type, form, quantity and proposed use of the radioactive material specified in the application for registration; and*

*(b) Must be sufficient to enable the radiation safety officer to identify and control the anticipated radiation hazards.*

*3. The training required by subsection 1 must be obtained from training courses designed for radiation safety officers and consist of classroom and laboratory training. Such courses may be obtained from academic institutions, commercial radiation safety consulting companies or other appropriate professional organizations.*

*4. If curie quantities of radioactive material are handled at the particle acceleratory facility in which the radiation safety officer is appointed, the length of training and experience required by paragraph (b) of subsection 1 is satisfied by:*

*(a) Forty hours of training in the safe handling of radioactive material which is specific to the job duties of the radiation safety officer; and*

*(b) One year of full-time experience as a radiation safety officer with similar types, forms, quantities and uses of radioactive material.*

**Sec. 20.** *1. A registrant for a therapeutic x-ray system shall:*

*(a) Notify the Division by telephone not later than the next calendar day after the discovery of a medical event; and*

*(b) Submit a written report to the Division within 15 days after the discovery of the medical event. The written report must include, without limitation:*

*(1) The name of the registrant;*

*(2) The name of the prescribing physician;*

*(3) A brief description of the medical event;*

*(4) An explanation as to why the medical event occurred;*

*(5) The effect, if any, on the person who received the administration of radiation;*

*(6) The actions, if any, that have been taken or are planned to be taken to prevent reocurrence; and*

*(7) Certification that the registrant notified the person who is the subject of the medical event of the medical event as required by subsection 3 or notified that person's responsible relative or guardian as authorized by subsection 5 or, if such notification was not provided, the reason why the notification was not provided.*

*2. The report submitted pursuant to subsection 1 must not contain the name of the person who is the subject of the medical event or any information that could lead to identification of the person.*

*3. Except as otherwise provided in this subsection and subsections 4 and 5, the registrant shall, not later than 24 hours after discovery of the medical event, provide notification of the*

***medical event to the referring physician and to the person who is the subject of the medical event unless the referring physician personally informs the registrant that:***

***(a) He or she will inform the person; or***

***(b) Based on medical judgment, notifying the person would be harmful.***

***4. The registrant is not required to notify the person who is the subject of the medical event without first consulting the referring physician. If the referring physician or the person who is the subject of the medical event cannot be reached within 24 hours after discovery of the medical event, the registrant shall notify the person as soon as possible thereafter. The registrant may not delay any appropriate medical care for the person, including any necessary remedial care as a result of the medical event, because of any delay in notification.***

***5. To meet the requirements of this section, the notification of the person who is the subject of the medical event may be made instead to that person's responsible relative or guardian. If a verbal notification is made, the registrant shall inform the person, or the appropriate responsible relative or guardian, that a written description of the medical event can be obtained from the registrant upon request. The registrant shall provide such a written description if so requested.***

***6. Aside from the notification requirement, nothing in this section affects any rights or duties of registrants and physicians in relation to each other, to persons affected by the medical event or to the responsible relatives or guardians of a person affected by the medical event.***

***7. The registrant shall:***

***(a) Make and retain for not less than 3 years a record of each medical event reported pursuant to this section. The record must include, without limitation:***

***(1) The information required to be included in the written report submitted to the Division pursuant to subparagraphs (1) to (6), inclusive, of paragraph (b) of subsection 1;***

***(2) The name and social security number or other identification number, if one has been assigned, of the person who is the subject of the medical event; and***

***(3) A statement indicating whether the registrant notified the person who is the subject of the medical event of the medical event or notified that person's responsible relative or guardian of the medical event and, if not, whether the failure to notify such persons was based on the guidance of the referring physician.***

***(b) Provide a copy of the record of the medical event to the referring physician, if other than the registrant, not later than 15 days after the discovery of the medical event.***

**Sec. 21.** NAC 459.010 is hereby amended to read as follows:

459.010 As used in NAC 459.010 to 459.950, inclusive, ***and sections 3 to 20, inclusive, of this regulation,*** unless the context otherwise requires, the words and terms defined in NAC 459.012 to 459.116, inclusive, ***and section 3 of this regulation*** have the meanings ascribed to them in those sections.

**Sec. 22.** NAC 459.019 is hereby amended to read as follows:

459.019 "Appendix A" means Appendix A to 10 C.F.R. §§ 20.1001 to 20.2402, inclusive **.** ~~**[**, as those provisions existed on October 13, 1999.**]**~~

**Sec. 23.** NAC 459.0192 is hereby amended to read as follows:

459.0192 "Appendix B" means Appendix B to 10 C.F.R. §§ 20.1001 to 20.2402, inclusive **.** ~~**[**, as those provisions existed on November 30, 2007, with the following revisions to the List of Elements:~~

~~1. "Femium (Fm) with Atomic Number 100" shall be deemed to mean "Fermium (Fm) with Atomic Number 100";~~

~~2. "Hafniim (Hf) with Atomic Number 72" shall be deemed to mean "Hafnium (Hf) with Atomic Number 72"; and~~

~~3. "Tantaium (Ta) with Atomic Number 73" shall be deemed to mean "Tantalum (Ta) with Atomic Number 73."]~~

**Sec. 24.** NAC 459.0194 is hereby amended to read as follows:

459.0194 "Appendix C" means Appendix C to 10 C.F.R. §§ 20.1001 to 20.2402, inclusive **.** ~~[, as those provisions existed on October 13, 1999.]~~

**Sec. 25.** NAC 459.0195 is hereby amended to read as follows:

459.0195 "Appendix E" means Appendix E to 10 C.F.R. §§ 20.1001 to 20.2402, inclusive **.** ~~[, as those provisions existed on November 8, 2006.]~~

**Sec. 26.** NAC 459.0196 is hereby amended to read as follows:

459.0196 "Appendix G" means Appendix G to 10 C.F.R. §§ 20.1001 to 20.2402, inclusive **.** ~~[, as those provisions existed on November 16, 2005.]~~

**Sec. 27.** NAC 459.0507 is hereby amended to read as follows:

459.0507 "Medical event" means ~~[any]~~ ***:***

***1. An event that is the result of intervention of a patient or human research subject in which the administration of radiation results in or will result in unintended permanent functional damage to an organ or a physiological system, as determined by a physician; or***

***2. Any*** event, other than an event that is the result of ~~[patient]~~ intervention ~~[,]~~ ***of a patient or human research subject,*** in which the administration of radiation results in:

~~[1. A dose that differs from the prescribed dose;~~

~~2. The total dose delivered differing from the prescribed dose by 20 percent or more;~~

~~3. The fractionated dose delivered differing from the prescribed dose for a single fraction by 50 percent or more; or~~

~~4.]~~ ***(a)*** An administration of a dose to the wrong person ***, using the wrong mode of treatment*** or at the wrong treatment site ~~[.]~~ ***;***

***(b) The calculated weekly dose administered differing from the weekly prescribed dose by 30 percent or more; or***

***(c) The calculated total dose administered differing from the total prescribed dose by 20 percent or more.***

**Sec. 28.** NAC 459.074 is hereby amended to read as follows:

459.074 "Radiation safety officer" ~~[has the meaning ascribed to it in 10 CF.R. § 35.2, as adopted by reference pursuant to NAC 459.3062.]~~ ***means a person who has been appointed to implement and oversee a radiation safety program for the use of radioactive material specified in an application for a specific license or for registration.***

**Sec. 29.** NAC 459.120 is hereby amended to read as follows:

459.120 1. The Division may, upon application or its own initiative, grant exemptions or exceptions from the requirements of NAC 459.010 to 459.950, inclusive, ***and sections 3 to 20, inclusive, of this regulation,*** as it determines will not result in undue hazard to public health and safety or property.

2. Common and contract carriers, freight forwarders and warehousemen who are subject to the regulations of the United States Department of Transportation or the United States Postal Service, ***Title*** 39 ~~[C.F.R. Parts 14 and 15,]~~ ***of the Code of Federal Regulations,*** are exempt from NAC 459.010 to 459.950, inclusive, ***and sections 3 to 20, inclusive, of this regulation*** to the

extent that they transport or store sources of radiation in the regular course of their carriage for another or store the sources as an incident to such transportation. Private carriers who are subject to the regulations of the United States Department of Transportation are exempt from NAC 459.010 to 459.950, inclusive, ***and sections 3 to 20, inclusive, of this regulation,*** to the extent that they transport sources of radiation. Common, contract and private carriers who are not subject to the regulations of the United States Department of Transportation or the United States Postal Service are subject to applicable sections of NAC 459.010 to 459.950, inclusive ~~[.]~~ ***, and sections 3 to 20, inclusive, of this regulation.***

3. Any contractor or subcontractor of the United States Department of Energy or the Nuclear Regulatory Commission who is in one of the following categories and operating within this State is exempt from NAC 459.010 to 459.950, inclusive, ***and sections 3 to 20, inclusive, of this regulation*** to the extent that, under his or her contract, he or she receives, possesses, uses, transfers or acquires sources of radiation:

(a) Any prime contractor performing work for the United States Department of Energy at sites owned or controlled by the United States Government, transporting sources of radiation to or from such sites, or performing contract services during temporary interruptions of such transportation.

(b) Any prime contractor of the United States Department of Energy performing research in, or development, manufacture, storage, testing or transportation of atomic weapons or components thereof.

(c) Any prime contractor of the United States Department of Energy using or operating a nuclear reactor or other nuclear device in a vehicle or vessel owned by the United States Government.

(d) Any other prime contractor or subcontractor of the United States Department of Energy or of the Nuclear Regulatory Commission when the State and the Nuclear Regulatory Commission jointly determine that:

(1) The exemption of the prime contractor or subcontractor is authorized by law; and

(2) Under the terms of the contract or subcontract there is adequate assurance that the work thereunder can be accomplished without undue risk to public health or safety.

**Sec. 30.** NAC 459.124 is hereby amended to read as follows:

459.124 1. In addition to other records required by NAC 459.010 to 459.950, inclusive, ***and sections 3 to 20, inclusive, of this regulation,*** each licensee and registrant shall maintain records showing his or her receipt, transfer and disposal of all sources of radiation.

2. A licensee authorized to possess, in an unsealed form, radioactive material with a half-life greater than 120 days shall:

(a) Before his or her license terminates, forward to the Division:

(1) All records of licensed radioactive material disposed of by the licensee pursuant to NAC 459.3595 to 459.3615, inclusive, including burials authorized before January 28, 1981; and

(2) All records required by paragraph (d) of subsection 2 of NAC 459.3645; and

(b) If the licensee transfers or assigns any licensed activities to another licensee, transfer to the other licensee:

(1) All records of licensed material disposed of by the licensee pursuant to NAC 459.3595 to 459.3615, inclusive, including burials authorized before January 28, 1981; and

(2) All records required by paragraph (d) of subsection 2 of NAC 459.3645.

3. A licensee to whom records are transferred pursuant to paragraph (b) of subsection 2 shall maintain the records until the termination of his or her license.

4. A licensee whose license is being terminated shall, before his or her license terminates, forward to the Division the records required by subsection ~~[12]~~ ***13*** of NAC 459.1955.

**Sec. 31.** NAC 459.136 is hereby amended to read as follows:

459.136 1. Any licensee or registrant who has reason to believe that an action by the Division or one or more of the Division's staff members pursuant to NAC 459.118 to 459.950, inclusive, concerning him or her has been incorrect or based on inadequate knowledge may, within 10 business days after receiving notice of the action, request an informal discussion with the employee responsible for the action and the immediate supervisor of the employee.

2. If the informal discussion does not resolve the problem, the aggrieved person may, within 10 business days after the date scheduled for the informal discussion, submit a written request to the Bureau for an informal conference. The informal conference must be scheduled for a date, place and time mutually agreed upon by the aggrieved person and the Bureau, except that the informal conference must be held no later than 60 days after the date on which the Bureau received the written request.

3. Except as otherwise provided in subsection 4, the determination of the Bureau resulting from the informal conference cannot be appealed and is the final remedy available to the aggrieved person.

4. An applicant for or holder of a license or registration issued pursuant to NAC 459.118 to 459.950, inclusive, who is aggrieved by the Division taking any disciplinary action pursuant to NRS 459.010 to 459.290, inclusive, ***or section 5 of this regulation*** may appeal that action in accordance with NAC 439.300 to 439.395, inclusive, after exhausting the informal procedures set forth in this section, except that the Bureau may waive the informal procedures, or any portion thereof, by giving written notice to the aggrieved person.

5. As used in this section, “Bureau” means the Bureau of Health Protection Services of the Division or its successor.

**Sec. 32.** NAC 459.150 is hereby amended to read as follows:

459.150 1. NAC 459.150 to 459.166, inclusive, provide for the registration of radiation machines and registration of persons who install or perform service upon radiation machines.

2. ***A radiation machine registered in this State must be maintained in the form in which it was manufactured except that modifications may be made to the radiation machine as authorized by the manufacturer of the radiation machine or the United States Food and Drug Administration.***

***3. All parts of an x-ray system must be maintained on a radiation machine registered in this State in the form in which they were manufactured except that modifications may be made to an x-ray system on such a radiation machine if prior written approval is obtained from the Division.***

***4.*** No person may repair, maintain or install radiation machines unless he or she is registered in conformance with the requirement of NAC 459.150 to 459.166, inclusive.

~~[3.]~~ ***5. A person who is registered with the Division to install, service or repair radiation machines shall not:***

***(a) Install an unregistered radiation machine in a facility for human use; or***

***(b) Make any modifications to a radiation machine which affect the field size or output unless prior approval is obtained from the manufacturer, the United States Food and Drug Administration or the Division. Such approval must be in writing and must be maintained on premises of the registrant of the radiation machine.***

***6.*** A person may operate a radiation machine only if there is a valid registration or the operator is registered with the Division to install, service or repair the machine.

**Sec. 33.** NAC 459.154 is hereby amended to read as follows:

459.154 1. Except as otherwise provided in subsection 2, each person who controls an unregistered, operational radiation machine shall apply to the Division for registration of the machine within 30 days after installing the machine.

2. A person who brings a portable machine into this State for a temporary use of 180 days or less in any calendar year:

(a) Must apply to the Division for registration of the machine for a temporary use at least 3 working days before using it in this State;

(b) Shall comply with all other applicable provisions of NAC 459.010 to 459.950, inclusive ~~[;]~~ ***, and sections 3 to 20, inclusive, of this regulation;***

(c) Shall furnish the Division with any other information it may reasonably request; and

(d) Shall not use the machine in this State more than 180 days per calendar year.

3. The application must be made on the Division's Form NRC-4, Application for Registration of Radiation Machine. A copy of the form may be obtained from the Division. A separate application and registration are required for each control console of a radiation machine.

4. Each application for registration of an X-ray machine must contain a list of the numbers of the X-ray tubes associated with a control panel.

5. Each person who controls a radiation machine must designate on the application form a person where the machine is located who is responsible for protection against radiation.

6. Each person who seeks to engage in the business of installing radiation machines, furnishing services or repairing radiation machines in this State must apply for registration with the Division and receive a certificate of registration before furnishing any services.

7. ***A radiation machine may only by installed by a person who has obtained a certificate of registration from the Division which specifies that the person is authorized to install radiation machines. Within 10 days after installing a radiation machine, the person who installed the machine shall report the fact of the installation to the Division.***

***8.*** Each application for registration by a person to install, service or repair radiation machines must be accompanied by ~~[a nonrefundable]~~ ***an*** annual fee of $140, or the application must not be acted upon by the Division.

**Sec. 34.** NAC 459.161 is hereby amended to read as follows:

459.161 1. An application for the registration of a radiation machine submitted pursuant to NAC 459.154 must be accompanied by a ~~[nonrefundable]~~ fee for each X-ray tube ~~[or]~~ **,** electron source ***or source of ionizing radiation*** which is installed in the radiation machine, as follows:

(a) Medical use, other than mammography, $500.

(b) Veterinary use, $150.

(c) Dental use, $140.

(d) Industrial use, $200.

(e) Academic use, $150.

(f) Accelerator, $550.

2. Except as otherwise provided in subsection 3, if the Division issues a registration certificate pursuant to NAC 459.156, the registrant must, for each year the certificate is valid,

submit to the Division a ~~[nonrefundable]~~ renewal fee in an amount equal to the appropriate fee set forth in subsection 1.

3. 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 shall:

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

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

(1) An application for renewal of the registration;

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

(3) A fee for late payment of $56 per registration.

4. Any application for registration or renewal of registration which is not accompanied by the appropriate fees will not be acted upon by the Division until such fees are paid.

5. An application for a certificate of authorization for a radiation machine must be accompanied by a ~~[nonrefundable]~~ fee for each machine as required pursuant to NAC 457.295.

