Title 33

ENVIRONMENTAL QUALITY

Part XV. Radiation Protection

Chapter 1. General Provisions

§102. Definitions and Abbreviations

As used in these regulations, these terms have the definitions set forth below. Additional definitions used only in a certain chapter may be found in that Chapter.

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Radiation Area—an area, accessible to individuals, in which radiation levels could result in an individual receiving a dose equivalent in excess of five millirems (0.05 millisievert) in one hour at 30 centimeters from the radiation source or from any surface that the radiation penetrates~~, or in any five consecutive days, a dose in excess of 100 millirems (one millisievert)~~.

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Chapter 3. Licensing of Radioactive Material

Subchapter A. Exemptions

§304. Radioactive Material Other Than Source Material

A. Exempt Concentrations

1. Except as provided in Paragraph<u>s</u> A.~~2~~<u>3 and 4</u> of this Section, any person is exempt from this Chapter to the extent that such person receives, possesses, uses, transfers, owns, or acquires

products or materials containing radioactive material in concentrations not in excess of those listed in Schedule A of this Chapter.

2. This Section shall not be deemed to authorize the import of byproduct material or products containing byproduct material.

3. A manufacturer, processor, or producer of a product or material is exempt from the requirements for a license set forth in these regulations to the extent that this person transfers byproduct material contained in a product or material in concentrations not in excess of those specified in Schedule A of this Chapter and introduced into the product or material by a licensee holding a specific license issued pursuant to 10 CFR 32.11 expressly authorizing such introduction. This exemption does not apply to the transfer of byproduct material contained in any food, beverage, cosmetic, drug, or other commodity or product designed for ingestion or inhalation by, or application to, a human being.

~~2~~4. No person may introduce byproduct~~radioactive~~ material into a product or material, knowing or having reason to believe that it will be transferred to persons exempt under LAC 33:XV.304.A.1 or equivalent regulations of ~~the U.S. Nuclear Regulatory Commission or~~ any agreement state ~~or licensing state~~, except in accordance with a specific license issued pursuant to 10 CFR 32.11~~LAC 33:XV.328.A or the general licenses provided in LAC 33:XV.390~~.

B. Exempt Quantities

1. Except as provided in Paragraphs B.3 ~~and 4~~- 5 of this Section, any person is exempt from these regulations to the extent that such person receives, possesses, uses, transfers, owns, or acquires byproduct ~~radioactive~~ material in individual quantities, none of which exceeds the applicable quantity set forth in Schedule B of this Chapter.

2. …

3. LAC 33:XV.304.B does not authorize the production, packaging, ~~or~~ repackaging, or transfer of byproduct~~radioactive~~ material for purposes of commercial distribution or the incorporation of byproduct~~radioactive~~ material into products intended for commercial distribution.

4. No person may, for purposes of commercial distribution, transfer byproduct~~radioactive~~ material in ~~excess of~~ the individual quantities set forth in Schedule B of this Chapter knowing, or having reason to believe, that such quantities of byproduct~~radioactive~~ material will be transferred to persons exempt under Subsection B of this Section or equivalent regulations of the U.S. Nuclear Regulatory Commission or any other agreement state, except in accordance with a specific license issued by the U.S. Nuclear Regulatory Commission in accordance with 10 CFR 32.18 or by the administrative authority in accordance with LAC 33:XV.328.B, which license states that the byproduct~~radioactive~~ material may be transferred by the licensee to persons exempt under Subsection B of this Section or the equivalent regulations of the U.S. Nuclear Regulatory Commission, or any other agreement state or licensing state. Authority to transfer possession or control by the manufacturer, processor, or producer of any equipment, device, commodity, or other product containing byproduct material whose subsequent possession, use, transfer, and disposal by all other persons are exempted from regulatory requirements may be obtained only from the U.S. Nuclear Regulatory Commission, Washington, D.C. 20555.

5. No person may, for purposes of producing an increased radiation level, combine quantities of byproduct material covered by this exemption so that the aggregate quantity exceeds the limits set forth in 10 CFR 30.71 Schedule B, except for byproduct material combined within a device placed in use before May 3, 1999, or as otherwise permitted by the regulations in this Chapter.

C. Exempt Items

1. Certain Items Containing Byproduct Material. Authority to transfer possession or control by the manufacturer, processor, or producer of any equipment, device, commodity, or other product containing byproduct material whose subsequent possession, use, transfer, and disposal by all other persons are exempted from regulatory requirements may be obtained only from the U.S. Nuclear Regulatory Commission, Washington, D.C. 20555. Except for persons who apply byproduct~~radioactive~~ material to, or persons who incorporate byproduct~~radioactive~~ material into, the following products, or persons who initially transfer for sale or distribution the following products containing byproduct material, any person is exempt

from these regulations to the extent that he or she receives, possesses, uses, transfers, owns, or acquires the following products~~.~~:

a. Timepieces or hands or dials containing not more than the following specified quantities of byproduct~~radioactive~~ material and not exceeding the following specified levels of radiation ~~dose rate~~:

i. – vi. …

vii. the levels of radiation ~~dose rate~~ from hands and dials containing promethium-147 will not exceed, when measured through 50 milligrams per square centimeter of absorber:

vii.(a). – viii. …

b. ~~Lock illuminators containing not more than 15 millicuries of tritium or not more than 2 millicuries of promethium-147 shall not exceed 1 millirad per hour at 1 centimeter from any surface when measured through 50 milligrams per square centimeter of absorber.~~Devices such as:

i. static elimination devices which contain, as a sealed source or sources, byproduct material consisting of a total of not more than 500 microcurie (18.5 MBq) of polonium-210 per device;

ii. ion generating tubes designed for ionization of air that contain, as a sealed source or sources, byproduct material consisting of a total of not more than 18.5 MBq (500 μCi) of polonium-210 per device or of a total of not more than 1.85 GBq (50 mCi) of hydrogen-3 (tritium) per device;

iii. such devices authorized before October 23, 2012, for use under the general license then provided in 10 CFR 31.3 and equivalent regulations of agreement states and manufactured, tested, and labeled by the manufacturer in accordance with the specifications contained in a specific license issued by the Nuclear Regulatory Commission.

c. …

~~d. Automobile shift quadrants containing not more than 25 millicuries of tritium.~~

~~e.~~d. Marine compasses containing not more than 750 millicuries of tritium gas and other marine navigational instruments containing not more than 250 millicuries of tritium gas manufactured before December 17, 2007.

~~f.~~e. ~~Thermostat dials and pointers containing not more than 25 millicuries of tritium per thermostat.~~Ionization chamber smoke detectors containing not more than 1 microcurie (μCi) of americium-241 per detector in the form of a foil and designed to protect life and property from fires.

~~g.~~f. Electron tubes, provided that no tube contains more than one of the following specified quantities of byproduct~~radioactive~~ material:

i. – vi. …

vii. provided further, that the levels of radiation from each electron tube containing byproduct~~radioactive~~ material do not exceed 1 millirad per hour at 1 centimeter from any surface when measured through 7 milligrams per square centimeter of absorber; and

viii. …

~~h.~~g. Ionizing radiation measuring instruments containing, for the purposes of internal calibration or standardization, one or more sources of byproduct~~radioactive~~ material, provided that:

i. – iii. …

2. Self-Luminous Products Containing Byproduct~~Radioactive~~ Material

a. Tritium, Krypton-85, or Promethium-147. Except for persons who manufacture, process, ~~or~~ produce, or initially transfer for sale or distribution self-luminous products containing tritium, krypton-85, or promethium-147, any person is exempt from the requirements for a license set forth in these regulations to the extent that such person receives, possesses, uses, transfers, owns, or acquires tritium, krypton-85, or promethium-147 in self-luminous products manufactured, processed, produced, ~~imported,~~ or initially transferred in accordance with a specific license issued by the U.S. Nuclear Regulatory Commission pursuant to 10 CFR 32.22, which license authorizes the initial transfer of the product for use under this Subparagraph~~to persons who are exempt from regulatory requirements~~. Any

person who desires to manufacture, process, or produce, or initially transfer for sale or distribution self-luminous products containing tritium, krypton-85, or promethium-147 for use under this Subparagraph, shall apply for a license under 10 CFR 32.22 and for a certificate of registration in accordance with 10 CFR 32.210. The exemption in this Sub~~section~~paragraph does not apply to tritium, krypton-85, or promethium-147 used in products primarily for frivolous purposes or in toys or adornments.

2.b. – 4.d. …

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:2001 et seq. and 2104.B.1.
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Subchapter C. General Licenses

§322. General Licenses: Radioactive Material Other Than Source Material

A. Certain Devices and Equipment. A general license is hereby issued to transfer, receive, acquire, own, possess, and use radioactive material incorporated in the following devices or equipment that have been manufactured, tested, and labeled by the manufacturer in accordance with a specific license issued to the manufacturer by the U.S. Nuclear Regulatory Commission for use pursuant to 10 CFR 31.3. Attention is directed particularly to the provisions of 10 CFR 20 concerning labeling of containers. This general license is subject to the provisions of LAC 33:XV.104-109, 304.A.~~2~~3 and 4, 331, 340, 350, and Chapters 4, 10, and 15 of these regulations.

A.1. – J.4. …

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HISTORICAL NOTE: Promulgated by the Department of Environmental Quality, Nuclear Energy Division, LR 13:569 (October 1987), amended by the Office of Air Quality and Radiation Protection, Radiation Protection Division, LR 18:34 (January 1992), amended by the Office of Environmental Assessment, Environmental Planning Division, LR 26:2567 (November 2000), LR 27:1226 (August 2001), LR 30:1663 (August 2004), amended by the Office of the Secretary, Legal Affairs Division, LR 31:2524 (October 2005), LR 32:811 (May 2006), LR 33:448 (March 2007), LR 33:2177 (October 2007), amended by the Office of the Secretary, Legal Division, LR 40:**.

Subchapter D. Specific Licenses

§328. Special Requirements for Specific License to Manufacture, Assemble, Repair, or Distribute Commodities, Products, or Devices that Contain Byproduct~~Radioactive~~ Material

A. Licensing the Introduction of Byproduct~~Radioactive~~ Material into Products in Exempt Concentrations. No person may introduce byproduct material into a product or material knowing or having reason to believe that it will be transferred to persons exempt under LAC 33:XV.304.A.1 or equivalent regulations of an agreement state, except in accordance with a license issued pursuant to 10 CFR 32.11.

