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ILLINOIS EMERGENCY MANAGEMENT AGENCY

NOTICE OF PROPOSED AMENDMENTS

- 1) Heading of the Part: Licensing of Radioactive Material
- 2) Code Citation: 32 Ill. Adm. Code 330
- 3)

<u>Section Number:</u>	<u>Proposed Action:</u>
330.20	Amendment
330.40	Amendment
330.220	Amendment
330.Appendix I	New
- 4) Statutory Authority: Implementing and authorized by Sections 9 and 10 of the Radiation Protection Act of 1990 [420 ILCS 40/9 and 10].
- 5) A Complete Description of the Subjects and Issues Involved:

The Illinois Emergency Management Agency (IEMA) is proposing amendments to Part 330 to revise the current exemption for water treatment residuals and to add a licensing category for persons producing or in possession of water treatment residuals. Since the implementation of the current Section 330.40(d) exemption, IEMA became aware of two distinct situations: facilities with high volumes of low-activity waste experience duplicative and, sometimes, unnecessarily restrictive regulation and facilities with low volumes of high-activity waste lack protective standards to negate the environmental and worker exposure concerns that exist. The proposed amendments seek to alleviate both scenarios by reducing IEMA's regulatory presence where possible and implementing appropriate licensing requirements where the radioactivity of produced wastes creates a worker exposure concern.

Specifically, IEMA has collected data to determine background levels of combined radium resulting in increased beneficial reuse of water treatment residuals under the proposed amendments. IEMA is also proposing to incorporate improvements in data reporting to ensure that fields receiving radioactive contaminated water treatment residuals are accurately identified. The proposed amendments also expand disposal options, eliminate IEMA requirements that already exist in Illinois Environmental Protection Agency regulations, and strengthen prohibitions on environmental pollution and noncompliance.

In addition, after implementation of Section 330.40(d), IEMA became aware of very high concentration radioactive wastes that pose both an environmental and worker exposure

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concern. A specific licensing category does not currently exist for such wastes without a heavy regulatory burden on the generator. Disposals were handled on a case by case basis while IEMA provided workers guidance on how to avoid exposure. Therefore, IEMA is proposing to add a general license category specifically addressing these exposure concerns for radioactive contaminated water treatment residuals.

- 6) Any published studies or reports, along with the sources of underlying data, that were used when composing this rulemaking, in accordance with 1 Ill Adm. Code 100.355:
- E-42 Task Force Report – “Review of TENORM in the Oil and Gas Industry”, published by the Conference for Radiation Control Program Directors (CRCPD) (June 2015)
 - “A System’s Guide to the Management of Radioactive Residuals from Drinking Water Treatment Technologies”, EPA 816-F-06-012, United States Environmental Protection Agency (August 2006)
 - “Incidental TENORM: A Guidance for State Solid Waste Managers”, Association of State and Territorial Solid Waste Management Officials (April 2011)
 - “Suggested Guidelines for the Disposal of Drinking Water Treatment Wastes Containing Naturally Occurring Radionuclides”, United States Environmental Protection Agency (July 1990)
 - “A Regulator’s Guide to the Management of Radioactive Residuals from Drinking Water Treatment Technologies”, United States Environmental Protection Agency (July 2005)
 - “ISCORS Assessment of Radioactivity in Sewage Sludge: Radiological Survey Results and Analysis”, ISCORS Technical Report 2003-02, NUREG-1775, EPA 832-R-03-002 (November 2003)
 - “ISCORS Assessment of Radioactivity in Sewage Sludge: Modeling to Assess Radiation Doses”, ISCORS Technical Report 2004-03, NUREG-1783, EPA 832-R-03-002A (February 2005)
 - “ISCORS Assessment of Radioactivity in Sewage Sludge: Recommendations on Management of Radioactive Materials in Sewage Sludge and Ash at Publicly Owned Treatment Works”, ISCORS Technical Report 2004-04, EPA 832-R-03-002B (February 2005)
 - “Fate and Mobility of Radium-226 in Municipal Wastewater Sludge Following Agricultural Landspreading”, Wisconsin Department of Natural Resources, PUBL WW-006 (July 1987)