**Sec. 35.** NAC 459.180 is hereby amended to read as follows:

459.180 1. The provisions of NAC 459.180 to 459.313, inclusive, provide for the licensing of radioactive materials. No person may receive, possess, use, transfer, own, acquire, manufacture or produce radioactive material except as authorized in a specific or general license issued pursuant to NAC 459.180 to 459.313, inclusive, or as otherwise provided in those sections with the following exceptions:

(a) ~~[A specifically licensed government agency or federally recognized Indian tribe that possesses and uses accelerator-produced radioactive material or discrete sources of radium-226 for which a license amendment is required to authorize the activities in this section may continue~~

~~to use such materials for uses allowed pursuant to this section until the date of the Nuclear Regulatory Commission's final licensing determination, so long as the licensee submitted an amendment application on or before June 2, 2008.~~

~~(b) A government agency or federally recognized Indian tribe that possesses and uses accelerator-produced radioactive material or discrete sources of radium-226 for which a specific license is required by this section may continue to use such material for uses allowed pursuant to this section until the date of the Nuclear Regulatory Commission's final licensing determination, so long as the agency or Indian tribe submitted an application for a license authorizing activities involving those materials on or before December 1, 2008.~~

~~(c) Except as otherwise provided in paragraph (a), any other~~ ***A*** licensee who possesses and uses accelerator-produced radioactive material or discrete sources of radium-226 for which a license amendment is required to authorize the activities in this section may continue to use such materials for uses allowed pursuant to this section until the date of the Nuclear Regulatory Commission's final licensing determination, so long as the licensee submitted an amendment application within 6 months after the waiver expiration date of August 7, 2009, or within 6 months after the date of an earlier termination of the waiver as noticed by the Nuclear Regulatory Commission, whichever is earlier.

~~(d) Except as otherwise provided in paragraph (b), any other~~

***(b) A*** person who possesses and uses accelerator-produced radioactive material or discrete sources of radium-226 for which a specific license is required by this section may continue to use such material for uses allowed pursuant to this section until the date of the Nuclear Regulatory Commission's final licensing determination, so long as the person submits a license application within 12 months after the waiver expiration date of August 7, 2009, or within 12 months after

the date of an earlier termination of the waiver as noticed by the Nuclear Regulatory Commission, whichever is earlier.

~~[(e)]~~ ***(c)*** Persons exempt as provided in this section.

~~[(f)]~~ ***(d)*** Persons exempt pursuant to 10 C.F.R. § 150.

2. In addition to the requirements of NAC 459.180 to 459.313, inclusive, ***and sections 4 to 19, inclusive, of this regulation*** 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 459.3801 and 459.3805.

**Sec. 36.** NAC 459.184 is hereby amended to read as follows:

459.184 1. Except as otherwise provided in subsection 3, any person is exempt from NAC 459.180 to 459.313, inclusive, ***and sections 4 to 19, inclusive, of this regulation*** to the extent that he or she receives, possesses, uses, transfers, owns or acquires products or materials containing:

(a) Radioactive material in concentrations not in excess of those listed in NAC 459.186; or

(b) Naturally occurring radioactive material that contains less than 5 picocuries (0.185 becquerels) of radium-226 per gram of material.

2. Any person who possesses by-product material received or acquired before September 25, 1971, under the general license then provided pursuant to 10 C.F.R. § 31.4, or a similar general license of a state, is exempt from the requirements of NAC 459.180 to 459.3184, inclusive, ***and sections 4 to 19, inclusive, of this regulation,*** 459.737 and 459.738 to the extent that the person possesses, uses, transfers or owns such by-product material.

3. A person shall not introduce radioactive material into a product or material knowing or having reason to believe that it will be transferred to persons exempt under subsection 1 or the equivalent regulations of the Nuclear Regulatory Commission or any agreement state, except in accordance with a specific license issued ***by the Nuclear Regulatory Commission*** pursuant to ~~[NAC 459.276]~~ ***10 C.F.R. § 32.11*** or the general licenses provided in NAC 459.210.

4. A manufacturer, processor or producer of a product or material is exempt from the requirements for a license set forth in 10 C.F.R. § 81 and from NAC 459.180 to 459.313, inclusive, ***and sections 4 to 19, inclusive, of this regulation*** to the extent that the person transfers by-product material contained in a product or material:

(a) In concentrations not in excess of those specified in NAC 459.186; and

(b) Introduced into the product or material by a licensee holding a specific license issued by the Division expressly authorizing such introduction.

➥ This exemption does not apply to the transfer of by-product material contained in any food, beverage, cosmetic, drug or other product designed for ingestion or inhalation by, or application to, a human being.

5. Except as otherwise provided in subsections 6 and 7, any person is exempt from the provisions of NAC 459.010 to 459.950, inclusive, ***and sections 3 to 20, inclusive, of this regulation*** to the extent that he or she receives, possesses, uses, transfers, owns or acquires radioactive material in individual quantities each of which does not exceed the applicable quantity set forth in NAC 459.188.

6. The provisions of NAC 459.180 to 459.313, inclusive, ***and sections 4 to 19, inclusive, of this regulation*** do not authorize the production, packaging or repackaging of radioactive material

for purposes of commercial distribution or the incorporation of radioactive material into products intended for commercial distribution.

7. A person shall not, for purposes of commercial distribution, transfer radioactive material in the individual quantities in NAC 459.188, knowing or having reason to believe that such quantities of radioactive material will be transferred to persons exempt under subsections 5 and 6 or the equivalent regulations of the Nuclear Regulatory Commission or any agreement state, except in accordance with a specific license issued by the Nuclear Regulatory Commission pursuant to 10 C.F.R. § 32.18 . ~~[or by the Division pursuant to NAC 459.278.]~~ The license must state that the radioactive material may be transferred by the licensee to persons exempt under subsections 5 and 6 or the equivalent regulations of the Nuclear Regulatory Commission or any agreement state.

8. Except for by-product material combined within a device placed in use before May 3, 1999, or as otherwise authorized by this chapter, no person may combine quantities of by-product material covered by this exemption in such a manner that the aggregate quantity exceeds the limits set forth in NAC 459.188 for purposes of producing an increased radiation level.

**Sec. 37.** NAC 459.1955 is hereby amended to read as follows:

459.1955 1. A plan for financing decommissioning, as described in subsection 10, must be submitted by each applicant for a license authorizing the possession and use of:

(a) Unsealed radioactive materials with a half-life of more than 120 days in quantities that exceed $10^5$ times the applicable quantities set forth in NAC 459.362; or

(b) The involvement of a combination of radionuclides when R divided by $10^5$ is greater than 1.

2. A plan for financing decommissioning, as described in subsection 10, must be submitted by each licensee who is authorized to possess and use, and each applicant for a specific license authorizing the possession and use of:

(a) Sealed sources of radioactive material or plated foils of radioactive material with a half-life of more than 120 days in quantities that exceed $10^{12}$ times the applicable quantities set forth in NAC 459.362; or

(b) The involvement of a combination of isotopes when R divided by $10^{12}$ is greater than 1.

3. Each applicant for a specific license that authorizes the possession and use of radioactive material with a half-life of more than 120 days and in the quantities set forth in subsection 9 must submit:

(a) A plan for financing decommissioning as described in subsection 10; or

(b) A certification which sets forth that financial assurance for decommissioning:

(1) Has been provided in the amount required by subsection 9 using one of the methods set forth in subsection ~~[11;]~~ ***12;*** or

(2) Will be provided after the application has been approved and the license issued, but before the receipt of any licensed material by the licensee.

4. If an applicant:

(a) Defers the execution of the financial instrument until after the license has been issued pursuant to subparagraph (2) of paragraph (b) of subsection 3, the applicant must submit to the Division as part of the certification a signed original of the financial instrument used to comply with subsection ~~[11]~~ ***12*** before the receipt of any licensed material.

(b) Does not defer the execution of the financial instrument until after the license has been issued, the applicant must submit to the Division as part of the certification a signed original of the financial instrument used by the applicant to comply with subsection ~~[11.]~~ ***12.***

5. An applicant for a specific license of the type described in subsection 1 or 3 must submit a plan for financing decommissioning or a certification of financial assurance for decommissioning with his or her application.

6. The holder of a specific license that is issued before January 26, 1999, and:

(a) Of a type described in subsection 1, shall submit a plan for financing decommissioning or a certification of financial assurance for decommissioning in an amount not less than $1,125,000. If a certification of financial assurance is submitted, the licensee shall include a plan for financing decommissioning in an application for renewal of the license.

(b) Of a type described in subsection 3, shall submit a plan for financing decommissioning or a certification of financial assurance for decommissioning.

7. A licensee who has submitted an application for renewal of his or her license before January 26, 1999, in accordance with NAC 459.202, shall:

(a) Provide financial assurance for decommissioning in accordance with subsections 1 and 3; and

(b) Submit a plan for financing decommissioning.

8. Waste collectors and waste processors, as defined in Appendix G, shall:

(a) Provide financial assurance for decommissioning in an amount based on a plan for financing decommissioning as described in subsection 10; and

(b) Submit a plan for financing decommissioning which must include, without limitation:

(1) The cost of disposal of the maximum amount, measured in curies, of radioactive material permitted by the license;

(2) The cost of disposal of the maximum quantity, measured by volume, of radioactive material which could be present at the licensee's facility at any time; and

(3) The cost to remediate the licensee's site to meet the license termination criteria set forth in NAC 459.200.

9. Financial assurance for decommissioning must be provided in accordance with the following amounts:

(a) Not less than $1,125,000 is required if:

(1) The amount of radioactive material is greater than $10^4$, but less than or equal to $10^5$ times the applicable quantities described in NAC 459.362, in unsealed form; or

(2) R, for a combination of radionuclides, divided by $10^4$ is greater than 1 but R divided by $10^5$ is less than or equal to 1.

(b) Not less than $225,000 is required if:

(1) The amount of radioactive material is greater than $10^3$, but less than or equal to $10^4$ times the applicable quantities described in NAC 459.362, in unsealed form; or

(2) R, for a combination of radionuclides, divided by $10^3$ is greater than 1 but R divided by $10^4$ is less than or equal to 1.

(c) Not less than $113,000 is required if:

(1) The amount of radioactive material is greater than $10^{10}$ times the applicable quantities described in NAC 459.362, in sealed sources or plated foils; or

(2) R, for a combination of radionuclides, divided by $10^{10}$ is greater than 1.

10. ~~[The]~~ ***Each*** plan for financing decommissioning must ***be submitted for review and approval by the Division and must*** contain the following:

(a) ~~[An]~~ ***A detailed*** estimate of the costs of decommissioning the facility ~~[based on the decommissioning plan;]~~ ***in an amount which reflects:***

***(1) The cost of an independent vendor who is licensed to perform radiological decommissioning and has the capability and expertise in radiological decommissioning to perform all decommissioning activities;***

***(2) The cost of satisfying the criteria set forth in NAC 459.3178 for unrestricted use, provided that, if the applicant or licensee can demonstrate his or her ability to satisfy the requirements of NAC 459.318, the cost estimate may be based on satisfying the criteria set forth in NAC 459.318;***

***(3) The volume of onsite subsurface material containing residual radioactivity that will require remediation to meet the criteria for license termination; and***

***(4) An adequate contingency factor.***

***(b) Identification of and justification for using the key assumptions contained in the cost estimate for decommissioning the facility;***

~~[(b)]~~ ***(c)*** A description of the method of assuring financing for decommissioning in compliance with subsection ~~[11;~~

~~(c) A schedule for]~~ ***12 including, without limitation, the means for*** adjusting the estimate of costs ~~[, which estimates of costs must be adjusted at least every 3 years,]~~ and associated levels of funding periodically over the life of the facility; ~~[and]~~

(d) A certification by the licensee that financial assurance for decommissioning has been provided in the amount of the cost estimate for decommissioning ***;*** and ~~[a]~~

***(e) A*** signed original of the financial instrument ~~[used]~~ ***obtained*** to satisfy the requirements of subsection ~~[11.]~~ ***12, unless a previously submitted and accepted financial instrument continues to cover the cost estimate for decommissioning.***

11. ***At the time of renewal of the license and at intervals not to exceed 3 years, the plan for financing decommissioning must be resubmitted to the Division with adjustments as necessary to account for changes in costs and the extent of contamination. If the amount of financial assurance will be adjusted downward, this cannot be done until the updated plan for financing decommissioning is approved by the Division. The plan for financing decommissioning must update the information submitted with the original or prior approved plan and must specifically consider the effect of the following events on the cost estimate for decommissioning:***

***(a) Spills of radioactive material producing additional residual radioactivity in onsite subsurface material;***

***(b) An increase in waste inventory above the amount previously estimated;***

***(c) An increase in waste disposal costs above the amount previously estimated;***

***(d) Modifications of the facility;***

***(e) Changes in the limits of radioactive materials which the licensee is authorized to possess and use;***

***(f) Actual costs of remediation if those costs exceed the amount of costs previously estimated;***

***(g) Onsite disposal; and***

***(h) Use of a settling pond.***

***12.*** Financial assurance for decommissioning must be provided by one or more of the following methods:

(a) Prepayment in the form of a deposit of an amount of money in cash or liquid assets that would be sufficient to pay the costs of decommissioning before starting operations at the facility into an account segregated from the assets of the licensee and outside the administrative control of the licensee. Prepayment may be in the form of a trust, escrow account, government fund, certificate of deposit or deposit of government securities.

(b) Provision of a surety that assures that the costs of decommissioning will be paid should the licensee fail to do so. A guarantee of money from a parent company of the licensee for the cost of decommissioning that is based on a financial test may be used if the guarantee and test meet the criteria set forth in subsection ~~[14.]~~ ***15.*** Such a guarantee may not be used in combination with any other method of financing to satisfy the requirements of this subsection. A guarantee of money by the applicant or licensee for the cost of decommissioning that is based on a financial test may be used if the guarantee and test meet the criteria set forth in subsection ~~[14.]~~ ***15.*** Such a guarantee must not be used in combination with any other method of financing to satisfy the requirements of this subsection or if the applicant or licensee has a parent company that holds a majority control of the voting stock of the applicant or licensee. Any surety used to provide financial assurance for decommissioning must contain the following conditions:

(1) The surety must be open-ended or, if written for a specified term, must be renewed automatically unless 90 days or more before the renewal date the issuer notifies the Division, the beneficiary and the licensee of his or her intention not to renew. The surety must provide that the full-face amount will be paid to the beneficiary automatically before the expiration without proof

of forfeiture if the licensee fails to provide a replacement acceptable to the Division within 30 days after receipt of notification of the cancellation.

(2) The surety must be payable to a trust established for the costs of decommissioning the facility. The trustee and trust must be approved by the Division. The Division will approve as a trustee an appropriate agency of the State or Federal Government or an entity which has the authority to act as a trustee and whose trust operations are regulated and examined by an agency of the State or Federal Government.

➥ A licensee shall maintain the surety in effect until the Division has terminated his or her license.

(c) Provision of an external sinking fund in which deposits are made at least annually, coupled with a surety issued in compliance with the provisions of paragraph (b) except that the value of the surety may decrease by the amount being accumulated in the external sinking fund.

(d) If the licensee is a federal, state or local governmental agency, a statement of intent containing an estimate of the costs of decommissioning or an amount required by subsection 9 and an indication that money for decommissioning will be obtained when necessary.

~~[12.]~~ ***13.*** A person licensed pursuant to NAC 459.180 to 459.313, inclusive, ***and sections 4 to 19, inclusive, of this regulation*** shall maintain the following records in an identified location until the site is released for unrestricted use:

(a) Records of spills or other unusual occurrences involving the spread of contamination in and around the facility, equipment or site. Such records must include, without limitation, the name, quantity, form and concentration of a nuclide involved in the spill or unusual occurrence.

(b) Drawings and other documents relating to:

(1) The modification of structures and equipment in restricted areas where radioactive materials are used and stored; and

(2) Locations where it is possible that contamination which is inaccessible has occurred, including, without limitation, areas of seepage into concrete and other porous materials.

(c) A list of all the areas:

(1) Designated and formerly designated as restricted areas;

(2) Outside of restricted areas that require documentation pursuant to paragraph (a);

(3) Outside of restricted areas where waste has been buried; and

(4) Outside of restricted areas which contain material that, if the license expired, the licensee would be required to decontaminate the area to unrestricted release levels or apply for approval for disposal pursuant to NAC 459.3595.

(d) Except for areas containing only sealed sources which have not leaked or where no contamination remains after any leak, or for by-product material having only a half-life of less than 65 days, a list contained in a single document and updated every 2 years which sets forth the following:

(1) All areas designated or formerly designated as restricted areas as defined in 10 C.F.R. § 20.1003, or for requirements before January 1, 1994, 10 C.F.R. § 20.3 as contained in the C.F.R. edition revised as of January 1, 1993;

(2) All areas outside of restricted areas that require documentation pursuant to paragraph (a);

(3) All areas outside of restricted areas where current and previous wastes have been buried as documented pursuant to 10 C.F.R. § 20.2108; and

(4) All areas outside of restricted areas that contain material such that, if the license expired, the licensee would be required to either decontaminate the area to meet the criteria for decommissioning set forth in 10 C.F.R. Part 20, Subpart E, or apply for approval for disposal under 10 C.F.R. § 20.2002.

➥ If records important to the decommissioning of a facility are kept for other purposes, reference to these records and their locations may be used.

~~[13.]~~ ***14.*** Before licensed activities are transferred or assigned pursuant to subsection 2 of NAC 459.198, the licensee must transfer all the records described in paragraphs (a), (b), (c) and (d) of subsection ~~[12]~~ ***13*** to the licensee to whom the activities have been transferred or assigned. Such records become, upon receipt, the responsibility of the licensee to whom the activities have been transferred or assigned and must be retained by that licensee until its license is terminated.