~~1. In addition to the requirements set forth in LAC 33:XV.325, a specific license authorizing the introduction of radioactive material into a product or material to be transferred to persons exempt under LAC 33:XV.304.A.1 will be issued under the following conditions:~~

~~a. the applicant submits to the Office of Environmental Compliance a description of the product or material into which the radioactive material will be introduced, the 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;~~

~~b. the applicant provides reasonable assurance that the concentrations of radioactive material at the time of transfer will not exceed the concentrations in Schedule A of this Chapter, that of the radioactive material in concentrations exceeding those in Schedule A 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 Subsection shall file an annual report with the Office of Environmental Compliance that shall identify the type and quantity of each product or material into which~~

~~radioactive material has been introduced during the reporting period; 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 the 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 the time of the transfer of radioactive material by the licensee. If no transfers of radioactive material have been made pursuant to this Subsection during the reporting period, the report shall so indicate. The report shall cover the year ending June 30 and shall be filed within 30 calendar days thereafter.~~

B. – M.4.g. …

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:2001 et seq. and 2104.B.1.
HISTORICAL NOTE: Promulgated by the Department of Environmental Quality, Nuclear Energy Division, LR 13:569 (October 1987), amended by the Office of Air Quality and Radiation Protection, Radiation Protection Division, LR 18:34 (January 1992), LR 24:2092 (November 1998), amended by the Office of Environmental Assessment, Environmental Planning Division, LR 26:2569 (November 2000), LR 26:2768 (December 2000), LR 27:1228 (August 2001), LR 30:1664 (August 2004), amended by the Office of the Secretary, Legal Affairs Division, LR 31:2526 (October 2005), LR 33:2179 (October 2007), LR 36:1771 (August 2010), amended by the Office of the Secretary, Legal Division, LR 38:2746 (November 2012), LR 40:**.

Chapter 4. Standards for Protection against Radiation

Subchapter B. Radiation Protection Programs

§410. Occupational Dose Limits for Adults

A. – B. …

C. <u>When the external exposure is determined by measurement with an external personal monitoring device, the deep-dose equivalent shall be used in place of the effective dose equivalent, unless the effective dose equivalent is determined by a dosimetry method approved by the department.</u> The assigned deep dose equivalent ~~must~~<u>shall</u> be for the part of the body receiving the highest exposure. The assigned shallow dose equivalent ~~must~~<u>shall</u> be the dose averaged over the contiguous 10 square centimeters of skin receiving the highest exposure. The deep dose equivalent, lens dose equivalent, and shallow dose equivalent may be assessed from surveys or other radiation measurements for the purpose of demonstrating compliance

with the occupational dose limits, if the individual monitoring device was not in the region of highest potential exposure or the results of individual monitoring are unavailable.

D. – G. …

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:2001 et seq. and 2104.B.1.
HISTORICAL NOTE: Promulgated by the Department of Environmental Quality, Nuclear Energy Division, LR 13:569 (October 1987), amended by the Office of Air Quality and Radiation Protection, Radiation Protection Division, LR 19:1421 (November 1993), LR 22:969 (October 1996), amended by the Office of Environmental Assessment, Environmental Planning Division, LR 26:2769 (December 2000), LR 30:1188 (June 2004),amended by the Office of the Secretary, Legal Division, LR 40:**.

§417. Dose to an Embryo/Fetus

A. – B. …

C. The dose equivalent to the embryo/fetus is~~shall be taken as~~ the sum of:

1. the deep-dose equivalent to the ~~embryo/fetus from radionuclides in the embryo/fetus and radionuclides in the~~declared pregnant woman; and

2. the dose equivalent to the embryo/fetus resulting from radionuclides in the embryo/fetus and radionuclides in the declared pregnant woman.~~that is most representative of the dose equivalent to the embryo/fetus from external radiation, that is, in the mother's lower torso region, determined as follows:~~

~~a. if multiple measurements have not been made, assignment of the highest deep dose equivalent for the declared pregnant woman shall be the dose equivalent to the embryo/fetus, in accordance with LAC 33:XV.414.C; or~~

~~b. if multiple measurements have been made, the dose equivalent to the embryo/fetus shall be the assignment of the deep dose equivalent for the declared pregnant woman from the individual monitoring device which is most representative of the dose equivalent to the embryo/fetus. Assignment of the highest deep dose equivalent for the declared pregnant woman to the embryo/fetus is not required unless that dose is also the most representative deep dose equivalent for the region of the embryo/fetus.~~

D. If by the time the woman declares pregnancy to the licensee or registrant, the dose equivalent to the embryo/fetus has exceeded ~~4.~~5 mSv (0.~~4~~5 rem), the licensee or registrant shall be deemed to be in compliance with Subsection A of this Section if the additional dose equivalent to the embryo/fetus does not exceed 0.5 mSv (0.05 rem) during the remainder of the pregnancy.[i2]

[2]The National Council on Radiation Protection and Measurements recommended in NCRP Report No. 91, "Recommendations on Limits for Exposure to Ionizing Radiation" (June 1, 1987), that no more than 0.5 mSv (0.05 rem) to the embryo/fetus be received in any one month.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:2001 et seq. and 2104.B.1.
HISTORICAL NOTE: Promulgated by the Department of Environmental Quality, Nuclear Energy Division, LR 13:569 (October 1987), amended by the Office of Air Quality and Radiation Protection, Radiation Protection Division, LR 19:1421 (November 1993), LR 22:970 (October 1996), amended by the Office of Environmental Assessment, Environmental Planning Division, LR 26:2769 (December 2000),amended by the Office of the Secretary, Legal Division, LR 40:**.