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- “Radionuclides Notice of Data Availability Technical Support Document”, USEPA Office of Ground Water and Drinking Water, USEPA Office of Indoor Air and Radiation, US Geological Survey (March 2000)
- “A System’s Guide to the Identification and Disposal of Hazardous and Non-Hazardous Water Treatment Plant Residuals”, USEPA 816-F-06-011 (August 2006)
- “Assessing the Impact of Hazardous Constituents on the Mobilization, Transport, and Fate of Radionuclides in RCRA Waste Disposal Units”, Environmental Assessment Division, Argonne National Laboratory, US Dept. of Energy, ANL/EAD/TM-93 (August 2001)
- “Control and Release of Technologically Enhanced Naturally Occurring Radioactive Material (TENORM)”, American National Standards Institute, Inc. (August 2009)
- “Implementation Guidance for Radionuclides”, USEPA 816-F-00-002 (March 2002)
- “Radium in Ground Water from Public-Water Supplies in Northern Illinois”, USGS Fact Sheet 137-99 (September 1999)

7) Will this rulemaking replace an emergency rule currently in effect? No.

8) Does this rulemaking contain an automatic repeal date? No.

9) Does this rulemaking contain incorporations by reference? Yes, 10 CFR 20

10) Are there any other proposed rulemakings pending on this Part? No.

11) Statement of Statewide Policy Objectives:

The proposed amendments seek to eliminate duplicative and unnecessarily restrictive regulations where possible. Additionally, where environmental and worker exposure concerns have been identified, IEMA seeks to implement appropriate controls to apply a consistent protective standard. It is expected that the proposed amendments will decrease administrative costs and afford additional disposal flexibility for approximately half of those currently regulated. For those municipalities that would be covered under a general license, additional activities or expenditures are anticipated for equipment, signage and training to educate workers to avoid radiation exposure.

12) Time, Place and Manner in which interested persons may comment on this Rulemaking:

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Comments on this proposed rulemaking may be submitted in writing for a period of 45 days following publication of this notice. IEMA will consider fully all written comments on this proposed rulemaking submitted during the 45 day comment period. Comments should be submitted to:

Traci Burton
Paralegal Assistant
Illinois Emergency Management Agency
1035 Outer Park Drive
Springfield, Illinois 62704
217/524-0770
Facsimile: 217/524-3698

13) Initial Regulatory Flexibility Analysis:

A) Types of small businesses, small municipalities or not-for-profit corporations affected: Small municipalities and not-for-profit corporations may be affected if they produce or possess water treatment residuals.

B) Reporting, bookkeeping or other procedures required for compliance:

Annual sampling of wastes produced and reporting for demonstration of compliance will be required.

C) Types of professional skills necessary for compliance:

For those systems requiring a general license, a licensed radon professional and professional radiation consultant will be required. Individual holding a specific radioactive material license will be required for waste removal.

AGENCY NOTE: The high-activity wastes generated at these facilities necessitated licensed personnel for removal and handling as low-level radioactive waste prior to the proposed amendments.

14) Regulatory Agenda on which this rulemaking was summarized: July 2016

The full text of the Proposed Amendments begin on the next page:

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TITLE 32: ENERGY

CHAPTER II: ILLINOIS EMERGENCY MANAGEMENT AGENCY

SUBCHAPTER b: RADIATION PROTECTION

PART 330

LICENSING OF RADIOACTIVE MATERIAL

SUBPART A: GENERAL PROVISIONS

Section	
330.10	Purpose and Scope
330.20	Definitions
330.15	Incorporations by Reference
330.30	License Exemption - Source Material
330.40	License Exemption - Radioactive Materials Other Than Source Material

SUBPART B: TYPES OF LICENSES

Section	
330.200	Types of Licenses
330.210	General Licenses - Source Material
330.220	General Licenses - Radioactive Material Other Than Source Material