~~[14.]~~ ***15.*** To pass the financial test referred to in subsection ~~[11.]~~ ***12:***

(a) A parent company must have:

(1) Two of the following three ratios:

(I) A ratio of total liabilities to net worth that is less than 2;

(II) A ratio of the sum of net income plus depreciation, depletion and amortization to total liabilities that is more than 0.1; and

(III) A ratio of current assets to current liabilities that is more than 1.5;

(2) Net working capital and tangible net worth that are each at least six times the current cost estimates for decommissioning or, if certification is used, the amount set forth in subsection 9; and

(3) Assets located in the United States that amount to at least 90 percent of the total assets of the parent company or at least six times the cost estimate for decommissioning or, if certification is used, the amount set forth in subsection 9; or

(b) A parent company must have:

(1) A rating for its most recent bond issuance of AAA, AA, A or BBB as issued by Standard and Poor's Ratings Services or a rating of Aaa, Aa, A or Baa as issued by Moody's Investors Service, Inc.;

(2) Tangible net worth of at least six times the current cost estimate for decommissioning, or, if a certification is used, the amount set forth in subsection 9; and

(3) Assets located in the United States that amount to at least 90 percent of the total assets of the parent company or at least six times the cost estimate for decommissioning.

~~[15.]~~ ***16.*** The terms of a guarantee of a parent company must provide that:

(a) The guarantee will remain in force unless the guarantor sends notice of cancellation by certified mail to the licensee and the Division. The guarantee may not be cancelled until 120 days after the date the notice of cancellation is received by both the licensee and the Division, as evidenced by the return receipts.

(b) If the licensee fails to provide alternate financial assurance as specified in this section within 90 days after receipt by the licensee and the Division of a notice of cancellation of the guarantee from the guarantor, the guarantor must provide such alternate financial assurance in the name of the licensee.

(c) The guarantee and financial test provisions set forth in subsection ~~[14]~~ ***15*** must remain in effect until the Division has terminated the license.

(d) If a trust is established for the costs of decommissioning, the trustee and trust must be acceptable to the Division. An acceptable trustee includes an appropriate state or federal agency or an entity that has the authority to act as a trustee and whose trust operations are regulated and examined by a federal or state agency.

~~[16.]~~ ***17.*** A licensee who guarantees the costs of decommissioning must have:

(a) A tangible net worth of at least 10 times the total estimated cost of decommissioning or the current amount required for decommissioning;

(b) Assets located in the United States that amount to at least 90 percent of its total assets or at least 10 times the cost estimate for decommissioning;

(c) A rating for its most recent bond issuance of AAA, AA or A as issued by Standard and Poor's Ratings Services or a rating of Aaa, Aa or A as issued by Moody's Investors Service, Inc.; and

(d) At least one class of equity securities registered pursuant to the Securities Exchange Act of 1934.

~~[17.]~~ ***18.*** A licensee shall ensure that a certified public accountant who is independent of the licensee compares the data used to satisfy the financial test as set forth in subsections ~~[14 and 16.]~~ ***15 and 17.*** The data must be derived from audited, year-end financial statements for the last fiscal year. A licensee shall inform the Division within 90 days after matters which cause the certified public accountant to believe that the data used to satisfy the financial test should be adjusted and that the licensee or parent company, as applicable, can no longer pass the test. After the initial financial test, the licensee or parent company, as applicable, shall repeat the test within 90 days after the close of each fiscal year. If the parent company can no longer pass the test, the licensee shall notify the Division of its intent to establish alternate financial assurance as

specified in this section. The notice must be sent by certified mail within 90 days after the close of the fiscal year. The licensee shall provide alternate financial assurance within 120 days after the close of such fiscal year.

~~[18.]~~ ***19.*** If a bond issuance of the licensee or parent company, as applicable, ceases to be rated in a category of A or above by either Standard and Poor's Ratings Services or Moody's Investors Service, Inc., the licensee shall notify the Division in writing within 20 days after the rating. If the bond issuance ceases to be rated in a category of A or above by both Standard and Poor's Ratings Services and Moody's Investors Service, Inc., the licensee or parent company, as applicable, no longer meets the financial test as set forth in subsection ~~[14.~~ ~~19.]~~ ***15.***

***20.*** The licensee shall provide to the Division a written guarantee or commitment by a corporate officer which provides that the licensee will fund and complete the decommissioning of the facility or, upon issuance of an order by the State Board of Health, the licensee shall establish a trust in the amount of the current cost estimates for decommissioning.

~~[20.]~~ ***21.*** As used in this section:

(a) "External sinking fund" means a fund established and maintained by depositing money periodically in an account segregated from the licensee's assets and outside the licensee's administrative control in which the total amount of money to be accumulated before the termination of the operation is expected is sufficient to pay the costs of decommissioning. The term includes, without limitation, a trust, escrow account, government fund, certificate of deposit or deposit of government securities.

(b) "R" equals the sum of the ratios of the quantity of each radionuclide to the applicable value as set forth in NAC 459.362.

(c) "Surety" includes, without limitation, a trust fund, surety bond, letter of credit, line of credit, insurance, guarantee of performance or, except as otherwise provided in this section, any combination thereof.

**Sec. 38.** NAC 459.198 is hereby amended to read as follows:

459.198 1. Each license issued pursuant to NAC 459.180 to 459.950, inclusive, ***and sections 4 to 20, inclusive, of this regulation*** 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, ***and sections 4 to 20, inclusive, of this regulation,*** 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. ***A person licensed by the Division pursuant to NAC 459.180 to 459.950, inclusive, and sections 4 to 20, inclusive, of this regulation may apply to the Division to transfer his or her license to another person. The application for such a transfer must include, without limitation:***

***(a) The identity and technical qualifications of the proposed transferee;***

***(b) The financial qualifications of the proposed transferee as determined by the Division based on the financial reports or certified financial statements of the proposed transferee; and***

***(c) The information concerning financial assurance for decommissioning required by NAC 459.1955.***

***4.*** Each person licensed by the Division pursuant to NAC 459.180 to 459.950, inclusive, ***and sections 4 to 20, inclusive, of this regulation,*** or each person seeking a license, shall:

(a) Confine his or her 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 or her 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 those 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. The 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. The 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 materials 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.]~~ ***5.*** Each person licensed by the Division pursuant to NAC 459.180 to 459.950, inclusive, ***and sections 4 to 20, inclusive, of this regulation*** who uses a portable gauge shall ***, when the gauge is not under the control and constant surveillance of the licensee,*** use ~~[a]~~ ***:***

***(a) 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.]~~ ***; and***

***(b) A source-locking mechanism to prevent accidental exposure to radiation.***

***6. Each person licensed by the Division pursuant to NAC 459.180 to 459.950, inclusive, and sections 4 to 20, inclusive, of this regulation shall conduct a physical inventory every 6 months to account for all sources of radiation received and possessed under his or her license. The licensee must retain records of the physical inventory for 3 years after the date of the inventory for inspection by the Division. The records of the physical inventory must indicate,***

***without limitation, the quantity and kind of radioactive material, the location of each source of radiation, the model number and the name of the manufacturer of each source of radiation and the date of the inventory.***

***7.*** Each person licensed by the Division pursuant to NAC 459.180 to 459.950, inclusive, ***and sections 4 to 20, inclusive, of this regulation*** who prepares technetium-99m radiopharmaceuticals from molybdenum-99 and technetium-99m generators or who prepares rubidium-82 from strontium-82 and rubidium-82 generators shall:

(a) Test the generator eluates for molybdenum-99 breakthrough or contamination by strontium-82 and strontium-85, respectively, pursuant to 10 C.F.R. § 35.204; ~~[and]~~

(b) Record the results of each test and retain each record for at least 3 years after the record is made ~~[.~~

~~6.]~~ ***; and***

***(c) Report to the Division and to the manufacturer of the generator the levels of molybdenum-99, strontium-82 and strontium-85 that are above the permissible limits set forth in 10 C.F.R. § 35.204.***

***8.*** Each licensee authorized pursuant to NAC 459.236 to produce positron emission tomography radioactive drugs for noncommercial distribution to medical use licensees in its consortium shall:

(a) Satisfy the labeling requirements in paragraph (d) of subsection 1 of NAC 459.300 for each positron emission tomography radioactive drug, transport radiation shield and each syringe, vial or other container used to hold the positron emission tomography radioactive drug;

(b) Possess and use instrumentation to measure the radioactivity of the positron emission tomography radioactive drug and meet the procedures, radioactivity measurement, instrument

test, instrument check and instrument adjustment requirements pursuant to subsection 3 of NAC 459.300;

(c) If the licensee is a pharmacy, ensure that any person who prepares positron emission tomography radioactive drugs:

(1) Is an authorized nuclear pharmacist who meets the requirements of paragraph (b) of subsection 2 of NAC 459.300; or

(2) Is under the supervision of an authorized nuclear pharmacist pursuant to 10 C.F.R. § 35.27; and

(d) If the licensee is a pharmacy that allows a person to work as an authorized nuclear pharmacist, it shall meet the requirements of paragraph (d) of subsection 2 of NAC 459.300.

➥ Any authorization obtained pursuant to NAC 459.236 to produce positron emission tomography radioactive drugs for noncommercial distribution to medical use licensees in a consortium does not relieve the licensee from the requirement to comply with any applicable regulations of the United States Food and Drug Administration, or other federal and state laws or regulations governing radioactive drugs.

**Sec. 39.** NAC 459.1997 is hereby amended to read as follows:

459.1997 ***1.*** The provisions of 10 C.F.R. §§ 71.0(c), 71.1(a), 71.3, 71.4, 71.15, 71.17, ~~[71.19(a), 71.19(b), 71.19(c),]~~ 71.20 to 71.23, inclusive, 71.47, 71.83 to 71.89, inclusive, 71.97, 71.101(a), 71.101(b), 71.101(c), 71.101(g), 71.105, 71.127 to 71.137, inclusive, and Appendix A to Part 71 ~~[, as those provisions existed on November 14, 2007,]~~ are hereby adopted by reference, subject to the following:

~~[1.]~~ ***(a)*** The exclusion of the following definitions from 10 C.F.R. § 71.4:

~~[(a)]~~ ***(1)*** "Close reflection by water";

~~[(b)]~~ ***(2)*** "Licensed material";

~~[(c)]~~ ***(3)*** "Optimum interspersed hydrogenous moderation";

~~[(d)]~~ ***(4)*** "Spent nuclear fuel or spent fuel"; and

~~[(e)]~~ ***(5)*** "State."

~~[2.]~~ ***(b)*** The substitution of the following rule references:

~~[(a)]~~ ***(1)*** "NAC 459.737" for "§ 34.31(b) of this chapter" as found in 10 C.F.R. § 71.101(g);

~~[(b)]~~ ***(2)*** "Subsection 1 of NAC 459.339" for "10 C.F.R § 20.1502";

~~[(c)]~~ ***(3)*** "NAC 459.3062" for "10 C.F.R. Part 35";

~~[(d)]~~ ***(4)*** "Subsection 5 of NAC 459.3585" for "10 C.F.R. § 20.1906(e)";

~~[(e)]~~ ***(5)*** "NAC 459.181" for "10 C.F.R. § 71.5";

~~[(f)]~~ ***(6)*** "10 C.F.R. §§ 71.101(a), 71.101(b), 71.101(c)(1), 71.101(g), 71.105 and 71.127 to 71.137, inclusive," for "subpart H of this part" or "subpart H," except in 10 C.F.R. §§ 71.17(b), 71.20(b), 71.21(b), 71.22(b) and 71.23(b);

~~[(g)]~~ ***(7)*** "10 C.F.R. §§ 71.0(c), 71.1(a), 71.3, 71.4, 71.17(c)(2), 71.20(c)(2), 71.21(d)(2), 71.83 to 71.89, inclusive, 71.97, ***71.101(a),*** 71.101(b), ~~[71.101(c),]~~ ***71.101(c)(1),*** 71.101(g), 71.105 and 71.127 to 71.137, inclusive," for "subparts A, G and H of this part";

~~[(h)]~~ ***(8)*** "10 C.F.R. § 71.47" for "subparts E and F of this part"; and

~~[(i)]~~ ***(9)*** "10 C.F.R. §§ 71.101(a), 71.101(b), 71.101(c)(1), 71.101(g), 71.105 and 71.127 to 71.137, inclusive," for "§§ 71.101 through 71.137."

~~[3.]~~ ***(c)*** The substitution of the following terms:

~~[(a)]~~ ***(1)*** "Division" for:

~~[(1)]~~ ***(I)*** "Commission" in 10 C.F.R. §§ 71.0(c), 71.17(a), 71.20(a), 71.21(a), 71.22(a), 71.23(a) and 71.101(c)(1);

~~[(2)]~~ ***(II)*** "Director, Division of Nuclear Security, Office of Nuclear Security and Incident Response" in 10 C.F.R. §§ 71.97(c)(1) and 71.97(f)(1);

~~[(3)]~~ ***(III)*** "Director, ***Division of Intergovernmental Liaison and Rulemaking,*** Office of ***Federal and*** State ***Materials and Environmental Management*** Programs, U.S. Nuclear Regulatory Commission, Washington, D.C. 20555-0001" in 10 C.F.R. § 71.97(c)(3)(iii); and

~~[(4)]~~ ***(IV)*** "NRC" in 10 C.F.R. § 71.101(f);

~~[(b)]~~ ***(2)*** "The Nuclear Regulatory Commission or an agreement state" for "Commission" in 10 C.F.R. § 71.3;

~~[(c)]~~ ***(3)*** "The Governor of Nevada" for:

~~[(1)]~~ ***(I)*** "The governor of a State" in 10 C.F.R. § 71.97(a);

~~[(2)]~~ ***(II)*** "Each appropriate governor" in 10 C.F.R. § 71.97(c)(1);

~~[(3)]~~ ***(III)*** "The governor" in 10 C.F.R. § 71.97(c)(3);

~~[(4)]~~ ***(IV)*** "The governor of the State" in 10 C.F.R. § 71.97(e);

~~[(5)]~~ ***(V)*** "The governor of each State" in 10 C.F.R. § 71.97(f)(1); and

~~[(6)]~~ ***(VI)*** "A governor" in 10 C.F.R. § 71.97(e);

~~[(d)]~~ ***(4)*** "State of Nevada" for "State" in 10 C.F.R. §§ 71.97(a), 71.97(b)(2) and 71.97(d)(4);

~~[(e)]~~ ***(5)*** "The Governor of Nevada's" for:

~~[(1)]~~ ***(I)*** "The governor's" in 10 C.F.R. §§ 71.97(a), 71.97(c)(3), 71.97(e) and 71.97(f)(1);

~~[(2)]~~ ***(II)*** "Governor's" in 10 C.F.R. §§ 71.97(c)(1) and 71.97(e); and

~~[(3)]~~ ***(III)*** "Governors'" in 10 C.F.R. § 71.97(c)(3)(iii);

~~[(f)]~~ ***(6)*** "Specific or general" for "NRC" in 10 C.F.R. § 71.0(c);

~~[(g)]~~ ***(7)*** "The Division" for "ATTN: Document Control Desk, Director, ***Division of*** Spent Fuel ~~[Project Office,]~~ ***Storage and Transportation,*** Office of Nuclear Material Safety and Safeguards" in 10 C.F.R. § 71.101(c)(1);

~~[(h)]~~ ***(8)*** "Each" for "Using an appropriate method listed in § 71.1(a), each" in 10 C.F.R. § 71.101(c)(1);

~~[(i)]~~ ***(9)*** "The material must be contained in a Type A package meeting the requirements of 49 C.F.R. § 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 C.F.R. 173.417(a)" as found in 10 C.F.R. §§ 71.22(a) and 71.23(a);

~~[(j)]~~ ***(10)*** "Licensee" for "licensee, certificate holder, and applicant for a CoC"; and

~~[(k)]~~ ***(11)*** "Licensee is" for "licensee, certificate holder, and applicant for a CoC are."

***2. A copy of the publication that contains Part 71 of Title 10 of the Code of Federal Regulations may be obtained by mail from the Superintendent of Documents, United States Government Printing Office, P.O. Box 979050, St. Louis, Missouri 63197-9000, or by toll-free telephone at (866) 512-1800, at the price of $64, or free of charge at the Internet address http://www.gpoaccess.gov/cfr/index.html.***

**Sec. 40.** NAC 459.200 is hereby amended to read as follows:

459.200 1. Except as otherwise provided in subsections 2, 3 and 4, a specific license expires at the end of the day on the date of expiration set forth on the license.

2. A specific license for which a licensee has, not less than 30 days before the date of expiration set forth on the license, filed an application for renewal pursuant to NAC 459.202 remains effective until the Division makes a final decision on the application, and the license application will be considered timely. If the decision is to deny the application for renewal, the license expires on the date of the decision or, if the Division specifies a date of expiration in the decision to deny the application for renewal, on the date specified.

3. If the renewal application for a specific license is not received at least 30 days before the date of expiration set forth on the license, the licensee shall:

(a) Pay an expedited review fee of twice the annual fee set forth in NAC 459.310, which, upon submittal, grants the licensee an administrative authorization for the license to remain effective until the Division makes an expedited decision on the application;

(b) Stop all operations involving radioactive materials and place all sources of radiation in storage until they can be transferred to persons authorized to receive them; or

(c) Stop all operations on the expiration date of the license until the Division makes a decision on the application or issues a renewed license.