§431. Conditions Requiring Individual Monitoring of External and Internal Occupational Dose

~~Each licensee or registrant shall monitor exposures from sources of radiation at levels sufficient to demonstrate compliance with the occupational dose limits of this Chapter.~~

A. Each licensee or registrant shall monitor exposures from sources of radiation at levels sufficient to demonstrate compliance with the occupational dose limits of this Chapter. Each licensee or registrant shall monitor occupational exposure to radiation and shall supply and require the use of individual monitoring devices by:

A.1. – A.4.b. …

c. when only one individual monitoring device is issued to determine the effective dose equivalent for external radiation in accordance with LAC 33:XV.410.~~C.2~~D, it shall be located at the neck outside the protective apron. When a second individual monitoring device is used for the same purpose, it shall be located under the protective apron at the waist. The second individual monitoring device is required for a declared pregnant woman.

B. – B.2. …

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Subchapter Z. Appendices

§499. Appendices A, B, C, D, E

A. Appendix A.

Appendix A Assigned Protection Factors for Respirators[a]		
Type of Respirator	**Operating Mode**	**Assigned Protection Factors (APF)**
I. Air-Purifying Respirators [Particulate[b] Only][c]		
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B. Appendix B.

Appendix B

Annual Limits on Intake (ALI) and Derived Air Concentrations (DAC) of Radionuclides for Occupational Exposure; Effluent Concentrations; Concentrations for Release to Sanitary Sewerage

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The derived air concentration (DAC) values are derived limits intended to control chronic occupational exposures. The relationship between the DAC and the ALI is given by:

$$DAC = \frac{ALI \text{ (in } \mu Ci)}{(2000 \text{ hrs/working yr} \times 60 \text{ min/hr} \times 2 \times 10^4 \text{ ml/min})}$$

$$= \frac{ALI}{2.4 \times 10^{49}} \ \mu Ci/ml$$

where:

2 x 10^4 ml is the volume of air breathed per minute at work by the reference man under working conditions of light work.

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C. Appendix C.

Appendix C.

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D. Appendix D.

Appendix D.

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E. Appendix E.

Appendix E.

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Chapter 5. Radiation Safety Requirements for Industrial Radiographic Operations

Subchapter B. Personal Radiation Safety Requirements for Radiographers

§573. Conducting Industrial Radiographic Operations

A. – E.2. …

3. two years of documented radiation protection experience, including knowledge of industrial radiographic operations, with at least ~~40 hours of active participation~~ 2000 hours of hands-on experience as a qualified radiographer in industrial radiographic operations.

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:2001 et seq. and 2104.B.1.
HISTORICAL NOTE: Promulgated by the Department of Environmental Quality, Office of Environmental Assessment, Environmental Planning Division, LR 27:1234 (August 2001), amended LR 28:1951 (September 2002), LR 29:34 (January 2003), amended by the Office of the Secretary, Legal Division, LR 40:**.

Chapter 7. Use of Radionuclides in the Healing Arts

§713. Suppliers

A. For medical use, a~~A~~ licensee ~~shall~~may only use ~~for medical use only~~:

1. ~~radioactive material, including~~ sealed sources or devices, manufactured, labeled, packaged, and distributed in accordance with a license issued in accordance with these regulations or the equivalent regulations of another agreement state, a licensing state, or the Nuclear Regulatory Commission;

~~2. reagent kits that have been manufactured, labeled, packaged, and distributed in accordance with an approval issued by the U.S. Food and Drug Administration;~~

2~~3~~. sealed sources or devices non-commercially transferred from a Nuclear Regulatory Commission Medical Licensee, a licensing state medical use licensee, or an agreement state medical use licensee; and

3~~4~~. teletherapy sources manufactured and distributed in accordance with a license issued pursuant to these regulations or the equivalent regulations of another agreement state, a licensing state, or the U.S. Nuclear Regulatory Commission.

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§763. Training

A. Training for a Radiation Safety Officer. Except as provided in Subsection B of this Section, the licensee shall require an individual fulfilling the responsibilities of the radiation safety officer as provided in LAC 33:XV.706 to be an individual:

1. who is certified by a specialty board whose certification process has been recognized by the Nuclear Regulatory Ccommission or an agreement state, and who meets the requirements in Paragraphs A.4 and 5 of this Section. (The names of board certifications that have been recognized by the Nuclear Regulatory Ccommission or an agreement state will be posted on the NRC's web page.) To have its certification process recognized, a specialty board shall require all candidates for certification to:

a. – b.ii. …

(a). under the supervision of a medical physicist who is certified in medical physics by a specialty board recognized by the Nuclear Regulatory Ccommission or an agreement state; or