SUBPART C: SPECIFIC AND GENERAL LICENSES

Section	
330.240	Filing Applications for Specific Licenses
330.250	General Requirements for the Issuance of Specific Licenses
330.260	Special Requirements for Issuance of Certain Specific Licenses for Radioactive Materials
330.270	Special Requirements for Specific Licenses of Broad Scope
330.280	Special Requirements for a Specific License to Manufacture, Assemble, Repair, or Distribute Commodities, Products, or Devices that Contain Radioactive Material
330.290	Requirements for Emergency Plans
330.300	Issuance of Specific Licenses
330.310	Terms and Conditions of Specific and General Licenses
330.320	Renewal Requirements for Specific Licenses

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- 330.325 Termination Requirements for Specific Licenses and Locations of Use
- 330.330 Renewal of Licenses
- 330.340 Amendment of Licenses at Request of Licensee
- 330.350 Agency Action on Application to Renew or Amend
- 330.360 Persons Possessing a License for Source, Byproduct, or Special Nuclear Material in Quantities Not Sufficient to Form a Critical Mass on Effective Date of This Part (Repealed)
- 330.370 Persons Possessing Accelerator-Produced or Naturally-Occurring Radioactive Material on Effective Date of This Part (Repealed)
- 330.400 Transfer of Material
- 330.500 Modification and Revocation of Licenses
- 330.900 Reciprocal Recognition of Licenses
- 330.950 Nationally Tracked Sources

SUBPART D: TRANSPORTATION (Repealed)

- 330.1000 Transportation of Radioactive Materials (Repealed)
- 330.APPENDIX A Exempt Concentrations
- 330.APPENDIX B Exempt Quantities
- 330.APPENDIX C Quantities of Radioactive Materials Requiring Consideration of the Need for an Emergency Plan for Responding to a Release
- 330.TABLE A Group I (Repealed)
- 330.TABLE B Group II (Repealed)
- 330.TABLE C Group III (Repealed)
- 330.TABLE D Group IV (Repealed)
- 330.TABLE E Group V (Repealed)
- 330.TABLE F Group VI (Repealed)
- 330.APPENDIX D Limits for Broad Licenses (Section 330.270)
- 330.APPENDIX E List of Specialty Board Certifications Recognized by the Agency Until October 24, 2007 (Repealed)
- 330.APPENDIX F Nationally Tracked Source Thresholds
- 330.APPENDIX G Financial Surety Arrangements (Section 330.250(c)(1)(D)) (Repealed)
- 330.APPENDIX H Wording of Financial Surety Arrangements (Section 330.250(c)(1)(E)) Repealed
- 330.APPENDIX I TENORM Awareness Training

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AUTHORITY: Implementing and authorized by the Radiation Protection Act of 1990 [420 ILCS 40].

SOURCE: Filed April 20, 1974, by the Department of Public Health; transferred to the Department of Nuclear Safety by P.A. 81-1516, effective December 3, 1980; amended at 5 Ill. Reg. 9586, effective September 10, 1981; codified at 7 Ill. Reg. 17492; recodified at 10 Ill. Reg. 11268; amended at 10 Ill. Reg. 17315, effective September 25, 1986; amended at 15 Ill. Reg. 10632, effective July 15, 1991; amended at 18 Ill. Reg. 5553, effective March 29, 1994; emergency amendment at 22 Ill. Reg. 6242, effective March 18, 1998, for a maximum of 150 days; amended at 22 Ill. Reg. 14459, effective July 27, 1998; amended at 24 Ill. Reg. 8042, effective June 1, 2000; amended at 27 Ill. Reg. 5426, effective March 17, 2003; recodified from the Department of Nuclear Safety to the Illinois Emergency Management Agency at 27 Ill. Reg. 13641; amended at 30 Ill. Reg. 8928, effective April 28, 2006; amended at 32 Ill. Reg. 6462, effective April 7, 2008; amended at 32 Ill. Reg. 9199, effective June 13, 2008; amended at 33 Ill. Reg. 4918, effective March 23, 2009; amended at 35 Ill. Reg. 2931, effective February 7, 2011; amended at 35 Ill. Reg. 3969, effective February 28, 2011; emergency amendment at 35 Ill. Reg. 5654, effective March 21, 2011, for a maximum of 150 days; amended at 35 Ill. Reg. 9009, effective June 2, 2011; amended at 37 Ill. Reg. 5789, effective April 16, 2013; amended at 37 Ill. Reg. 7960, effective May 31, 2013; amended at 38 Ill. Reg. 21451, effective October 31, 2014; amended at 39 Ill. Reg. _____, effective _____.