4. A specific license revoked by the Division expires on the date of the decision of the Division to revoke the license or on the date specified in the decision of the Division to revoke the license.

5. A specific license continues in effect with respect to the possession of radioactive material until the Division notifies the licensee in writing that the license is terminated. During the time the specific license continues in effect, the licensee shall:

(a) Limit actions involving radioactive material to those related to decommissioning; and

(b) Continue to control entry to restricted areas until they are suitable for release so that there is no undue hazard to public health and safety.

6. Except as otherwise provided in subsection 8, a licensee shall notify the Division in writing within 60 days before:

(a) The decision of the licensee to cease permanently its principal activities at the entire site or in a separate building or outdoor area that contains residual radioactivity if the building or outdoor area is unsuitable for release because of an undue hazard to public health and safety;

(b) The end of a 24-month period in which no principal activities have been conducted pursuant to the license; or

(c) The end of a 24-month period in which no principal activities have been conducted in a separate building or outdoor area that contains residual radioactivity and the building or outdoor area is unsuitable for release because of an undue hazard to public health and safety.

7. Coincident with the notification required by subsection 6, the licensee shall maintain in effect all financial assurances for decommissioning established by the licensee pursuant to NAC 459.1955 in conjunction with the issuance or renewal of a license as required by this section. The amount of the financial assurance must be increased, or may be decreased, as appropriate, to meet the detailed cost estimate for decommissioning. After the Division approves the plan for decommissioning, a licensee may reduce the amount of the financial assurance as decommissioning proceeds and radiological contamination is reduced at the site with the approval of the Division.

8. The Division may grant a request to extend the period during which notification is required pursuant to subsection 6 if the Division determines that such an extension is not detrimental to the public health and safety and is otherwise in the public interest. The request

must be submitted not later than 30 days before notification is required pursuant to subsection 6. The schedule for decommissioning may not commence until the Division has made a determination on the request.

9. A plan for decommissioning must be submitted to the Division by the licensee if it is required by a condition of the license or if the procedures for decommissioning have not been approved by the Division and these procedures could increase the potential impacts on the health and safety of workers or the public, including, without limitation, if:

(a) The procedures involve techniques not applied routinely during cleanup or maintenance operations;

(b) The workers would be entering areas not normally occupied where surface contamination and radiation levels are significantly higher than routinely encountered during normal operations;

(c) The procedures could result in a significantly greater airborne concentration of radioactive materials than is present during normal operations; or

(d) The procedures could result in a significantly greater release of radioactive material to the environment than that associated with normal operations.

➥ Such procedures may not be carried out by the licensee without being approved by the Division before they commence.

10. A proposed plan for decommissioning will be approved by the Division if decommissioning will be completed as soon as practical, the health and safety of the workers and the public will be protected and the proposed plan for decommissioning includes:

(a) A description of the conditions of the site, separate building or outdoor area sufficient to evaluate the acceptability of the plan;

(b) A description of the decommissioning activities;

(c) A description of the methods that will be used to ensure the protection of workers and the environment against radiation hazards during decommissioning;

(d) A description of the planned final radiation survey;

(e) An updated and detailed cost estimate for decommissioning, comparison of that estimate with the money set aside for decommissioning and a plan for ensuring the availability of adequate money for completion of decommissioning; and

(f) For a plan for decommissioning in which completion of decommissioning will be later than 24 months after approval of the plan, a justification for the delay based on the criteria set forth in subsection 13.

11. A licensee shall begin decommissioning of the site within 60 days after the plan for decommissioning is approved by the Division.

12. Except as otherwise provided in subsection 13, a licensee:

(a) Shall complete decommissioning of the site, separate building or outdoor area as soon as practicable, but not later than 24 months after decommissioning begins.

(b) Must, if decommissioning involves an entire site, request termination of the license as soon as practicable, but not later than 24 months after decommissioning begins.

13. The Division may approve a request by the licensee for an extension of the period allowed for decommissioning or termination of a license if the Division determines that such an extension is necessary because:

(a) It is not technically feasible to complete decommissioning within 24 months;

(b) There is not sufficient capacity for waste disposal to allow completion of decommissioning within 24 months;

(c) A significant reduction in the volume of wastes requiring disposal will be achieved by allowing short-lived radionuclides to decay;

(d) A significant reduction in radiation exposure to workers can be achieved by allowing short-lived radionuclides to decay; or

(e) There are other site-specific factors that make decommissioning within 24 months undesirable or unfeasible, including, without limitation, the regulatory requirements of other government agencies, lawsuits, activities involving the treatment of groundwater, monitored restoration of natural groundwater, actions that could result in more environmental harm than deferred cleanup and other factors beyond the control of the licensee.

14. As the final step in decommissioning, the licensee shall certify the disposition of all licensed material, including, without limitation, accumulated wastes, by submitting to the Division a completed NRC Form 314 or information that is equivalent to that contained in the completed form and:

(a) Demonstrate that the premises where the licensed activities were carried out satisfy the criteria for decommissioning set forth in NAC 459.316 to 459.3184, inclusive; or

(b) Conduct a radiation survey of the premises and submit to the Division a report of the results of this survey. The radiation survey must demonstrate that the premises are suitable for release and include:

(1) A description of the levels of gamma radiation in units of millirem (millisievert) per hour at 1 meter from surfaces;

(2) A description of the levels of radioactivity, including, without limitation, alpha and beta radiation, in units of:

(I) Microcuries (megabecquerels) per 100 square centimeters, removable and fixed, for surfaces;

(II) Microcuries (megabecquerels) per milliliter for water; and

(III) Picocuries (becquerels) per gram for solids, including, without limitation, soils and concrete; and

(3) A description of the survey instruments used and a statement that each instrument was properly calibrated and tested. The statement must be certified by the person who calibrated and tested the instrument.

15. A specific license, including an expired license, will be terminated by written notice to the licensee that the Division has determined that:

(a) All radioactive material has been disposed of properly;

(b) Reasonable effort has been made by the licensee to eliminate residual radioactive contamination, if present;

(c) All records required to be maintained pursuant to subsection ~~[12]~~ ***13*** of NAC 459.1955 have been received by the Division; and

(d) The radiation survey performed by the licensee or other information submitted by the licensee demonstrates that the premises are suitable for release in accordance with the criteria for decommissioning set forth in NAC 459.316 to 459.3184, inclusive.

**Sec. 41.** NAC 459.202 is hereby amended to read as follows:

459.202 Applications for renewal of specific licenses must be filed in accordance with NAC 459.200 and 459.236 and, except as otherwise provided in NAC 459.203, must be accompanied by the appropriate fee as set forth in NAC 459.310. The application for renewal must be received

by the Division not later than the date on which the license expires. If the application is not received by that date, the licensee must:

1. ***Within 5 days after the license expires, submit to the Division an application for renewal of the license accompanied by a fee that is equal to twice the amount of the appropriate fee set forth in NAC 459.310; or***

***2. Within 30 days after the license expires:***

***(a)*** Stop all operations involving radioactive materials ***;*** and ~~[place]~~

***(b) Place*** all sources of radiation in storage until they can be transferred to persons authorized to receive them ***.*** ~~[; or~~

~~2. Submit to the Division within 5 days after the license expires an application for renewal of the license accompanied by a fee that is equal to twice the amount of the appropriate fee set forth in NAC 459.310.]~~

**Sec. 42.** NAC 459.208 is hereby amended to read as follows:

459.208 1. The terms and conditions of all licenses will be subject to amendment, revision or modification. The license may be suspended or revoked ***pursuant to section 5 of this regulation*** by reason of amendments to chapter 459 of NRS or by reason of regulations or orders issued by the Division.

2. Any license may be revoked, suspended or modified, in whole or in part, for any material false statement in the application or any statement of fact required under the provisions of chapter 459 of NRS or because of conditions revealed by such application or statement of fact or any report, record or inspection or other means which would warrant the Division to refuse to grant a license on an original application, or for violation of, or failure to observe any of the terms and conditions of chapter 459 of NRS, the license, or regulation or order of the Division.

3. Except in cases of willfulness or those in which the public health, interest or safety requires otherwise, no license will be modified, suspended or revoked unless, prior to the institution of proceedings thereof:

(a) Facts or conduct which may warrant such action have been called to the attention of the licensee in writing; and

(b) The licensee has been accorded an opportunity to demonstrate or achieve compliance with all lawful requirements.

4. The Division may terminate a specific license upon a written request submitted by the licensee to the Division.

**Sec. 43.** NAC 459.238 is hereby amended to read as follows:

459.238 1. An application for a license will be approved if the Division determines that:

(a) The applicant is qualified by reason of training and experience to use the material in question for the purpose requested in accordance with the provisions of NAC 459.010 to 459.950, inclusive, ***and sections 3 to 20, inclusive, of this regulation,*** in a manner to minimize danger to public health and safety or property;

(b) The applicant's proposed equipment, facilities and procedures are adequate to minimize danger to public health and safety or property;

(c) The issuance of the license will not be inimical to the health and safety of the public; ~~[and]~~

(d) ***The applicant satisfies the requirements set forth in section 6 of this regulation; and***

***(e)*** The applicant satisfies any applicable special requirements in NAC ~~[459.2434]~~ ***459.236*** to 459.307, inclusive ~~[.]~~ ***, and sections 6 to 19, inclusive, of this regulation.***

2. The Division will deny an application for a license if the Division determines that:

(a) The issuance of the license would be inimical to the health and safety of the public;

(b) The applicant does not satisfy the requirements of paragraph (a), (b) ***,*** ~~[or]~~ (d) ***or (e)*** of subsection 1; or

(c) The applicant has held a license authorizing a similar use of radioactive material issued by the Division or by the appropriate licensing agency in another jurisdiction and the license has either been revoked or the licensee has been cited for a violation, which the Division deems significant, of a regulation relating to matters of health and safety.

**Sec. 44.** NAC 459.268 is hereby amended to read as follows:

459.268 An application for a type A specific license of broad scope will be approved if:

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

2. The applicant has engaged in a reasonable number of activities involving the use of radioactive material; ~~[and]~~

3. The applicant has established administrative controls and provisions relating to organization and management, procedures, recordkeeping, material control and accounting, and management review that are necessary to ensure safe operations, including:

(a) The establishment of a radiation safety committee composed of such persons as a radiation safety officer, a representative of management and persons trained and experienced in the safe use of radioactive material;

(b) The appointment of a radiation safety officer who ~~[is]~~ ***:***

***(1) Is*** qualified by training and experience in radiation protection ~~[and is]~~ ***pursuant to the requirements set forth in section 15 of this regulation;***

***(2) In accordance with section 6 of this regulation, is required to implement and oversee a radiation safety program concerning the type A specific license;***

***(3) Has full access to all activities pursuant to the license involving the use of radioactive material and the authority to terminate any activity relating to the license if such activity is deemed necessary to protect health and minimize danger to public health and safety without consulting the management of the applicant or the radiation safety committee; and***

***(4) Is*** available for advice and assistance on radiation safety matters; and

(c) The establishment of appropriate administrative procedures to ensure:

(1) Control of procurement and use of radioactive material;

(2) Completion of safety evaluations of proposed uses of radioactive material which take into consideration matters such as the adequacy of facilities and equipment, training and experience of the user, and the operating or handling procedures; and

(3) Review, approval and recording by the radiation safety committee of safety evaluations of proposed uses prepared in accordance with subparagraph (2) prior to use of the radioactive material ~~[.]~~ ***; and***

***4. The applicant has submitted a document signed by the management of the applicant which delegates authority from the management to the radiation safety officer.***

**Sec. 45.** NAC 459.270 is hereby amended to read as follows:

459.270 An application for a type B specific license of broad scope will be approved if:

1. The applicant satisfies the general requirements specified in NAC 459.238; ~~[and]~~

2. The applicant has established administrative controls and provisions relating to organization and management, procedures, recordkeeping, material control and accounting and management review that are necessary to ensure safe operations, including:

(a) The appointment of a radiation safety officer who ~~[is]~~ ***:***

***(1) Is*** qualified because of training and experience in radiation protection ~~[and is]~~ ***pursuant to the requirements set forth in section 16 of this regulation;***

***(2) In accordance with section 6 of this regulation, is required to implement and oversee a radiation safety program concerning the type B specific license;***

***(3) Has full access to all activities pursuant to the license involving the use of radioactive material and the authority to terminate any activity relating to the license if such activity is deemed necessary to protect health and minimize danger to public health and safety without consulting the management of the applicant; and***

***(4) Is*** available for advice and assistance on radiation safety matters; and

(b) The establishment of appropriate administrative procedures to ensure:

(1) Control of procurement and use of radioactive material;

(2) Completion of safety evaluations of proposed uses of radioactive material which take into consideration such matters as the adequacy of facilities and equipment, training and experience of the user, and the operating or handling procedures; and

(3) Review, approval and recording by the radiation safety officer of safety evaluation of proposed uses prepared in accordance with subparagraph (2) prior to the use of the radioactive material ~~[.]~~ ***; and***

***3. The applicant has submitted a document signed by the management of the applicant which delegates authority from the management to the radiation safety officer.***

**Sec. 46.** NAC 459.272 is hereby amended to read as follows:

459.272 ***1.*** An application for a type C specific license of broad scope will be approved if:

~~[1.]~~ ***(a)*** The applicant satisfies the general requirements specified in NAC 459.238;

~~[2.]~~ ***(b)*** The applicant submits a statement that radioactive material will be used only by, or under the direct supervision of, persons who have received:

~~[(a)]~~ ***(1)*** A college degree at the bachelor level or equivalent training and experience in the physical or biological sciences or in engineering; ~~[and]~~

~~[(b)]~~ ***(2)*** At least 40 hours of training and experience in the safe handling of radioactive material, the characteristics of ionizing radiation, units of radiation dose and quantities, radiation detection instrumentation and biological hazards of exposure to radiation appropriate to the type and forms of radioactive material to be used; and

~~[3.]~~ ***(c)*** The applicant has established administrative controls and provisions relating to procurement of radioactive material, procedures, recordkeeping, material control and accounting and management review necessary to ensure safe operations.

***2. The applicant may appoint a radiation safety officer to implement and oversee a radiation safety program and to fulfill the duties set forth in paragraph (c) of subsection 1. If a radiation safety officer is so appointed, the radiation safety officer may delegate certain duties associated with managing the radiation safety program, but the radiation safety officer is ultimately responsible for the completion of those duties.***

**Sec. 47.** NAC 459.274 is hereby amended to read as follows:

459.274 Specific licenses of broad scope are subject to the following conditions:

1. Unless specifically authorized, persons licensed pursuant to NAC 459.262 may not:

(a) Conduct tracer studies in the environment involving direct release of radioactive material;

(b) Receive, acquire, own, possess, use or transfer devices containing 100,000 curies or more of radioactive material in sealed sources used for irradiation of materials;

(c) Conduct activities for which a specific license issued by the Division under NAC ~~[459.276]~~ ***459.280*** to 459.307, inclusive, ***and sections 6 to 19, inclusive, of this regulation*** is required; or

(d) Add or cause the addition of radioactive material to any food, beverage, cosmetic, drug or other product designed for ingestion or inhalation by, or application to, a human being.

2. Each type A specific license of broad scope issued under NAC 459.180 to 459.274, inclusive, will be subject to the condition that radioactive material possessed under the license may only be used by, or under the direct supervision of, persons approved by the radiation safety committee of the licensee.

3. Each type B specific license of broad scope issued ~~[under this article]~~ ***pursuant to NAC 459.262 to 459.274, inclusive,*** is subject to the condition that radioactive material possessed under the license may only be used by, or under the direct supervision of, persons approved by the radiation safety officer of the licensee.

4. Each type C specific license of broad scope issued ~~[under this article]~~ ***pursuant to NAC 459.262 to 459.274, inclusive,*** is subject to the condition that radioactive material possessed under the license may only be used by, or under the direct supervision of, persons who satisfy the requirements of NAC 459.272.

**Sec. 48.** NAC 459.287 is hereby amended to read as follows:

459.287 If a person licensed pursuant to NAC 459.282 is required to provide notice of a bankruptcy proceeding pursuant to subsection ~~[3]~~ ***4*** of NAC 459.198, the licensee shall, upon request of the Division, the Nuclear Regulatory Commission or the equivalent agency of an agreement state, provide a record of the final disposition of the bankruptcy proceeding to the requesting agency.

**Sec. 49.** NAC 459.3062 is hereby amended to read as follows:

459.3062 1. The provisions of 10 C.F.R. Part 35 ~~[, as they existed on November 30, 2007,]~~ are hereby adopted by reference, subject to the following:

(a) 10 C.F.R. §§ 35.8, 35.10(a), 35.11(c) ***,*** ~~[(2),]~~ 35.13(a)(1), 35.13(a)(2), 35.13(b)(5), 35.14(a), 35.15(f), 35.57(b)(3), ***35.3045,*** 35.4001 and 35.4002 are not adopted by reference.