(b). in a clinical nuclear medicine facility providing diagnostic and/or therapeutic services under the direction of a physician who meets the requirements for an authorized user in Subsection B, or D or Paragraph E.1 of this Section; and

1.b.iii. – 3. …

a. is a medical physicist who has been certified by a specialty board whose certification process has been recognized by the Nuclear Regulatory Ccommission or an agreement state in accordance with Subsection J of this Section, and who has experience in radiation safety for similar types of use of byproduct material for which the licensee is seeking the approval of the individual as radiation safety officer, and who meets the requirements in Paragraphs A.4 and 5 of this Section; or

A.3.b. – B.3. …

4. A physician, dentist, or podiatrist identified as an authorized user for the medical use of byproduct material on a license issued by the Nuclear Regulatory Ccommission or agreement state, a permit issued by a commission master material licensee, a permit issued by a commission or an agreement state broad scope licensee, or a permit issued by a commission master material license broad scope permittee before October 24, 2002, who performs only those medical uses for which he or she was authorized on that date need not comply with the training requirements of this Section.

5. A physician, dentist, or podiatrist identified as an authorized user for the medical use of byproduct material on a license issued by the Nuclear Regulatory Ccommission or agreement state, a permit issued by a commission master material licensee, a permit issued by a commission or an agreement state broad scope licensee, or a permit issued by a commission master material license broad scope permittee who performs only those medical uses for which he or she was authorized between October 24, 2002 and April 29, 2005, need not comply with the training requirements of this Section.

6. – 7. …

C. Training for Uptake, Dilution, and Excretion Studies. Except as provided in Subsections ~~s~~ B ~~and L~~ of this Section, the licensee shall require the authorized user of unsealed byproduct material for the uses authorized in LAC 33:XV.729 to be a physician:

1. who is certified by a medical specialty board whose certification process has been recognized by the Nuclear Regulatory Ccommission or an agreement state, and who meets the requirements in Subparagraph C.3.b of this Section. (The names of board certifications that have been recognized by the Nuclear Regulatory Ccommission or an agreement state will be posted on the NRC's web page.) To have its certification process recognized, a specialty board shall require all candidates for certification to:

a. – b. …

2. who is an authorized user under Subsection D or Paragraph E.1 of this Section, or equivalent agreement state requirements, or Nuclear Regulatory Commission requirements or Subparagraph C.3.a of this Section;

3. – 3.a.i.(e). …

ii. work experience, under the supervision of an authorized user who meets the requirements in Subsection B or C or D or Paragraph E.1 of this Section, or equivalent agreement state requirements, or Nuclear Regulatory Commission requirements involving:

(a). – (f). …

b. has obtained written attestation, signed by a preceptor authorized user who meets the requirements in Subsection B or C or D or Paragraph E.1 of this Section, or equivalent agreement state requirements or Nuclear Regulatory Commission requirements, that the individual has satisfactorily completed the requirements in Subparagraph C.1.a or C.3.a of this Section and has achieved a level of competency sufficient to function independently as an authorized user for the medical uses authorized in LAC 33:XV.729.

D. Training for Imaging and Localization Studies. Except as provided in Subsections ~~B and L~~ of this Section, the licensee shall require the authorized user of unsealed byproduct material for the uses authorized in LAC 33:XV.731.H to be a physician:

1. who is certified by a medical specialty board whose certification process has been recognized by the Nuclear Regulatory C~~c~~ommission or an agreement state, and who meets the requirements in Subparagraph D.3.b of this Section. (The names of board certifications that have been recognized by the Nuclear Regulatory C~~c~~ommission or an agreement state will be posted on the NRC's web page.) To have its certification process recognized, a specialty board shall require all candidates for certification to:

1.a. – 3.a.i.(e). ...

ii. work experience, under the supervision of an authorized user, who meets the requirements in this Subsection, Subsection B or Subclause D.3.a.ii.(f) and Paragraph E.1 of this Section, or equivalent agreement state requirements, or Nuclear Regulatory Commission requirements involving:

(a). – (g). …

b. has obtained written attestation, signed by a preceptor authorized user who meets the requirements in this Subsection, Subsection B or ~~Paragraph E.1 and~~ Subclause D.3.a.ii.(f) and Paragraph E.1 of this Section, or equivalent agreement state requirements, or Nuclear Regulatory Commission requirements that the individual has satisfactorily completed the requirements in Subparagraph D.1.a or D.3.a of this Section and has achieved a level of competency sufficient to function independently as an authorized user for the medical uses authorized in LAC 33:XV.729 and LAC 33:XV.731.H.