Section 330.20 Definitions

"Authorized nuclear pharmacist" means a pharmacist who:

Meets the requirements in Section 330.260(c)(18), (19) and (21); or

Is identified as an authorized nuclear pharmacist on:

A specific license issued by the Nuclear Regulatory Commission or Agreement State that authorizes medical use or the practice of nuclear pharmacy; or

A permit issued by a Nuclear Regulatory Commission master material licensee that authorizes medical use or the practice of nuclear pharmacy; or

A permit issued by a Nuclear Regulatory Commission or Agreement State

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broad scope medical use licensee that authorizes medical use or the practice of nuclear pharmacy; or

A permit issued by a Nuclear Regulatory Commission master material license broad scope medical use permittee that authorizes medical use or the practice of nuclear pharmacy; or

Is identified as an authorized nuclear pharmacist by a commercial nuclear pharmacy that has been authorized to identify authorized nuclear pharmacists; or

Is designated as an authorized nuclear pharmacist in accordance with Section 330.260(c)(16).

“Combined Radium” means the value determined by the addition of the results of the analysis of radium-226 and the analysis of radium-228.

"Consortium" means an association of medical use licensees and a PET radionuclide production facility in the same geographical area that jointly own or share in the operation and maintenance cost of the PET radionuclide production facility that produces PET radionuclides for use in producing radioactive drugs within the consortium for noncommercial distributions among its associated members for medical use. The PET radionuclide production facility within the consortium must be located at an educational institution or a medical facility.

“Drinking water treatment facility” means a public water system that serves at least 15 service connections used by year-round residents or regularly serves at least 25 year-round residents. Also known as Community Water System in 35 Ill. Adm. Code 611.101. For purposes of water treatment residuals only, “treatment” means any process that changes the physical, chemical, microbiological or radiological properties of water, is under the control of the supplier and is not a point-of-use treatment device or a point-of-entry treatment device as defined in 35 Ill. Adm. Code 611.101. Treatment includes, but is not limited to, aeration, coagulation, sedimentation, filtration, activated carbon treatment, disinfection and fluoridation.

"General license" means a license, as set forth in this Part and 32 Ill. Adm. Code 341, which is effective without the filing of an application to transfer, acquire,

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own, possess or use quantities of, or devices or equipment utilizing, radioactive material [420 ILCS 40/4(d)], although the filing of a certificate with the Agency may be required by the particular general license. The general licensee is subject to all other applicable portions of 32 Ill. Adm. Code: Chapter II and any limitations of the general license.

"Nationally tracked source" is a sealed source containing a quantity equal to or greater than Category 1 or Category 2 levels of any radioactive material listed in Appendix F. In this context a sealed source is defined as radioactive material that is sealed in a capsule or closely bonded in a solid form and is not exempt from regulatory control. It does not mean material encapsulated solely for disposal, or nuclear material contained in any fuel assembly, subassembly, fuel rod, or fuel pellet. Category 1 nationally tracked sources are those containing radioactive material at a quantity equal to or greater than the Category 1 threshold. Category 2 nationally tracked sources are those containing radioactive material at a quantity equal to or greater than the Category 2 threshold but less than the Category 1 threshold.

"Naturally occurring radioactive material" or "NORM" means materials which may contain any of the primordial radionuclides or radioactive elements as they occur in nature, such as radium, uranium, thorium, potassium and their radioactive decay products, that are undisturbed as a result of human activities. NORM does not include accelerator produced, byproduct, source or special nuclear material.

"Protective actions" means actions taken by members of the public to protect themselves from radiation from an incident involving radioactive material, which may include sheltering, evacuation, relocation, control of access, administration of radiation-protective drugs, decontamination of persons, decontamination of land or property, or control of food or water.