(b) Except as otherwise provided in this chapter, the implementation date specified 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 specified 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 specified 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 "subsection 2 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 459.313, 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 Part 170," "10 CFR 170," "10 CFR Part 171" or "10 CFR 171" shall be deemed to mean "NAC 459.310."

(15) "Byproduct material" shall be deemed a reference to "radioactive material."

(16) "Commission" or "NRC" shall be deemed a reference to "Division."

(17) "Commission's regulations," "federal regulations" or "NRC regulations" shall be deemed a reference to "NAC 459.010 to 459.950, inclusive ~~[."]~~ ***, and sections 3 to 20, inclusive, of this regulation."***

(18) "NRC Form 313" shall be deemed a reference to ~~[~~"NRC Form 5," Application~~]~~ ***the application form for a license*** for ***"Medical Use of*** Radioactive ~~[~~Material License, specified~~]~~ ***Materials" prescribed*** by the Division ~~[.]~~ ***and made available on its website.***

(19) "NRC license" shall be deemed a reference to "license issued by the Division pursuant to NAC 459.010 to 459.950, inclusive ~~[."]~~ ***, and sections 3 to 20, inclusive, of this regulation."***

(20) "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."

(21) "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."

(f) The text of 10 C.F.R. § 35.491(b)(3) shall be deemed to read "Has obtained written attestation, signed by a preceptor authorized user who meets the requirements in ***§ 35.57,*** § 35.490 or § 35.491 or equivalent requirements of an Agreement State, 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."

(g) 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 by mail from the Superintendent of Documents, U.S. Government Printing Office, P.O. Box 979050, St. Louis, Missouri 63197-9000, or by toll-free telephone at (866) 512-1800, at a cost of $67, or free of charge at the Internet address **http://www.gpoaccess.gov/cfr/index.html**.

**Sec. 50.** NAC 459.310 is hereby amended to read as follows:

459.310 Except as otherwise provided in NAC 459.203, the Division will not issue a new specific license or a renewed specific license to a person until the appropriate nonrefundable fee has been paid to the Division, as prescribed in the following table:

| Material and use | Fee |
|---|---|
| 1. Special nuclear material: | |
| (a) As sealed source | $2,000 |
| (b) In unsealed form | 2,000 |
| 2. Source materials for other than milling operations | $2,200 |
| 3. By-product material, artificially produced radioactive material and radium: | |
| (a) Manufacturing or distribution, or both | $2,200 |
| (b) Nuclear pharmacy | 6,600 |
| (c) Industrial radiography | 5,500 |
| (d) Category 1 (self-shielded) irradiator | 1,650 |
| ***(e) Irradiator, other than a category 1 irradiator*** | ***1,650*** |
| ~~[(e)]~~ ***(f)*** Academic, broad scope | 8,800 |
| ~~[(f)]~~ ***(g)*** Academic, other research and development | 1,320 |
| ~~[(g)]~~ ***(h)*** Service or laboratory | 1,760 |
| ~~[(h)]~~ ***(i)*** Fixed gauge | 1,100 |
| ~~[(i)]~~ ***(j)*** Gas chromatograph | 496 |
| ~~[(j)]~~ ***(k)*** In vitro | 105 |

~~[(k)]~~ ***(l)*** Portable gauge or X-ray fluorescence analyzer ..... 1,320

~~[(l)]~~ ***(m)*** All other uses of radioactive material except those set forth in subsections 4 to 8, inclusive..... 1,000

4. Well logging..... $3,300

5. Medical use or veterinary use of radioactive material:

(a) Medical use or veterinary use ..... $4,400

(b) General license for in vitro use..... 125

6. Civil defense ..... $276

7. Registration of devices generally licensed pursuant to paragraph (a) of subsection 13 of NAC 459.218..... $250

8. Any use of radioactive material by a person who holds a specific license issued by the Nuclear Regulatory Commission or any agreement state..... See appropriate fee category above

**Sec. 51.** NAC 459.313 is hereby amended to read as follows:

459.313 1. ***Transfers of low-level radioactive waste by any waste generator, waste collector or waste processor who ships low-level radioactive waste either directly or indirectly through a waste collector or waste processor to a licensed low-level radioactive waste land disposal facility are governed by the requirements of this section, NAC 459.8231 and Appendix G.***

***2.*** A licensee who ships radioactive waste intended for ultimate disposal at a licensed land disposal facility must document the information required on the Nuclear Regulatory

Commission's Uniform Low-Level Radioactive Waste Manifest, and transfer the recorded manifest information to the intended consignee in accordance with the provisions of Appendix G.

~~[~~2.~~]~~ ***3.*** Each manifest described in subsection ~~[~~1~~]~~ ***2*** must include a certification by the waste generator as provided in section II of Appendix G.

~~[~~3.~~]~~ ***4.*** 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.~~]~~ ***5.*** A licensee who ships any by-product material specified in subsections 2 and 3 of NAC 459.022, which is intended for disposal at a land disposal facility licensed pursuant to 10 C.F.R. Part 61, shall document the information required on the Nuclear Regulatory Commission's Uniform Low-Level Radioactive Waste Manifest and transfer the recorded information to the intended consignee in accordance with Appendix G.

**Sec. 52.** NAC 459.3174 is hereby amended to read as follows:

459.3174 ***1.*** An applicant for any license issued by the Division pursuant to NAC 459.010 to 459.950, inclusive, ***and sections 3 to 20, inclusive, of this regulation,*** except an applicant for the renewal of a license, must describe in the application how facility design and procedures for operation will:

~~[~~1.~~]~~ ***(a)*** Minimize, to the extent practicable, the:

~~[~~(a)~~]~~ ***(1)*** Contamination of the facility and environment; and

~~[~~(b)~~]~~ ***(2)*** Generation of radioactive waste; and

~~[~~2.~~]~~ ***(b)*** Facilitate eventual decommissioning.

***2. A licensee shall, to the extent practical, conduct operations to minimize the introduction of residual radioactivity into the site, including the subsurface, in accordance with the existing requirements for protection against radiation set forth in NAC 459.321 and radiological criteria for the termination of a license set forth in NAC 459.316 to 459.3184, inclusive.***

**Sec. 53.** NAC 459.318 is hereby amended to read as follows:

459.318 1. The property of a decommissioned facility that is not eligible for release for unrestricted use is eligible for release for restricted use if the licensee:

(a) Demonstrates that further reductions in residual radioactivity necessary to comply with NAC 459.3178:

(1) Would result in net increase in harm to the public or environment; or

(2) Were not being made because the levels of residual radioactivity associated with restricted conditions are as low as is reasonably achievable. ***In determining whether those levels are as low as is reasonably achievable, the licensee shall consider any detriments, including, without limitation, traffic accidents, expected to potentially result from decontamination and waste disposal.***

(b) Establishes that the licensee has provided for institutional controls that:

(1) Are legally enforceable;

(2) Provide reasonable assurance that the average member of the critical group will receive a total effective dose equivalent from residual radioactivity at the site distinguishable from background radiation that does not exceed 25 millirem (0.25 millisievert) per year; and

(3) Will not impose an undue burden on the community to be affected by the decommissioning or any person or institution therein.

(c) Provides, by a method set forth in subsection 4, sufficient financial assurance to enable a third party, including a governmental custodian of the site, to assume and carry out responsibilities for any necessary control and maintenance of the site.

(d) Submits to the Division a decommissioning plan that:

(1) Declares the intent of the licensee to decommission in accordance with NAC 459.1955;

(2) Specifies that the licensee intends to decommission by restricting the use of the site; and

(3) Documents how the advice of persons and institutions in the community that may be affected by the decommissioning has been sought, analyzed and, if appropriate, incorporated into the decommissioning plan.

(e) Provides reasonable assurance that the residual radioactivity at the site distinguished from background radiation has been reduced to levels such that, even in the absence of the institutional controls required by paragraph (b), the average member of the critical group will receive a total effective dose equivalent, from residual radioactivity at the site distinguishable from background radiation, that:

(1) Is as low as is reasonably achievable; and

(2) Except as otherwise provided in subsection 2, does not exceed 100 millirem (1 millisievert) per year.

2. A licensee may satisfy the requirements of subparagraph (2) of paragraph (e) of subsection 1 if the licensee:

(a) Provides reasonable assurance that the average member of the critical group will receive a total effective dose equivalent, from residual radioactivity at the site distinguishable from background radiation, that does not exceed 500 millirem (5 millisieverts) per year;

(b) Demonstrates that reducing residual radioactivity to the level necessary to comply with the 100 millirem (1 millisievert) requirement of subparagraph (2) of paragraph (e) of subsection 1 is not technically feasible, would be prohibitively expensive, or would likely result in net harm to the public or environment;

(c) Makes provisions for durable institutional controls; and

(d) Provides, by a mechanism set forth in subsection 4, sufficient financial assurance to enable a third party, including a governmental custodian of the site:

(1) To carry out periodic rechecks of the site not less frequently than every 5 years to ensure that the institutional controls remain in place as necessary to meet the criteria of paragraph (b) of subsection 1; and

(2) To assume and carry out responsibility for any necessary control and maintenance of those controls.

3. Before a licensee may submit to the Division a decommissioning plan pursuant to subsection 1, the licensee must seek advice from natural persons and institutions in the community who may be affected by the decommissioning concerning whether the licensee's proposed plan of decommissioning satisfies each of the requirements of paragraphs (b) and (c) of subsection 1.

4. A licensee, to satisfy the requirements of this section relating to the provision of financial assurance, may use any of the following methods:

(a) The deposit of an amount of money in cash or liquid assets into ~~[an account]~~ ***a trust*** that is segregated from the assets of the licensee and outside the administrative control of the licensee ~~[as described in paragraph (a) of subsection 11 of NAC 459.1955;~~

~~(b) Provision of a surety, including insurance, or other guarantee, as described in paragraph (b) of subsection 11 of NAC 459.1955;]~~

~~[(c)]~~ ***;***

***(b)*** If the licensee is a federal, state or local governmental entity, a statement of intent as described in paragraph (d) of subsection ~~[11]~~ ***12*** of NAC 459.1955; or

~~[(d)]~~ ***(c)*** If a federal, state or local governmental entity is assuming custody and ownership of the site, any arrangement or mechanism for financial assurance that the governmental entity determines is adequate.

***5. In assessing the adequacy of the amount of money in a trust described in paragraph (a) of subsection 4, the Division shall assume an annual rate of return on investment of 1 percent.***

**Sec. 54.** NAC 459.3182 is hereby amended to read as follows:

459.3182 1. The Division may terminate a license and release the property of a decommissioned facility for restricted or unrestricted use using alternate criteria greater than the dose criterion of 25 millirem (0.25 millisievert) per year set forth in NAC 459.3178 and paragraph (b) of subsection 1 of NAC 459.318 if the licensee:

(a) By submitting an analysis of possible sources of exposure, provides reasonable assurance that:

(1) The public health and safety will continue to be protected; and

(2) It is unlikely that the dose from all artificially created sources combined, other than medical, would be more than the limit of 0.1 rem (1 millisievert) per year set forth in NAC 459.335;

(b) Has employed, to the extent practical, restrictions on site use according to the provisions of NAC 459.318 in minimizing exposures at the site;

(c) Reduces doses to levels that are as low as is reasonably achievable ~~[; and]~~ ***, taking into consideration any detriments, including, without limitation, traffic accidents, expected to potentially result from decontamination and waste disposal;***

(d) ***Has provided sufficient financial assurance in the form of a trust to enable a third party, including a governmental custodian of a site, to assume and carry out responsibilities for any necessary control and maintenance of the site; and***

***(e)*** Submits to the Division a decommissioning plan that:

(1) Declares the intent of the licensee to decommission in accordance with NAC 459.1955;

(2) Specifies that the licensee proposes to decommission pursuant to the alternate criteria provisions of this section; and

(3) Documents how the advice of natural persons and institutions in the community that may be affected by the decommissioning has been sought, analyzed and, if appropriate, incorporated into the decommissioning plan.

2. To satisfy the public comment requirement of subparagraph (3) of paragraph ~~[(d)]~~ ***(e)*** of subsection 1, a licensee shall:

(a) Provide an opportunity for participation by representatives of a broad cross section of community interests;

(b) Provide an opportunity for a comprehensive, collective discussion on the issues by the participants represented; and

(c) Make publicly available a summary of the results of all such discussions, including, without limitation:

(1) A description of the individual viewpoints of the participants on the issues; and

(2) The extent of agreement and disagreement among the participants on the issues.

3. Before the Division terminates a license using the alternate criteria of this section, the Division will consider the recommendations of the staff of the Division concerning any comments provided by the Environmental Protection Agency and any public comments submitted pursuant to NAC 459.3184.

**Sec. 55.** NAC 459.335 is hereby amended to read as follows:

459.335 1. Except as otherwise provided in this section and subsection 2 of NAC 459.321, each licensee and registrant shall conduct operations to ensure that:

(a) The total effective dose equivalent to any member of the public from its licensed or registered operation does not exceed 0.1 rem (1 millisievert) per year, not including the dose contribution from background radiation, any medical administration the member of the public has received, exposure to natural persons who have been administered radioactive material and have been released from the control of a licensee pursuant to 10 C.F.R. § 35.75, voluntary participation in medical research, and the disposal by the licensee of radioactive material into sanitary sewerage in accordance with NAC 459.3605; and

(b) The dose in any unrestricted area from external sources, not including the dose contributions from natural persons who have been administered radioactive material and have

been released from the control of a licensee pursuant to 10 C.F.R. § 35.75, does not exceed 0.002 rem (0.02 millisievert) in any 1 hour.

2. Notwithstanding the provisions of paragraph (a) of subsection 1, a licensee may allow a visitor to a person who cannot be released pursuant to 10 C.F.R. § 35.75 to receive a radiation dose greater than 0.1 rem (1 millisievert) if:

(a) The radiation dose does not exceed 0.5 rem (5 millisieverts); and

(b) Before the visit, ~~[the licensee]~~ ***an authorized user*** has determined that the visit is appropriate.

3. A licensee, a registrant or an applicant for a license or registration may apply to the Division for authorization to operate up to an annual dose limit for a member of the public of 0.5 rem (5 millisieverts) per year. The application must include:

(a) A demonstration of the need for and the expected duration of operations in excess of the limit specified in paragraph (a) of subsection 1;

(b) A description of the program of the licensee or registrant to assess and control the dose within the annual limit of 0.5 rem (5 millisieverts); and

(c) The procedures to be followed to maintain the dose as low as is reasonably achievable.

4. The Division may impose additional restrictions on radiation levels in unrestricted areas and on the total quantity of radionuclides that a licensee may release in effluents in order to restrict the collective dose.

5. In addition to the requirements of this section, a licensee who is subject to the provisions of 40 C.F.R. Part 190 shall comply with the standards set forth therein.

**Sec. 56.** NAC 459.337 is hereby amended to read as follows:

459.337 1. Each licensee and registrant shall make, or cause to be made, surveys ***of areas, including the subsurface,*** that:

(a) Are necessary for the licensee or registrant to comply with NAC 459.010 to 459.950, inclusive ~~[;]~~ ***, and sections 3 to 20, inclusive, of this regulation;*** and

(b) Are necessary under the circumstances to evaluate:

(1) The magnitude and extent of radiation levels;

(2) Concentrations or quantities of ~~[radioactive material;]~~ ***residual radioactivity;*** and

(3) The potential radiological hazards ~~[.]~~ ***of the radiation levels and residual radioactivity detected.***

2. The Division may exempt a licensee or registrant from the requirements of subsection 1 if the Division determines that the exemption will not result in a significant risk to public health and safety.

3. ***Records from surveys describing the location and amount of subsurface residual radioactivity identified at a site must be:***

***(a) Kept with records important to the decommissioning of a facility; and***

***(b) Retained in accordance with the provisions of subsection 13 of NAC 459.1955.***

***4.*** The licensee or registrant shall ensure that instruments and equipment used for quantitative radiation measurements are calibrated for the radiation measured at intervals not to exceed 12 months.

~~[4.]~~ ***5.*** All personnel dosimeters, except for direct and indirect reading pocket ionization chambers and those dosimeters used to measure the dose to any extremity, that require processing to determine the dose of radiation and that are used by licensees and registrants to comply with NAC 459.325, with other applicable provisions of NAC 459.010 to 459.950,

inclusive, ***and sections 3 to 20, inclusive, of this regulation,*** or with conditions specified in a license or registration, must be processed and evaluated by a dosimetry processor who is accredited by the National Voluntary Laboratory Accreditation Program of the National Institute of Standards and Technology for the type of radiation or radiations included in the program that most closely approximate the type of radiation for which the person wearing the dosimeter is monitored.

~~[5.]~~ ***6.*** The licensee or registrant shall ensure that adequate precautions are taken to prevent a deceptive exposure of personnel monitoring equipment.

**Sec. 57.** NAC 459.3585 is hereby amended to read as follows:

459.3585 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 by 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.

**Sec. 58.** NAC 459.3645 is hereby amended to read as follows:

459.3645 1. Each licensee and registrant shall maintain records showing the results of surveys and calibrations required pursuant to NAC 459.337 and 459.3585. ~~[The]~~ ***Except as otherwise provided in subsection 3 of NAC 459.337, the*** licensee or registrant shall retain each such record for at least 3 years after the record is made.