E. – E.1. …

a. who is certified by a medical specialty board whose certification process has been recognized by the Nuclear Regulatory C~~c~~ommission or an agreement state, and who meets the requirements in Division E.1.b.i.(b).(vii) and Clause E.1.b.ii of this Section. (Specialty boards whose certification processes have been recognized by the Nuclear Regulatory C~~c~~ommission or an agreement state will be posted on the NRC's web page.) To be recognized, a specialty board shall require all candidates for certification to:

a.i. – b.i.(a).(v). …

(b). work experience, under the supervision of an authorized user who meets the requirements in this Paragraph, Subsection B of this Section or equivalent agreement state requirements or Nuclear Regulatory Commission requirements. A supervising authorized user, who meets the requirements in Subparagraph E.1.b of this Section, ~~must~~shall also have experience in administering

dosages in the same dosage category or categories (i.e., Division E.1.b.i.(b).(vii) of this Section) as the individual requesting authorized user status. The work experience ~~must~~shall involve:

(i). – (vii).[d]. …

ii. has obtained written attestation that the individual has satisfactorily completed the requirements in Clause E.1.a.i and Division E.1.b.i.(b).(vii) or Clause E.1.b.i of this Section, and has achieved a level of competency sufficient to function independently as an authorized user for the medical uses authorized in LAC 33:XV.735.C. The written attestation ~~must~~shall be signed by a preceptor authorized user who meets the requirements in this Paragraph, Subsection B of this Section or equivalent agreement state requirements or Nuclear Regulatory Commission requirements. The preceptor authorized user who meets the requirements in Subparagraph E.1.b of this Section ~~must~~shall have experience in administering dosages in the same dosage category or categories (i.e., Division E.1.b.i.(b).(vii) of this Section) as the individual requesting authorized user status.

2. Training for the Oral Administration of Sodium Iodide I-131 Requiring a Written Directive in Quantities Less Than or Equal To 1.22 Gigabecquerels (33 m~~M~~illicuries). Except as provided in Subsection B of this Section, the licensee shall require an authorized user for the oral administration of sodium iodide I-131 requiring a written directive in quantities less than or equal to 1.22 G~~g~~igabecquerels (33 millicuries) to be a physician:

a. who is certified by a medical specialty board whose certification process includes all of the requirements in Clauses E.2.c.i and ii of this Section and whose certification process has been recognized by the Nuclear Regulatory C~~c~~ommission or an agreement state, and who meets the requirements in Clause E.2.c.iii of this Section. (The names of board certifications that have been recognized by the Nuclear Regulatory C~~c~~ommission or an agreement state will be posted on the NRC's web page.); or

b. who is an authorized user in accordance with Paragraph E.1 of this Section for uses listed in Subdivision E.1.b.i.(b).(vii).[a] or [b] of this Section, Paragraph E.3 of this Section, or equivalent agreement state requirements or Nuclear Regulatory Commission requirements; or

c. – c.i.(e). …

ii. has work experience, under the supervision of an authorized user who meets the requirements in Subsection B or Paragraph E.1, 2, or 3 of this Section, or equivalent agreement state requirements or Nuclear Regulatory Commission requirements. A supervising authorized user who meets the requirements in Subparagraph E.1.b of this Section ~~must~~shall also have experience in administering dosages as specified in Subdivision E.1.b.i.(b).(vii).[a] or [b] of this Section. The work experience ~~must~~shall involve:

(a). – (e). …

(f). administering dosages to patients or human research subjects that includes at least three cases involving the oral administration of less than or equal to 1.22 G~~g~~igabecquerels (33 millicuries) of sodium iodide I-131; and

iii. has obtained written attestation that the individual has satisfactorily completed the requirements in Clauses E.2.c.i and ii of this Section, and has achieved a level of competency sufficient to function independently as an authorized user for medical uses authorized in LAC 33:XV.735.C. The written attestation ~~must~~shall be signed by a preceptor authorized user who meets the requirements in Subsection B or Paragraph E.1, 2, or 3 of this Section, or equivalent agreement state requirements or Nuclear Regulatory Commission requirements. A preceptor authorized user who meets the requirement in Subparagraph E.1.b of this Section ~~must~~shall also have experience in administering dosages as specified in Subdivision E.1.b.i.(b).(vii).[a] or [b] of this Section.

3. Training for the Oral Administration of Sodium Iodide I-131 Requiring a Written Directive in Quantities Greater Than 1.22 Gigabecquerels (33 m~~M~~illicuries). Except as provided in Subsection B of this Section, the licensee shall require an authorized user for the oral administration of sodium iodide I-131 requiring a written directive in quantities greater than 1.22 Gigabecquerels (33 millicuries) to be a physician:

a. who is certified by a medical specialty board whose certification process includes all of the requirements in Clauses E.3.c.i and ii of this Section and whose certification process has been recognized by the Nuclear Regulatory C~~c~~ommission or an agreement state, and who meets the requirements in Clause E.3.c.iii of this Section. (The names of board certifications that have been recognized by the Nuclear Regulatory C~~c~~ommission or an agreement state will be posted on the NRC's web page.); or

b. who is an authorized user in accordance with Paragraph E.1 of this Section for uses listed in Subdivision E.1.b.i.(b).(vii).[b] of this Section, or equivalent agreement state requirements or Nuclear Regulatory Commission requirements; or

c. – c.i.(e). …

ii. has work experience, under the supervision of an authorized user who meets the requirements in Subsection B or Paragraph E.1 or 3 of this Section, or equivalent agreement state requirements or Nuclear Regulatory Commission requirements. A supervising authorized user who meets the requirements in Subparagraph E.1.b of this Section ~~must~~shall also have experience in administering dosages as specified in Subdivision E.1.b.i.(b).(vii).[b] of this Section. The work experience ~~must~~shall involve:

(a). – (e). …

(f). administering dosages to patients or human research subjects that includes at least three cases involving the oral administration of greater than 1.22 G~~g~~igabecquerels (33 millicuries) of sodium iodide I-131; and

iii. has obtained written attestation that the individual has satisfactorily completed the requirements in Clauses E.3.c.i and ii of this Section, and has achieved a level of competency sufficient to function independently as an authorized user for medical uses authorized in LAC 33:XV.735.C. The written attestation ~~must~~shall be signed by a preceptor authorized user who meets the requirements in Subsection B or Paragraph E.1 or 3 of this Section, or equivalent agreement state requirements or Nuclear Regulatory Commission requirements. A preceptor authorized user who meets the requirements in Subparagraph E.1.b of this Section ~~must~~shall also have experience in administering dosages as specified in Subdivision E.1.b.i.(b).(vii).[b] of this Section.

4. Training for the Parenteral Administration of Unsealed Byproduct Material Requiring a Written Directive. Except as provided in Subsection B of this Section, the licensee shall require an authorized user for the parenteral administration requiring a written directive to be a physician:

a. who is an authorized user in accordance with Paragraph E.1 of this Section for uses listed in Subdivision E.1.b.i.(b).(vii).[c] or [d] of this Section, or equivalent agreement state requirements or Nuclear Regulatory Commission requirements; or

b. who is an authorized user in accordance with Subsection F or I of this Section, or equivalent agreement state requirements, Nuclear Regulatory Commission requirements, and who meets the requirements in Subparagraph E.4.d of this Section; or

c. who is certified by a medical specialty board whose certification process has been recognized by the Nuclear Regulatory C~~c~~ommission or an agreement state in accordance with Subsection F or I of this Section, and who meets the requirements in Subparagraph E.4.d of this Section; or

d. – d.i.(e). …

ii. has work experience, under the supervision of an authorized user who meets the requirements in Subsection B or Paragraph E.1 or 4 of this Section, or equivalent agreement state

requirements, or Nuclear Regulatory Commission requirements in the parenteral administration, for which a written directive is required, of any beta emitter, or any photon-emitting radionuclide with a photon energy less than 150 keV, and/or parenteral administration of any other radionuclide for which a written directive is required. A supervising authorized user who meets the requirements in Paragraph E.1 of this Section ~~must~~shall have experience in administering dosages as specified in Subdivisions E.1.b.i.(b).(vii).[c] and/or [d] of this Section. The work experience ~~must~~shall involve:

(a). – (f). …

iii. has obtained written attestation that the individual has satisfactorily completed the requirements in Subparagraph E.4.b or c of this Section, and has achieved a level of competency sufficient to function independently as an authorized user for the parenteral administration of unsealed byproduct material requiring a written directive. The written attestation ~~must~~shall be signed by a preceptor authorized user who meets the requirements in Subsection B or Paragraph E.1 or 4 of this Section, or equivalent agreement state requirements or Nuclear Regulatory Commission requirements. A preceptor authorized user who meets the requirements in Paragraph E.1 of this Section ~~must~~shall have experience in administering dosages as specified in Subdivisions E.1.b.i.(b).(vii).[c] and/or [d] of this Section.

F. …

1. who is certified by a medical specialty board whose certification process has been recognized by the Nuclear Regulatory C~~c~~ommission or an agreement state, and who meets the requirements in Subparagraph F.2.c of this Section. (The names of board certifications that have been recognized by the Nuclear Regulatory C~~c~~ommission or an agreement state will be posted on the NRC's web page.) To have its certification process recognized, a specialty board shall require all candidates for certification to:

1.a. – 2.a.i.(d). …

ii. 500 hours of work experience under the supervision of an authorized user who meets the requirements in this Subsection, Subsection B of this Section or equivalent agreement state requirements or Nuclear Regulatory Commission requirements at a medical institution, involving:

(a). – (f). …

b. has completed three years of supervised clinical experience in radiation oncology under the supervision of an authorized user who meets the requirements in this Subsection, Subsection B of this Section or equivalent agreement state requirements, or Nuclear Regulatory Commission requirements as part of a formal training program approved by the Residency Review Committee for Radiation Oncology of the Accreditation Council for Graduate Medical Education or the Royal College of Physicians and Surgeons of Canada or the Committee on Postdoctoral Training of the American Osteopathic Association. This experience may be obtained concurrently with the supervised work experience required in Subparagraph F.2.a.ii of this Section; and

c. has obtained written attestation, signed by a preceptor authorized user who meets the requirements in this Subsection, Subsection B of this Section or equivalent agreement state requirements, or Nuclear Regulatory Commission requirements that the individual has satisfactorily completed the requirements in Subparagraph F.1.a, or Paragraph F.2.a and b of this Section, and has achieved a level of competency sufficient to function independently as an authorized user of manual brachytherapy sources for the medical uses authorized in LAC 33:XV.741.

G. …

1. who is an authorized user in accordance with Subsection F of this Section, or equivalent agreement state requirements or Nuclear Regulatory Commission requirements; or

2. – 2.b.iv. …

c. has obtained written attestation, signed by a preceptor authorized user who meets the requirements in Subsections B or F and G of this Section, or equivalent agreement state requirements, or Nuclear Regulatory Commission requirements that the individual has satisfactorily completed the requirements in Paragraphs G.1 and 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.