"Specific license" means a license, issued after application, to use, manufacture, produce, transfer, receive, acquire, own, or possess quantities of, or devices or equipment utilizing, radioactive materials [420 ILCS 40/4(m)]. The licensee is subject to all applicable portions of 32 Ill. Adm. Code: Chapter II, as well as any limitations specified in the licensing document.

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“Technologically enhanced naturally occurring radioactive material” or “TENORM” means naturally occurring radioactive material disturbed or altered from natural settings or present in a technologically enhanced state due to past or present human activities and practices, which may result in a relative increase in radionuclide concentrations, radiation exposures and risks to the public and threat to the accessible environment above background radiation levels. Such activities and practices include manufacturing, mineral extraction or water processing. TENORM does not include source material, special nuclear material, by-product material or radium sources regulated by the Energy Policy Act of 2005.

“Wastewater treatment facility” means a treatment works owned by a municipality, sanitary district, county or State agency and which treats domestic and industrial wastes collected by a publicly owned or regulated sewer system.

“Water treatment residuals” means biosolids, sludge, filter media, anthracite, scales or other solids, either alone or as a component of an effluent, that are technologically enhanced in combined radium concentration (radium-226, radium-228 or associated progeny) as a result of the treatment of water or sewage containing naturally occurring radium from groundwater.

(Source: Amended at 39 Ill. Reg. _____, effective _____)

Section 330.40 License Exemption-Radioactive Materials Other Than Source Material

a) Exempt Concentrations

- 1) Any person is exempt from this Part to the extent that person receives, possesses, uses, transfers, owns or acquires products containing radioactive material introduced in concentrations not in excess of those listed in Appendix A provided they have been introduced or transferred as described in subsection (a)(2) or (3). This Section shall not be deemed to authorize the import of radioactive materials or products containing radioactive materials.
- 2) No person may introduce radioactive material into a product or material knowing or having reason to believe that it will be transferred to persons exempt under subsection (a)(1) or equivalent regulations of the U.S. Nuclear Regulatory Commission (NRC) (10 CFR 30.14) or an Agreement

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State, except in accordance with a specific license issued pursuant to Section 330.280(a).

- 3) A manufacturer, processor or producer of a product or material is exempt from the requirements for a license set forth in this Part to the extent that person transfers radioactive material contained in a product or material in concentrations not in excess of those specified in Appendix A and introduced into the product or material by a licensee holding a specific license issued by the Agency expressly authorizing that introduction. This exemption does not apply to the transfer of radioactive 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.

b) Exempt Quantities

- 1) Except as restricted by subsections (b)(2) through (4), any person is exempt from this Part to the extent that person receives, possesses, uses, transfers, owns or acquires radioactive material in individual quantities each of which does not exceed the applicable quantity set forth in Appendix B. Furthermore, any person is exempt from this Part to the extent that person possesses, uses, transfers or owns radioactive material that was received or acquired before September 25, 1971 under the general license then provided by the regulations of the U.S. Atomic Energy Commission (10 CFR 31.4) or the equivalent regulations of an Agreement State.

AGENCY NOTE: Capsules distributed pursuant to 10 CFR 32.21 that contain carbon-14 urea are only authorized for "in-vivo" diagnostic use for humans. Any person who desires to use the capsules for research involving human subjects shall apply for and receive a specific license from the Agency. Nothing in this Section relieves persons from complying with applicable Federal and State requirements governing receipt, administration and use of drugs.

- 2) This subsection (b) does not authorize the production, packaging or repackaging of radioactive material for purposes of commercial distribution, or the incorporation of radioactive material into products intended for commercial distribution.

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- 3) No person may, for purposes of commercial distribution, transfer radioactive material in the individual quantities set forth in Appendix B, knowing or having reason to believe that such quantities of radioactive material will be transferred to persons exempt under this subsection (b) or equivalent regulations of NRC or an Agreement State, except in accordance with a specific license issued by NRC pursuant to 10 CFR 32.18 or 32.21, or by the Agency pursuant to Section 330.280(b), which states that the radioactive material may be transferred by the licensee to persons exempt under this subsection (b) or the equivalent regulations of the U.S. Nuclear Regulatory Commission or an Agreement State.
- 4) No person shall, for purposes of producing an increased radiation level, combine quantities of radioactive material covered by the exemption in subsection (b)(1) so that the aggregate quantity exceeds the limits set forth in Appendix B, except for radioactive material combined within a device placed in use before May 3, 1999, or as otherwise permitted by this Part.