2. A licensee or registrant shall retain each of the following records until the Division authorizes their disposal:

(a) Records of the results of surveys used to determine the dose from external sources of radiation and, in the absence of or in combination with individual monitoring data, in the assessment of individual dose equivalents;

(b) Records of the results of measurements and calculations used to determine individual intakes of radioactive material and used in the assessment of internal doses;

(c) Records showing the results of sampling air and surveys and bioassays required pursuant to subparagraphs (1) and (2) of paragraph (c) of subsection 1 of NAC 459.349; and

(d) Records of the results of measurements and calculations used to evaluate the release of radioactive effluents into the environment.

**Sec. 59.** NAC 459.468 is hereby amended to read as follows:

459.468 "Maximum line current" means the root mean square (rms) current in the supply line of ~~[an X-ray]~~ ***a radiation*** machine operating at its maximum rating.

**Sec. 60.** NAC 459.508 is hereby amended to read as follows:

459.508 "Source-image receptor distance ~~["]~~ ***, " abbreviated as "SID,"*** means the distance from the source to the center of the input surface of the image receptor.

**Sec. 61.** NAC 459.530 is hereby amended to read as follows:

459.530 "Variable aperture beam-limiting device" means a beam-limiting device ***, commonly referred to as an adjustable collimator,*** which has capacity for stepless adjustment of the X-ray field size at a given source-image receptor distance.

**Sec. 62.** NAC 459.552 is hereby amended to read as follows:

459.552 1. The registrant is responsible for the operation of the ~~[X-ray]~~ ***radiation*** machines which he or she has registered with the Division. The registrant shall ensure that the provisions of NAC 459.400 to 459.624, inclusive, ***and section 20 of this regulation*** are met in the operation of the ~~[X-ray]~~ ***radiation*** machine or machines.

2. An X-ray system which does not meet the provisions of NAC 459.400 to 459.624, inclusive, ***and section 20 of this regulation*** must not be operated for diagnostic or therapeutic purposes if the Division prohibits such operation.

3. Persons who will be operating the X-ray system must be adequately instructed in the safe operating procedures and be competent in the safe use of the equipment.

4. ***The registrant shall:***

***(a) Document that each person who will be operating the X-ray system has received the instructions required by subsection 3 and that each person's competency was verified; and***

***(b) Retain that documentation at least until the period of registration of the radiation machine expires.***

***5.*** In the vicinity of each control panel for an X-ray system a chart ***, commonly referred to as a technique chart,*** must be provided, which specifies for all examinations which are performed by that system a listing of information, including but not limited to the following, for each projection within that examination:

(a) Patient's anatomical size versus technique factors to be utilized;

(b) Type of and size of the film or film-screen combination to be used;

(c) Type of grid to be used, if any, and focal distance;

(d) Source to image receptor distance to be used; and

(e) Type and location of placement of gonadal shielding to be used.

~~[5.]~~ ***6.*** Written safety procedures and rules must be provided to each person operating X-ray equipment, including any restrictions of the operating technique required for the safe operation of the particular X-ray system. The operator must be able to demonstrate familiarity with these rules.

**Sec. 63.** NAC 459.554 is hereby amended to read as follows:

459.554 1. Except for patients who cannot be moved out of the room, only the staff and ancillary personnel required for the medical procedure or training may be in the room during the radiographic exposure. Other than the patient being examined:

(a) All persons must be positioned so that no part of the body which is not protected by 0.5 mm lead equivalent will be struck by the useful beam.

(b) Staff and ancillary personnel must be protected from the direct scatter radiation by protective aprons or whole body protective barriers of not less than 0.25 mm lead equivalent.

(c) A patient who cannot be removed from the room must be protected from the direct scatter radiation by a whole body protective barrier of 0.25 mm lead equivalent or be so positioned that the nearest portion of the body is at least 2 meters from both the tube head and the nearest edge of the image receptor.

(d) When a portion of the body of any member of the staff or ancillary personnel is potentially subjected to stray radiation which could result in his or her receiving 10 percent of the maximum permissible dose, as defined in NAC 459.320 to 459.374, inclusive, additional protective devices must be employed.

2. Gonadal shielding of not less than 0.25 mm lead equivalent must be used for potentially procreative patients during radiographic procedures in which the gonads are in the direct or useful beam, except for cases in which this would interfere with the diagnostic procedure.

3. Persons must not be exposed to the useful beam except for the purposes of the healing arts where each exposure has been authorized by a licensed practitioner of the healing arts. This provision specifically prohibits deliberate exposure for the following purposes:

(a) Exposure of a person for training, demonstration or other purposes unless there are also healing arts requirements and proper prescription has been provided.

(b) Exposure of a person for the purpose of healing arts screening without prior written approval of the Division. Screening means an exposure of a person without a prior examination by a licensed practitioner.

4. When a patient or film must be provided with auxiliary support during a radiation exposure:

(a) Mechanical holding devices must be used when the technique permits. The safety rules, required by NAC 459.552 to 459.558, inclusive, must include individual protections where holding devices cannot be utilized;

(b) Written safety procedures required by subsection ~~[5]~~ ***6*** of NAC 459.552 must indicate the requirements for selecting a holder and include the procedure the holder must follow;

(c) The human holder must be protected as required by subsection 1;

(d) No person may be used routinely to hold film or patients;

(e) In those cases where the patient must hold the film, except during intraoral examinations, any portion of the body other than the area of clinical interest struck by the useful beam must be protected by not less than 0.5 mm lead equivalent material; and

(f) Such holding is permitted only in very unusual and rare situations.

***5. As used in this section, "licensed practitioner of the healing arts" means a physician, homeopathic physician, osteopathic physician, licensed veterinarian, dentist, chiropractic***

***physician, practitioner of Oriental medicine or podiatric physician, as those terms are defined or used, respectively, in NRS 630.014, 630A.050, 633.091 or 638.007 or chapter 631, 634, 634A or 635 of NRS.***

**Sec. 64.** NAC 459.556 is hereby amended to read as follows:

459.556 ***1.*** Procedures and auxiliary equipment designed to minimize exposure to the patient and personnel commensurate with obtaining the needed diagnostic information must be utilized, including the following:

~~[1.]~~ ***(a)*** The speed of film or screen and film combinations must be the fastest speed consistent with the diagnostic objective of the examination;

~~[2.]~~ ***(b)*** The radiation exposure to the patient must be the minimum exposure required to produce images of good diagnostic quality; ~~[and~~

~~3. Portable]~~

***(c) Except as otherwise provided in paragraph (d), portable*** or mobile equipment may be used only for ~~[examinations]~~ ***:***

***(1) Examinations*** where it is impractical to transfer the patient to a stationary radiographic installation ~~[.]~~ ***; and***

***(2) Its designed purpose, as specified by the manufacturer; and***

***(d) Portable or mobile equipment may be used in lieu of stationary equipment for a period of not more than 90 days while the facility is awaiting the delivery of new stationary equipment or the repair of registered stationary equipment if the following conditions are satisfied:***

***(1) The portable or mobile equipment has been registered and the appropriate fee has been paid in accordance with NAC 459.154 and 459.161; and***

***(2) The registrant has requested, in writing, and been granted authorization from the Division to use the portable or mobile equipment in lieu of stationary equipment. Such a request must include, without limitation:***

***(I) The date of installation of the portable or mobile equipment; and***

***(II) The expected duration of the use of the portable or mobile equipment; and***

***2. The Division shall grant an extension of an authorization to use portable or mobile equipment in lieu of stationary equipment if the registrant:***

***(a) Requests the extension at least 10 days before the expiration of the original authorization; and***

***(b) Demonstrates that the extension is justified by submitting documentation indicating that the delivery or repair of the stationary equipment was delayed.***

**Sec. 65.** NAC 459.564 is hereby amended to read as follows:

459.564 In addition to other requirements of NAC 459.400 to 459.624, inclusive, ***and section 20 of this regulation,*** all diagnostic X-ray systems must meet the following requirements:

1. The control panel containing the main power switch must bear the warning statement, legible and accessible to view: “WARNING: This X-ray unit may be dangerous to patient and operator unless safe exposure factors and operating instructions are observed.”

2. On battery-powered generators, visual means must be provided on the control panel to indicate whether the battery is in a state of charge adequate for proper operation.

3. The leakage radiation from the diagnostic source assembly measured at a distance of 1 meter in any direction from the source must not exceed 100 milliroentgens in 1 hour when the X-ray tube is operated at its leakage technique factors. Compliance will be determined by

measurements averaged over an area of 100 square centimeters with no linear dimension greater than 20 centimeters.

4. The radiation emitted by a component other than the diagnostic source assembly must not exceed 2 milliroentgens in 1 hour at 5 centimeters from any accessible surface of the component when it is operated in an assembled X-ray system under any conditions for which it was designed. Compliance will be determined by measurements averaged over an area of 100 square centimeters with no linear dimension greater than 20 centimeters.

5. The requisites for quality of the beam ~~[are:~~

~~(a) The half-value layer of the useful beam for a given X-ray tube potential must not be less than the values shown in Table I. If it is necessary to determine the half-value layer at X-ray tube potential which is not listed in Table I, linear interpolation or extrapolation may be made.~~

~~TABLE I~~

| ~~Design operating range (Kilovolts peak)~~ | ~~Measured potential (Kilovolts peak)~~ | ~~Half-value layer (Milli-meters of aluminum)~~ |
|---|---|---|
| ~~Below .....30~~ | | ~~0.3~~ |
| | ~~40~~ | ~~0.4~~ |
| | ~~49~~ | ~~0.5~~ |

~~TABLE I~~

| ~~Design operating range (Kilovolts peak)~~ | ~~Measured potential (Kilovolts peak)~~ | ~~Half-value layer (Milli-meters of aluminum)~~ |
|---|---|---|
| ~~50 to 70~~ | ~~50~~ | ~~1.2~~ |
| | ~~60~~ | ~~1.3~~ |
| | ~~70~~ | ~~1.5~~ |
| ~~Above 70~~ | ~~71~~ | ~~2.1~~ |
| | ~~80~~ | ~~2.3~~ |
| | ~~90~~ | ~~2.5~~ |
| | ~~100~~ | ~~2.7~~ |
| | ~~110~~ | ~~3.0~~ |
| | ~~120~~ | ~~3.2~~ |
| | ~~130~~ | ~~3.5~~ |
| | ~~140~~ | ~~3.8~~ |
| | ~~150~~ | ~~4.1~~ |

(b) The half-value layer criteria will have been met if it can be demonstrated that the aluminum equivalent of the total filtration in the primary beam is not less than that shown in Table II.

TABLE II

Filtration Required vs. Operating Voltage

| Operating Voltage (kVp) | Total Filtration (inherent plus added) (millimeters aluminum equivalent) |
|---|---|
| Below 50 | 0.5 millimeters |
| 50-70 | 1.5 millimeters |
| Above 70 | 2.5 millimeters |

(c) Beryllium window tubes must have a minimum of 0.5 mm aluminum equivalent filtration permanently mounted in the useful beam.

(d) For capacitor energy storage equipment, compliance will be determined with the maximum quantity of charge per exposure.

(e) The required minimal aluminum equivalent filtration must include the filtration contributed by all materials which are always present between the focal spot of the tube and the

~~patient, for example, a tabletop when the tube is mounted under the table and inherent filtration of the tube.]~~ ***must satisfy the requirements set forth in 21 C.F.R. § 1020.30(m)(1) and the table set forth in that provision which is designated as Table 1.***

6. Where two or more radiographic tubes are controlled by one exposure switch, the tube or tubes which have been selected must be clearly indicated before initiation of the exposure. This indication must be on the X-ray control.

7. The tube housing assembly supports must be adjusted so that the tube housing assembly will remain stable during an exposure unless the tube housing movement is a designed function of the X-ray system.

8. The technique factors to be used during an exposure must be indicated before the exposure begins. If automatic exposure controls are used, the technique factors which are set before the exposure must be indicated. On equipment having fixed technique factors, this requirement may be met by permanent markings. Indication of technique factors must be visible from the operator's position except in the case of spot films made by the fluoroscopist.

**Sec. 66.** NAC 459.574 is hereby amended to read as follows:

459.574 1. During fluoroscopy and cinefluorography, X-ray tube potential and current must be continuously indicated.

2. Except as otherwise provided in subsection 3, the source to skin distance must not be less than:

(a) Thirty-eight centimeters on stationary fluoroscopes installed after February 28, 1980;

(b) Thirty-five and five-tenths centimeters on stationary fluoroscopes which are in operation before February 28, 1980;

(c) Thirty centimeters on all mobile fluoroscopes; and

(d) Twenty centimeters for image intensified fluoroscopes used for specific surgical application. The users' operating manual must provide precautionary measures to be followed during the use of this device.

3. A fluoroscopy imaging system, including a small format type and miniature C-arm type, used to perform low power, X-ray image intensified fluoroscopy on extremities must:

(a) Be operated only by a licensed practitioner of the healing arts.

(b) Possess a positive, nonremovable means to ensure a source-skin distance during operation of not less than 9 centimeters, unless a different distance is approved by the Food and Drug Administration.

(c) Be clearly labeled as for use only on extremities.

(d) Bear a certification label that includes:

(1) The statement "This product is in conformity with the performance standards for diagnostic X-ray systems and their major components set forth in 21 C.F.R. § 1020"; and

(2) If the Food and Drug Administration grants a variance from any performance standards for diagnostic X-ray systems and their major components set forth in 21 C.F.R. § 1020, a statement of the variance and the identification number assigned to the variance by the Food and Drug Administration.

(e) Include an operating manual that contains:

(1) Any special instructions that may be necessary because of the unique features of the system, including, without limitation, special instructions concerning exposure rates, safety procedures and precautions; and

(2) Recommended machine settings for representative sample fluoroscopic examinations for which the system is designed, including data on skin and tabletop exposures resulting from these settings.

***4. As used in this section, "licensed practitioner of the healing arts" means a physician, homeopathic physician, osteopathic physician, licensed veterinarian, dentist, chiropractic physician, practitioner of Oriental medicine or podiatric physician, as those terms are defined or used, respectively, in NRS 630.014, 630A.050, 633.091 or 638.007 or chapter 631, 634, 634A or 635 of NRS.***

**Sec. 67.** NAC 459.580 is hereby amended to read as follows:

459.580 1. In addition to the provisions of NAC 459.552 to 459.558, inclusive, and 459.564, these requirements apply to X-ray equipment and associated facilities used for dental radiography. The criteria for extraoral dental radiographic systems are covered in NAC 459.616 to 459.624, inclusive.

2. ***Intraoral dental radiographic machines may be used only for intraoral dental radiography.***

***3.*** X-ray systems designed for use with an intraoral image receptor must be provided with means to limit source-to-skin distance of not less than 18 centimeters.

~~[3.]~~ ***4.*** Radiographic systems which are designed for use with an intraoral image receptor must be provided with means to limit the X-ray beam so that:

(a) If the minimum source-to-skin distance is 18 centimeters or more, the X-ray field at the minimum source-to-skin distance is containable in a circle having a diameter of no more than 7 centimeters; and

(b) If the minimum source-to-skin distance is less than 18 centimeters, the X-ray field at the minimum source-to-skin distance is containable in a circle having a diameter of no more than 6 centimeters.

~~[4.]~~ ***5.*** A means must be provided to terminate the exposure at a preset time interval, a preset product of current and time, a preset number of pulses, or a preset radiation exposure to the image receptor. In addition:

(a) Termination of exposure must cause automatic resetting of the timer to its initial setting or to zero; and

(b) It must not be possible to make an exposure when the timer is set to a zero or off position if either position is provided.

~~[5.]~~ ***6.*** When four timer tests taken at identical timer settings equal 0.5 seconds or less, the average time period (T) must be greater than or equal to five times the difference between the maximum period (T max) and the minimum period (T min) in accordance with the formula: T 5 (T max-T min).

~~[6.]~~ ***7.*** Deviation of measured technique factors from indicated values of kVp and exposure time must not exceed the limits specified for that system by its manufacturer. In the absence of the manufacturer's specifications, the deviation must not exceed 10 percent of the indicated value for kVp and 20 percent for exposure. All timers must be accurate to within ±20 percent of the selected value.

~~[7.]~~ ***8.*** A control must be incorporated into each X-ray system so that an exposure can be terminated at any time, except for exposures of one-half second or less. The control switch must be of the dead-man type.

~~[8.]~~ ***9.*** Each X-ray control must be located to meet the following criteria:

(a) Each installation must be provided with a protective barrier for the operator or must be so arranged that the operator can stand at least 6 feet from the patient and well away from the useful beam; and

(b) The X-ray control must provide visual indication observable at or from the operator's protected position whenever X rays are produced. In addition, a signal audible to the operator must indicate that the exposure has terminated.

~~[9.]~~ ***10.*** The exposure produced must be reproducible to within the following criteria: When all technique factors are held constant, the coefficient of variation must not exceed 0.10. This requirement is met if, when four exposures at identical technique factors are made, the value of the average exposure (E) is greater than or equal to five times the difference between the maximum exposure (E max) and the minimum exposure (E min) in accordance with the formula: E 5 (E max-E min).

~~[10.]~~ ***11.*** Patient and film holding devices must be used when the techniques permit.

~~[11.]~~ ***12.*** Neither the tube housing nor the position indicating device may be handheld during an exposure.