H. …

1. who is certified by a specialty board whose certification process includes all of the requirements in Paragraphs H.2 and 3 of this Section and whose certification process has been recognized by the Nuclear Regulatory Ceommission or an agreement state. (The names of board certifications that have been recognized by the Nuclear Regulatory Ceommission or an agreement state will be posted on the NRC's web page.); or

H.2. – I. …

1. who is certified by a medical specialty board whose certification process has been recognized by the commission or an agreement state, and who meets the requirements in Subparagraph I.2.c and Paragraph I.3 of this Section. (The names of board certifications that have been recognized by the Nuclear Regulatory Ceommission or an agreement state will be posted on the NRC's web page.) To have its certification process recognized, a specialty board shall require all candidates for certification to:

1.a. – 2.a.i.(d). …

ii. 500 hours of work experience under the supervision of an authorized user who meets the requirements in this Subsection, or Subsection B of this Section or equivalent agreement state requirements or Nuclear Regulatory Commission requirements at a medical institution, involving:

(a). – (f). …

b. has completed three years of supervised clinical experience in radiation therapy under the supervision of an authorized user who meets the requirements in this Subsection, or Subsection B of this Section or equivalent agreement state requirements, or Nuclear Regulatory Commission requirements, as part of a formal training program approved by the Residency Review Committee for Radiation Oncology of the Accreditation Council for Graduate Medical Education or the Royal College of Physicians and Surgeons of Canada or the Committee on Postdoctoral Training of the American Osteopathic Association. This experience may be obtained concurrently with the supervised work experience required in ~~Subparagraph~~Clause I.2.a.ii of this Section; and

c. has obtained written attestation that the individual has satisfactorily completed the requirements in Subparagraph I.1.a or Subparagraphs I.2.a and b and Paragraph I.3 of this Section, and has achieved a level of competency sufficient to function independently as an authorized user of each type of therapeutic medical unit for which the individual is requesting authorized user status. The written attestation must be signed by a preceptor authorized user who meets the requirements in this Subsection or Subsection B of this Section or equivalent agreement state requirements or Nuclear Regulatory Commission requirements for an authorized user for each type of therapeutic medical unit for which the individual is requesting authorized user status; and

I.3. – J. …

1. who is certified by a specialty board whose certification process has been recognized by the Nuclear Regulatory C~~c~~ommission or an agreement state, and who meets the requirements in Subparagraph J.2.b and Paragraph J.3 of this Section. (The names of board certifications that have been recognized by the Nuclear Regulatory C~~c~~ommission or an agreement state will be posted on the NRC's web page.) To have its certification process recognized, a specialty board shall require all candidates for certification to:

a. – b.i. …

ii. in a clinical radiation facility providing high-energy, external beam therapy (photons and electrons with energies greater than or equal to 1 million electron volts) and brachytherapy services under the direction of a physician who meets the requirements for an authorized user in Subsection B, F or I of this Section; and

1.c. – 2.a.iv. …

b. has obtained written attestation that the individual has satisfactorily completed the requirements in Subparagraphs J.1.a and b and Paragraph J.3, or Subparagraph J.2.a and Paragraph J.3, of this Section, and has achieved a level of competency sufficient to function independently as an authorized medical physicist for each type of therapeutic medical unit for which the individual is requesting authorized medical physicist status. The written attestation must be signed by a preceptor authorized medical physicist who meets the requirements in this Subsection, Subsection B of this Section or equivalent agreement state requirements or Nuclear Regulatory Commission requirements for an authorized medical physicist for each type of therapeutic medical unit for which the individual is requesting authorized medical physicist status; and

J.3. – K. …

1. who is certified by a specialty board whose certification process has been recognized by the Nuclear Regulatory Ccommission or an agreement state, and who meets the requirements in Subparagraph K.2.b of this Section. (The names of board certifications that have been recognized by the Nuclear Regulatory Ccommission or an agreement state will be posted on the NRC's web page.) To have its certification process recognized, a specialty board shall require all candidates for certification to:

1.a. – 2.b. …

L. ~~Physician Training in a Three-Month Program. A physician who, before July 1, 1984, began a three-month nuclear medicine training program approved by the Accreditation Council for Graduate Medical Education and has successfully completed the program, is exempted from the requirements of Subsection C or D of this Section.~~Reserved.

M. …

AUTHORITY NOTE: Promulgated in accordance with R.S. 30:2001 et seq and 2104.B.1.

HISTORICAL NOTE: Promulgated by the Department of Environmental Quality, Office of Air Quality and Radiation Protection, Radiation Protection Division, LR 18:34 (January 1992), amended LR 24:2106 (November 1998), amended by the Office of Environmental Assessment, Environmental Planning Division, LR 26:2590 (November 2000), LR 30:1186 (June 2004), amended by the Office of Environmental Assessment, LR 31:1061 (May 2005), amended by the Office of the Secretary, Legal Affairs Division, LR 32:814 (May 2006), LR 34:983 (June 2008), LR 34:2121 (October 2008), LR 36:1772 (August 2010), amended by the Office of the Secretary, Legal Division, LR 38:2748 (November 2012), LR 40:**.