~~[12.]~~ ***13.*** The X-ray system must be arranged and operated in such a manner that the useful beam at the patient's skin does not exceed the dimensions specified in subsection ~~[3.]~~ ***4.***

~~[13.]~~ ***14.*** Dental fluoroscopy without image intensification must not be used.

~~[14.]~~ ***15.*** Each patient undergoing dental radiography must be draped with a protective apron of not less than 0.25 millimeters lead-equivalent to cover the gonadal area.

~~[15.]~~ ***16.*** Dental X-ray machines with a nominal fixed kVp of less than 50 kVp must not be used to make diagnostic dental radiographs of humans.

**Sec. 68.** NAC 459.592 is hereby amended to read as follows:

459.592 1. All new facilities and existing facilities not previously surveyed must have a radiation protection survey made by, or under the direction of, a qualified expert. This survey must also be done after any change in the facility which might produce a radiation hazard. The expert shall report his or her findings, in writing, to the person in charge of the facility and a copy of the report must be transmitted by the registrant to the Division within 30 days.

2. The radiation output of each therapeutic ~~[X-ray]~~ ***radiation*** machine must be calibrated by, or under the direction of, a qualified expert who is physically present at the facility during the calibration procedure. The calibration must be repeated after any change in, or replacement of, components of the X-ray generating equipment which could cause a change in X-ray output. Calibration of the therapy beam must be performed with a measuring instrument the calibration of which is directly traceable to national standards of exposure or absorbed dose and which has been calibrated within the preceding year. Records of the calibrations must be provided to and maintained by the registrant. In addition:

(a) Each therapeutic ~~[X-ray]~~ ***radiation*** machine must have the calibrations repeated at time intervals not exceeding 1 year. The calibration must include at least the following determinations:

(1) The accurate determination of the air dose rate or the dose rate in a suitable phantom, as appropriate, for a sufficient number of operating parameters for each effective energy to permit the determination of the dose received by the patient;

(2) Verification that the equipment is operating in accordance with the design specifications concerning the congruence between the radiation field and light localizer, when a localizer is used, and for beam flatness and symmetry at the specified depths;

(3) The effective energy, for example, half-value layer when appropriate, for every combination of kVp and filter used for radiation therapy;

(4) The uniformity of the radiation field and its dependence upon the direction of the useful beam; and

(5) The calibration determinations must be provided in sufficient detail so that the absorbed dose in rads to tissue adjacent to, as well as in the useful beam, may be calculated to within ±5 percent of the intended absorbed dose.

(b) Therapeutic X-ray systems capable of operation at greater than 150 kVp must, in addition to the annual calibration required in paragraph (a) have spot checks performed which meet the following criteria:

(1) A spot check must be made at least monthly or after 50 operating hours, whichever is shorter, and must include carefully selected representative or indicative measurements which will demonstrate the consistency of relevant machine operating characteristics or the lack of such characteristics.

(2) The spot-check methods must be in writing and have been designed by a qualified expert. Spot checks must include verification of continued congruency between the radiation field and localizing device where an optical field illuminator is used.

(3) Spot checks which are erratic or inconsistent with calibration data must be investigated promptly.

(4) For machines in which beam quality may vary significantly, spot checks must include beam quality checks.

(5) Whenever a spot check indicates a significant change, as specified in the qualified expert's spot check design, in the operating characteristics of a machine, the machine must be recalibrated as required in paragraph (a).

(6) A log must be kept of all spot-check measurements.

(c) In the therapeutic application of X-ray equipment constructed with beryllium or other low-filtration windows, the registrant must ensure that the unfiltered radiation reaches only the part intended and that the useful beam port is blocked at all times except when actually being used.

(d) Therapeutic ~~[X-ray]~~ ***radiation*** machines must not be left unattended unless the locking device, required by paragraph (e) of subsection 4 of NAC 459.588, is set to prevent activation of the useful beam.

(e) Except as provided in paragraph (f) of subsection 4 of NAC 459.554, no person other than the patient may be in the treatment room during exposures unless he or she is protected by a barrier sufficient to meet the requirements of NAC 459.325, and no person other than the patient may be in the treatment room when the kVp exceeds 150 during exposures except in emergency situations.

(f) The tube housing assembly must not be held by anyone during exposures.

(g) When a patient must be held in position for radiation therapy, mechanical restraining devices must be used.

**Sec. 69.** NAC 459.5924 is hereby amended to read as follows:

459.5924 1. A registrant for any therapeutic X-ray system shall require a radiation safety officer to:

(a) Have completed specific training on the system provided by the manufacturer and approved by the Division;

(b) Be an authorized user or authorized medical physicist for electronic brachytherapy;

(c) Be certified by:

(1) The American Board of Health Physics in Comprehensive Health Physics;

(2) The American Board of Radiology in Diagnostic Radiologic Physics, Therapeutic Radiological Physics or Medical Nuclear Physics ~~[;]~~ ***, or possess another certificate issued by the American Board of Radiology that the Division deems sufficient;***

(3) The American Board of Nuclear Medicine;

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

(5) The American Board of Medical Physics; or

(d) Have completed classroom and laboratory training, including, without limitation:

(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 a radiation safety officer.

2. A radiation safety officer shall:

(a) Implement ***and oversee*** a radiation safety program in the facility;

(b) Ensure that radiation safety activities are performed in accordance with approved procedures and regulatory requirements in the daily operation of a therapeutic X-ray system;

(c) Promptly investigate and implement corrective actions when:

(1) An incident which compromises safety occurs;

(2) A reportable event occurs; or

(3) An event occurs which deviates from approved radiation safety practices;

(d) Prepare a written report of any investigation conducted pursuant to paragraph (c) and the corrective action taken;

(e) Carry out written policies and procedures for:

(1) The safe use of a therapeutic X-ray system;

(2) The performance of radiation surveys as necessary;

(3) The performance of checks on survey instruments and other safety equipment; ~~[and]~~

(4) The training of personnel who frequent or work in areas where radiation is present; ***and***

***(5) Medical events;***

(f) Keep on file:

(1) A copy of all records and reports required by the Division;

(2) A copy of NAC 459.010 to 459.950, inclusive ~~[,]~~ ***and sections 3 to 20, inclusive, of this regulation;***

(3) A copy of each registration correspondence with the Division; ~~[and]~~

(4) The written policies and procedures required by this section; and

***(5) A copy of all records of medical events; and***

(g) Review the occupational radiation exposure of all personnel working with X-ray systems at least once every 3 months.

3. The training and experience in subsection 1 must be obtained within the 7 years immediately preceding the date of the application, or the person must have related continuing education experience in the same type of radiation therapy on an annual basis.

4. The registrant shall retain all records of:

(a) Annual training for at least 3 years; and

(b) Initial training until the Division authorizes the disposal of the records.

~~[5. As used in this section, "radiation safety officer" does not include a radiation safety officer as the term is defined in NAC 459.074.]~~

**Sec. 70.** NAC 459.5926 is hereby amended to read as follows:

459.5926 1. A therapeutic X-ray system must not be used for the irradiation of patients unless the facility complies with the criteria of the United States Food and Drug Administration for systems approved for human use.

2. When not in use, the therapeutic X-ray system must be secured and unauthorized use or access prevented.

3. When a patient must be held in position for radiation therapy, mechanical supporting or restraining devices must be used.

4. A copy of the current operating and emergency procedures must be kept in a visible place in the treatment room.

5. Except for the patient, a person must not be exposed to radiation during the treatment and the facility must use portable shielding to reduce the occupational dose.

6. A registrant shall:

(a) Notify the radiation safety officer specified in NAC 459.5924, or the officer's designee, and an authorized user as soon as practicable, if a patient or human research subject has a medical emergency ~~[and]~~ ***or*** dies;

(b) Allow a person in the treatment room during treatment only after obtaining the approval of the authorized user, the radiation safety officer specified in NAC 459.5924 or the authorized medical physicist for electronic brachytherapy;

(c) Prevent the operation of more than one device which produces radiation in a treatment room; and

(d) Develop, implement and maintain written procedures for responding to a situation in which an operator is unable to complete the treatment in compliance with the written directive. The procedures must include, without limitation:

(1) Instructions for responding to equipment failures and the names of the persons who are responsible for carrying out any corrective actions;

(2) The process for restricting access to and marking the treatment area to minimize the risk of inadvertent exposure to radiation; and

(3) The names and telephone numbers of the authorized users, the authorized medical physicist for electronic brachytherapy and the radiation safety officer specified in NAC 459.5924 who must be contacted if the system operates abnormally.

**Sec. 71.** NAC 459.610 is hereby amended to read as follows:

459.610 1. All new facilities and existing facilities not previously surveyed must have a survey of radiation protection made by, or under the direction of, a qualified expert. This survey must also be done after any change in the facility or equipment which might cause a significant increase in radiation hazard.

2. The expert must report his or her findings in writing to the person in charge of the facility, and a copy of the report must be transmitted by the registrant to the Division.

3. The survey and report must indicate all instances where, in the opinion of the qualified expert, the installation is in violation of any applicable regulation for protection against radiation and must cite the sections violated.

4. No person other than the patient may be in the treatment room during treatment. When a patient must be held in position for radiation therapy, mechanical supporting or restraining devices must be used.

5. The output of each therapeutic ~~[X-ray]~~ ***radiation*** machine must be calibrated by a qualified expert, before the machine is first used for medical purposes. Calibrations must be repeated at least once every 12 months and after any change which might significantly increase radiation hazards. Records of calibrations must be provided to and maintained by the registrant. The calibration must include at least the following determinations:

(a) Verification that the equipment is operating in compliance with the design specifications concerning the light localizer, the side light and backpointer alignment with the isocenter, when applicable, variation in the axis of rotation for the table, gantry and jaw system and beam flatness and symmetry at the specified depths.

(b) The exposure rate or dose rate for the range and field sizes used and for each effective energy and for each treatment distance used for radiation therapy.

(c) The effective energy, for example, half-value layer when appropriate, for every combination of kVp and filter used for radiation therapy.

(d) The congruence between the radiation field and the field indicated by the localizing device when localizing devices are used for radiation therapy.

(e) The uniformity of the radiation field and its dependence upon the direction of the useful beam.

(f) The calibration determinations must be provided in sufficient detail so that the absorbed dose in rads to tissue adjacent to, as well as in the useful beam, may be calculated to within ±5 percent of the intended absorbed dose.

**Sec. 72.** NAC 459.614 is hereby amended to read as follows:

459.614 1. The protective tube housing must be of the diagnostic type.

2. Diaphragms or cones must be provided for collimating the useful beam to the area of clinical interest and must provide the same degree of protection as is required of the housing.

3. The total filtration permanently in the useful beam must not be less than 0.5 millimeters aluminum equivalent for machines operating up to 50 kVp, 1.5 millimeters aluminum equivalent for machines operating between 50-70 kVp, and 2.5 millimeters aluminum equivalent for machines operating above 70 kVp.

4. A device must be provided to terminate the exposure after a preset time or exposure.

5. A dead-man type of exposure switch must be provided together with an electrical cord of sufficient length so that the operator can stand out of the useful beam and at least 6 feet from the animal during all X-ray exposures.

6. All wall, ceiling and floor areas must be equivalent to or provided with applicable protective barriers as required in NAC 459.325, 459.331 and 459.335.

7. The operator shall stand well away from the useful beam and the animal during radiographic exposures.

8. No person other than the operator may be in the X-ray room while exposures are being made unless the person’s assistance is required.

9. When an animal must be held in position during radiography, mechanical supporting or restraining devices should be used. If the animal must be held by a person, the person must be protected with appropriate shielding devices, such as protective gloves and apron, and he or she must be positioned so that no part of his or her body will be struck by the useful beam. The exposure of any person used for this purpose must be monitored and permanently recorded.

***10. The degree of accuracy of:***

***(a) The indicated value of kVp of an x-ray system used for veterinary medicine must be within 10 percent when measured or the limits set by the manufacturer for that x-ray system if those limits specify otherwise;***

***(b) The timer of an x-ray system used for veterinary medicine must be within 10 percent when measured or the limits set by the manufacturer for that x-ray system if those limits specify otherwise; and***

***(c) An indicator of the field size which measures in inches or centimeters on a variable aperture beam-limiting device of an x-ray system used for veterinary medicine equipped with such an indicator must be within 2 percent of the source-image receptor distance when measured or, if a variable aperture beam-limiting device of an x-ray system used for veterinary medicine is not equipped with such an indicator, the x-ray field must be aligned with the center of the beam axis and the adjustable field size must be operable.***

***11. An x-ray system that was previously approved and used for human use may be used for veterinary medicine if the x-ray system continues to comply with the criteria of the United States Food and Drug Administration for systems approved for human use.***

**Sec. 73.** NAC 459.618 is hereby amended to read as follows:

459.618 1. A means must be provided for stepless adjustment of the size of the X-ray field.

2. A means must be provided for visually defining the perimeter of the X-ray field. The total misalignment of the edges of the visually defined field with the respective edges of the X-ray field along either the length or width of the visually defined field must not exceed 2 percent of the distance from the source to the center of the visually defined field when the surface upon which it appears is perpendicular to the axis of the X-ray beam.

3. The Division may grant an exemption from subsections 1 and 2 for an uncertified X-ray system if the registrant makes a written application for the exemption and in his or her application demonstrates that:

(a) It is impractical to comply with subsections 1 and 2; and

(b) The purpose of NAC 459.400 to 459.624, inclusive, ***and section 20 of this regulation*** will be met by other means.

4. All stationary general purpose X-ray systems must meet the following additional requirements:

(a) The beam-limiting device must numerically indicate the field size in the plane of the image receptor to which it is adjusted;

(b) Indication of field size dimensions and source-image receptor distances must be specified in inches or centimeters, or both, and must be such that aperture adjustments result in X-ray field dimensions in the plane of the image receptor which correspond to those of the image receptor to within 2 percent of the source-image receptor distance when the beam axis is perpendicular to the plane of the image receptor; and

(c) A means must be provided to indicate when the axis of the X-ray beam is perpendicular to the plane of the image receptor, to align the center X-ray field with respect to the center of the image receptor to within 2 percent of the source-image receptor distance, and to indicate the source-image receptor distance to within 2 percent.

5. Radiographic equipment designed for only one image receptor size at a fixed source-image receptor distance must be provided with means to limit the field at the plane of the image receptor to dimensions no greater than those of the image receptor, and to align the center of the X-ray field with the center of the image receptor to within 2 percent of the source-image receptor distance.

***6. All radiographic equipment must:***

***(a) Only be used for its designed purpose, as specified by the manufacturer; and***

***(b) Be maintained and serviced in accordance with the manufacturer's recommendations unless there is a documented change to the maintenance and service requirements by the manufacturer or the radiographic equipment is certified and labeled in accordance with 21 C.F.R. §§1010.1 to 1010.5, inclusive, and 21 C.F.R. § 1020.31.***

**Sec. 74.** NAC 459.620 is hereby amended to read as follows:

459.620 For special purpose X-ray systems:

1. A means must be provided to limit the X-ray field in the plane of the image receptor so that the ***X-ray*** field ~~[does not exceed each dimension of the image receptor by more than]~~ ***is within*** 2 percent of the source-image receptor distance ***in each dimension of the X-ray field*** when the axis of the X-ray beam is perpendicular to the plane of the image receptor.

2. A means must be provided to align the center of the X-ray field with the center of the image receptor to within 2 percent of the source-image receptor distance.

3. Subsections 1 and 2 may be met with a system that meets the requirements for a general purpose X-ray system as specified in NAC 459.618, or, when alignment means are also provided, may be met with either:

(a) An assortment of removable, fixed-aperture, beam-limiting devices sufficient to meet the requirement for each combination of image receptor size and source-image receptor distance for which the unit is designed with each such device having clear and permanent markings to indicate the image receptor size and source-image receptor distance for which it is designed; or

(b) A beam-limiting device having multiple fixed apertures sufficient to meet the requirement for each combination of image receptor size and source-image receptor distance for which the unit is designed. Permanent, clearly legible markings must indicate the image receptor size and source-image receptor distance for which each aperture is designed and indicate which aperture is in position for use.

**Sec. 75.** NAC 459.7033 is hereby amended to read as follows:

459.7033 "X-ray industrial radiography" means the examination of the macroscopic structure of materials by nondestructive methods utilizing X-ray sources of radiation. ***The term includes, without limitation, such an examination by an x-ray system which is designed as a screening system for the security of personnel and is used to detect contraband and weapons.***

**Sec. 76.** NAC 459.7234 is hereby amended to read as follows:

459.7234 1. A registrant that engages in the practice of X-ray industrial radiography shall appoint a radiation safety officer for the radiographic operation.

2. ***A radiation safety officer appointed pursuant to subsection 1 must satisfy the training and experience requirements set forth in 10 C.F.R. § 34.42, as adopted by reference pursuant to NAC 459.737.***

***3.*** A radiation safety officer shall:

(a) Ensure that the daily operation of X-ray industrial radiography is conducted in accordance with the provisions of this chapter.

(b) Establish and oversee operating and emergency procedures and procedures to ensure that the level of radiation is as low as is reasonably achievable. The radiation safety officer shall review these procedures at least once each year to ensure that the procedures conform to the requirements set forth in this chapter.

(c) Approve and oversee all phases of the training program for radiographic personnel to ensure that they receive training in appropriate and effective protection practices.

(d) Ensure that the required surveys are performed and documented in accordance with applicable regulations and that corrective measures are taken if the levels of radiation exceed the levels established in this chapter.

(e) Ensure that monitoring devices are calibrated and used properly by personnel who are performing X-ray industrial radiography and the results of exposures to radiation are properly recorded and notices of those exposures are submitted on a timely basis.

(f) Ensure that the radiographic operations are conducted safely and institute corrective actions if necessary, including terminating the operations in an emergency or if unsafe conditions exist.

**Sec. 77.** NAC 459.724 is hereby amended to read as follows:

459.724 1. ~~[A]~~ ***Except as otherwise provided in subsection 7, a*** registrant shall not permit any person to operate an X-ray system to conduct X-ray industrial radiography unless, at all times during radiographic operations, the person wears a film badge or a thermoluminescence dosimeter and, if the X-ray industrial radiography takes place at a temporary job site or in a room

or building that does not meet the requirements of NAC 459.335, a direct reading pocket dosimeter.

2. Direct reading pocket dosimeters must have a range from zero to 200 millirems (2 millisieverts) and be recharged at the start of each shift. Each film badge or thermoluminescence dosimeter must be assigned to and worn by only one person. A film badge must not be replaced less often than once a month. A thermoluminescence dosimeter must not be replaced less often than once every 3 months.

3. Direct reading pocket dosimeters must be read and exposures recorded daily. A person's film badge or thermoluminescence dosimeter must be immediately processed if his or her pocket dosimeter is discharged beyond its range. Reports received from the film badge or thermoluminescence dosimeter processor and records of the pocket dosimeter readings must be maintained for inspection by the Division for not less than 3 years after the records are made.

4. Each direct reading pocket dosimeter must be checked at periods not to exceed 1 year for response to radiation. To be acceptable, a dosimeter must read within plus or minus 20 percent of the true radiation exposure.

5. If the ion-chamber pocket dosimeter of a person is found to be off scale, or if the electronic personal dosimeter of a person reads greater than 200 millirems (2 millisieverts), and the possibility of radiation exposure cannot be ruled out as the cause:

(a) The film badge or thermoluminescence dosimeter of that person must be sent for processing within 24 hours; and

(b) The person shall not resume work with sources of radiation until a determination of his or her radiation exposure has been made.

6. For the purposes of this section, a person performing maintenance on an X-ray system shall be deemed to be operating the system if the X-ray beam is on at any time during the performance of the maintenance.

***7. The provisions of subsection 1 do not apply to an x-ray system designed for the inspection of carry-on baggage and an x-ray system designed as a screening system for the security of personnel. A registrant shall ensure that the operation of such an x-ray system complies with NAC 459.337.***

**Sec. 78.** NAC 459.737 is hereby amended to read as follows:

459.737 1. In addition to any applicable requirement of NAC 459.010 to 459.794, inclusive, ***and sections 3 to 20, inclusive, of this regulation,*** 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. The provisions of this subsection do not apply to a person using an electronic source of radiation to conduct industrial radiography.

2. Part 34 of Title 10 of the Code of Federal Regulations ~~[, as those provisions existed on January 31, 2008,]~~ is hereby adopted by reference, subject to the following:

(a) The exclusion of references within 10 C.F.R. Part 34 to Part "21" and to 10 C.F.R. §§ "21.21," "30.7," "30.9" and "30.10";

(b) The exclusion of "offshore" specified in the definition of "offshore platform radiography" set forth in 10 C.F.R. § 34.3;

(c) The substitution of the following wording:

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

(I) "Commission's regulations," except as stated in subparagraph 6;

(II) "Federal regulations";

(III) "NRC regulations"; and

(IV) "This chapter" as stated in 10 C.F.R. § 34.101(a);

(2) "Division" for the reference to "Commission," except as stated in 10 C.F.R. § 34.20 and subsubparagraph (IV) of subparagraph 3;

(3) "Division, Nuclear Regulatory Commission or an agreement state" for references to:

(I) "NRC or an Agreement State";

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

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

(IV) "Commission" in 10 C.F.R. § 34.43(a)(2);

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

(5) In 10 C.F.R. § 34.27(d), "reports of test results for leaking or contaminated sealed sources shall be made pursuant to NAC 459.307" for a reference to the following statement, "A report must be filed with the Director ~~[of Nuclear Material Safety and Safeguards,]~~ ***, Office of Federal and State Materials and Environmental Management Programs,*** by an appropriate method listed in § 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. 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 C.F.R. part 20 of this chapter 'Standards for Protection Against Radiation.' ";

(6) In 10 C.F.R. § 34.27(d), "subsection 3 of NAC 459.307" for the reference to "Commission regulations";

(7) In 10 C.F.R. § 34.43(a)(1), "10 C.F.R. § 30.6" for the reference to "§ 30.6(a) of this chapter";

(8) In 10 C.F.R. § 34.89, "a Nuclear Regulatory Commission or an agreement state" for the reference to "the Agreement State";

(9) In 10 C.F.R. § 34.101(a), "Division" for the reference to "NRC's Office of Federal and State Materials and Environmental Management Programs, by an appropriate method listed in § 30.6(a) of this chapter";

(10) In 10 C.F.R. § 34.101(c), "Division" for the reference to "appropriate NRC regional office listed in § 30.6(a)(2) of this chapter";

(11) In Item 12, Section I of Appendix A to 10 C.F.R. Part 34, "Division, the United States Nuclear Regulatory Commission and other independent certifying organizations or agreement states" for the reference to "Commission and other independent certifying organizations and/or Agreement States";

(12) In Item 1, Section II of Appendix A to 10 C.F.R. Part 34, "equivalent Nuclear Regulatory Commission or agreement state regulations" for the reference to "equivalent Agreement State regulations"; and

(13) In Item 2(c), Section II of Appendix A to 10 C.F.R. Part 34, "a Nevada, Nuclear Regulatory Commission or an agreement state licensee" for the reference to "an Agreement State or a NRC licensee"; and

(d) The substitution of the following:

(1) "Subsection 1 of NAC 459.120" for the reference to "10 CFR 34.111";

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

(3) "Paragraph (a) of subsection 1 of NAC 459.341" for the reference to "10 CFR 20.1601(a)(1)";

(4) "Subsections 1 and 2 of NAC 459.3555" for the reference to "10 CFR 20.1902(a) and (b)";

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

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

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

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

(9) "NAC 459.373" for the reference to "§ 30.50";

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

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

3. The following sections of Part 34 of Title 10 of the Code of Federal Regulations ~~[, as those provisions existed on January 31, 2008,]~~ 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 by mail from the Superintendent of Documents, United States Government Printing Office, P.O. Box 979050, St. Louis, Missouri 63197-9000, or by toll-free

telephone at (866) 512-1800, at the price of $67, or free of charge at the Internet address **http://www.gpoaccess.gov/cfr/index.html**.

**Sec. 79.** NAC 459.742 is hereby amended to read as follows:

459.742 1. No person may receive, possess, use, transfer, own or acquire a particle accelerator except as authorized in a registration issued pursuant to NAC 459.010 to 459.950, inclusive, ***and sections 3 to 20, inclusive, of this regulation,*** or as otherwise provided for in those sections. The general procedures for registration of particle accelerator facilities are included in NAC 459.150 to 459.166, inclusive.

2. In addition to the requirements of NAC 459.150 to 459.166, inclusive, a registration application for use of a particle accelerator may be approved only if the Division determines that:

(a) The applicant is qualified by reason of training and experience to use the accelerator in question for the purpose requested in accordance with NAC 459.320 to 459.374, inclusive, 459.740 to 459.752, inclusive, and 459.780 to 459.794, inclusive, in such a manner as to minimize danger to public health and safety or property;

(b) The applicant's proposed or existing equipment, facilities, operating and emergency procedures are adequate to protect health and minimize danger to public health and safety or property;

(c) The issuance of the registration will not be inimical to the health and safety of the public and the applicant satisfies any applicable special requirement in subsection 3;

(d) The applicant has appointed a ***radiation*** safety officer ~~[in radiation;]~~ ***, who satisfies the training and experience requirements set forth in section 19 of this regulation, to implement and oversee a radiation safety program for the use of particle accelerators;***

(e) The applicant or the applicant's staff has substantial experience in the use of particle accelerators and training sufficient for application to its intended uses;

(f) The applicant has established a ***radiation*** safety committee ~~[in radiation]~~ to approve, in advance, proposals for uses of the particle accelerator, whenever deemed necessary by the Division; and

(g) The applicant has an adequate training program for operators of the particle accelerator.

3. In addition to the requirements in NAC 459.150 to 459.166, inclusive, a registration for use of a particle accelerator in the healing arts will be issued only if the following requirements are met:

(a) The applicant has appointed a medical committee of at least three members to evaluate all proposals for research, diagnostic and therapeutic use of the particle accelerator whenever deemed necessary by the Division. Membership of the committee should include physicians expert in internal medicine, hematology, therapeutic radiology and a person experienced in depth dose calculations and protection against radiation.

(b) The persons designated on the application as the users have substantial training and experience in deep therapy techniques or in the use of particle accelerators to treat humans.

(c) Any person designated on the application as the user is a physician.

**Sec. 80.** NAC 459.744 is hereby amended to read as follows:

459.744 1. NAC 459.740 to 459.752, inclusive, establish radiation safety requirements for the use of particle accelerators. These provisions are in addition to, and not in substitution for, other applicable provisions of NAC 459.010 to 459.794, inclusive ~~[.]~~ ***and sections 3 to 20, inclusive, of this regulation.***

2. The registrant is responsible for ensuring that all requirements of NAC 459.740 to 459.752, inclusive, are met.

3. No registrant may permit any person to act as an operator of a particle accelerator until the person:

(a) Has been instructed in radiation safety and has demonstrated an understanding of it;

(b) Has received a copy of, and instruction in the requirements of, NAC 459.740 to 459.752, inclusive, and the applicable provisions of NAC 459.320 to 459.374, inclusive, and 459.780 to 459.794, inclusive, pertinent registration conditions and the registrant's operating and emergency procedures and has demonstrated an understanding of that material; and

(c) Has demonstrated competence to use the particle accelerator, related equipment and survey instruments which will be employed in his or her assignment.

4. Members of the ***radiation*** safety committee ~~[in radiation]~~ and the ***radiation*** safety officer ~~[in radiation]~~ must have the authority to terminate the operations at a particle accelerator facility if such action is deemed necessary to protect health and minimize danger to public health and safety or property.

**Sec. 81.** NAC 459.788 is hereby amended to read as follows:

459.788 1. Each licensee or registrant shall permit the Division, at all reasonable times, an opportunity to inspect materials, machines, activities, facilities, premises and records pursuant to NAC 459.010 to 459.794, inclusive ~~[.]~~ ***, and sections 3 to 20, inclusive, of this regulation.***

2. During an inspection, ~~[division]~~ inspectors ***of the Division*** may consult privately with workers, as specified in NAC 459.790. The licensee or registrant may accompany the Division's inspectors during other phases of an inspection.

3. ***The inspectors of the Division may require a licensee or registrant to energize any machine during the inspection. Except as otherwise provided in this subsection, the machine may be energized by an employee of the licensee or registrant or, if the licensee or registrant consents, by an inspector. An inspector of the Division shall not energize or operate a machine for medical use if a patient is present.***

***4.*** If, at the time of an inspection, a person has been authorized by the workers to represent them during the inspection, the licensee or registrant must notify the inspectors of the authorization and give the workers' representative an opportunity to accompany the inspectors during the inspection of physical working conditions.

~~[4.]~~ ***5.*** Each workers' representative must be routinely engaged in work under control of the licensee or registrant and must have received instructions as specified in NAC 459.784.

~~[5.]~~ ***6.*** Different representatives of licensees or registrants and workers may accompany the inspectors during different phases of an inspection if there is no resulting interference with the conduct of the inspection, but only one workers' representative at a time may accompany the inspectors.

~~[6.]~~ ***7.*** With the approval of the licensee or registrant and the workers' representative, a person who is not routinely engaged in work under control of the licensee or registrant, for example, a consultant to the licensee or registrant or to the workers' representative, may be afforded the opportunity to accompany ~~[division]~~ inspectors ***of the Division*** during the inspection of physical working conditions.

~~[7.]~~ ***8.*** Notwithstanding the other provisions of this section, ~~[division]~~ inspectors ***of the Division*** may refuse to permit accompaniment by any person who deliberately interferes with a fair and orderly inspection. With regard to any area containing proprietary information, the

workers' representative for that area must be a person previously authorized by the licensee or registrant to enter that area.

**Sec. 82.** NAC 459.276, 459.278 and 459.703 are hereby repealed.

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## TEXT OF REPEALED SECTIONS

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**459.276 Specific licenses: Introduction of exempt concentrations of radioactive material into certain products or materials. (NRS 459.201)**

1. In addition to the requirements set forth in NAC 459.238, a specific license authorizing the introduction of radioactive material into a product or material owned by or in the possession of the licensee or another to be transferred to persons exempt pursuant to NAC 459.184 will be issued if:

(a) The applicant submits a description of the product or material into which the radioactive material will be introduced, intended use of the radioactive material and the product or material into which it is introduced, method of introduction, initial concentration of the radioactive material in the product or material, control methods to ensure that no more than the specified concentration is introduced into the product or material, estimated time interval between introduction and transfer of the product or material, and estimated concentration of the radioactive material in the product or material at the time of transfer; and

(b) The applicant provides reasonable assurance that the concentrations of radioactive material at the time of transfer will not exceed the concentrations in NAC 459.186, that reconcentration of the radioactive material in concentrations exceeding those in NAC 459.186 is

not likely, that use of lower concentrations is not feasible, and that the product or material is not likely to be incorporated in any food, beverage, cosmetic, drug or other commodity or product designed for ingestion or inhalation by, or application to, a human being.

2. Each person licensed under this section must file an annual report with the Division which identifies the type and quantity of each product or material into which radioactive material has been introduced during the reporting period; the name and address of the person who owned or possessed the product or material into which radioactive material has been introduced, at the time of introduction; the type and quantity of radionuclide introduced into each such product or material; and the initial concentrations of the radionuclide in the product or material at time of transfer of the radioactive material by the licensee. If no transfers of radioactive material have been made pursuant to this section during the reporting period, the report must so indicate. The report must cover the year ending June 30, and be filed with the Division within 30 days.

**459.278 Specific licenses: Distribution of radioactive material in exempt quantities. (NRS 459.201)**

1. An application for a specific license to distribute radioactive material other than source or by-product material to persons exempted from NAC 459.010 to 459.794, inclusive, pursuant to NAC 459.184 will be approved if:

(a) The radioactive material is not contained in any food, beverage, cosmetic, drug or other commodity designed for ingestion or inhalation by, or application to, a human being;

(b) The radioactive material is in the form of processed chemical elements, compounds, mixtures, tissue samples, bioassay samples, counting standards, plated or encapsulated sources or similar substances, identified as radioactive and to be used for its radioactive properties, but is

not incorporated into any manufactured or assembled commodity, product or device intended for commercial distribution; and

(c) The applicant submits copies of prototype labels and brochures and the Division approves the labels and brochures.

2. The license issued under subsection 1 is subject to the following conditions:

(a) No more than ten exempt quantities may be sold or transferred in any single transaction. An exempt quantity may be composed of fractional parts of one or more of the exempt quantity provided the sum of the fractions does not exceed unity.

(b) Each exempt quantity must be separately and individually packaged. No more than ten packaged exempt quantities may be contained in any outer package for transfer to persons exempt pursuant to NAC 459.184. The outer package must be such that the dose rate at the external surface of the package does not exceed 0.5 millirem per hour.

(c) The immediate container of each quantity or separately packaged fractional quantity of radioactive material must bear a durable, legible label which:

(1) Identifies the radionuclide and the quantity of radioactivity; and

(2) Bears the words “Radioactive Material.”

(d) In addition to the labeling information required by paragraph (c) the label affixed to the immediate container or an accompanying brochure must:

(1) State that the contents are exempt from the Nuclear Regulatory Commission or agreement state requirements;

(2) Bear the words “Radioactive Material - Not for Human Use - Introduction into Foods, Beverages, Cosmetics, Drugs, Medicines or Products Manufactured for Commercial Distribution is Prohibited - Exempt Quantities Should not be Combined”; and

(3) Set forth appropriate radiation safety precautions and instructions relating to the handling, use, storage and disposal of the radioactive material.

3. Each person licensed under this section shall maintain records identifying, by name and address, each person to whom radioactive material is transferred for use under NAC 459.184 or the equivalent regulations of an agreement state, and stating the kinds and quantities of radioactive material transferred. An annual summary report stating the total quantity of each radionuclide transferred under the specific license must be filed with the Division. Each report must cover the year ending June 30, and be filed within 30 days. If no transfers of radioactive material have been made pursuant to this section during the reporting period, the report must so indicate.

4. The provisions of subsection 2 of NAC 459.262 apply to this section.

**459.703 "Temporary job site" defined. (NRS 459.030, 459.201)** "Temporary job site" means any place where sources of X-ray radiation are present and X-ray industrial radiography is performed.