AGENCY NOTE: 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 DC 20555.

c) Exempt Items

- 1) Certain Items Containing Radioactive Material. Except for persons who apply radioactive material to, or persons who incorporate radioactive material into, the following products or persons who initially transfer for sale or distribution the following products, any person is exempt from this Part to the extent that he or she receives, possesses, uses, transfers, owns or acquires the following products:

AGENCY NOTE: 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

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exempted from regulatory requirements may be obtained only from the U.S. Nuclear Regulatory Commission, Washington DC 20555.

- A) Timepieces or hands or dials containing not more than the following specified quantities of radioactive material and not exceeding the following specified radiation dose rate:
- i) 925 MBq (25 mCi) of tritium per timepiece;
 - ii) 185 MBq (5 mCi) of tritium per hand;
 - iii) 555 MBq (15 mCi) of tritium per dial (bezels when used shall be considered as part of the dial);
 - iv) 3.7 MBq (100 microCi) of promethium-147 per watch or 7.4 MBq (200 microCi) of promethium-147 per any other timepiece;
 - v) 740 kBq (20 microCi) of promethium-147 per watch hand or 1.48 MBq (40 microCi) of promethium-147 per other timepiece hand;
 - vi) 2.22 MBq (60 microCi) of promethium-147 per watch dial or 4.44 MBq (120 microCi) of promethium-147 per other timepiece dial (bezels when used shall be considered as part of the dial);
 - vii) The radiation dose rate from hands and dials containing promethium-147 will not exceed, when measured through 50 milligrams/square centimeter of absorber: for wrist watches, 1 microGy (100 microrad)/hour at 10 centimeters from any surface; for pocket watches, 1 microGy (100 microrad)/hour at 1 centimeter from any surface; for any other timepiece, 2 microGy (200 microrad)/hour at 10 centimeters from any surface; or
 - viii) 37 kBq (1 microCi) of radium-226 per timepiece in intact timepieces manufactured prior to November 30, 2007.

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- B) Precision balances containing not more than 37 MBq (1 mCi) of tritium per balance or not more than 18.5 MBq (500 microCi) of tritium per balance part manufactured before December 17, 2007.
- C) Marine compasses containing not more than 27.8 GBq (750 mCi) of tritium gas and other marine navigational instruments containing not more than 9.25 GBq (250 mCi) of tritium gas manufactured before December 17, 2007.
- D) Electron tubes; provided that each tube does not contain more than one of the following specified quantities of radioactive material:
 - i) 5.55 GBq (150 mCi) of tritium per microwave receiver protector tube or 370 MBq (10 mCi) of tritium per any other electron tube;
 - ii) 37 kBq (1 microCi) of cobalt-60;
 - iii) 185 kBq (5 microCi) of nickel-63;
 - iv) 1.11 MBq (30 microCi) of krypton-85;
 - v) 185 kBq (5 microCi) of cesium-137; or
 - vi) 1.11 MBq (30 microCi) of promethium-147;

and provided further, that the radiation dose rate from each electron tube containing radioactive material will not exceed 10 microGy (1 mrad)/hour at 1 centimeter from any surface when measured through 7 milligrams/square centimeter of absorber.

AGENCY NOTE: For purposes of subsection (c)(1)(D), "electron tubes" include spark gap tubes, power tubes, gas tubes including glow lamps, receiving tubes, microwave tubes, indicator tubes, pick-up tubes, radiation detection tubes and any other completely

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sealed tube that is designed to conduct or control electrical currents.

- E) Ionizing radiation measuring instruments containing, for purposes of internal calibration or standardization, one or more sources of radioactive material, provided that:
 - i) Each source contains no more than one exempt quantity set forth in Appendix B; and
 - ii) Each instrument contains no more than 10 exempt quantities. For purposes of this requirement, an instrument's sources may contain one or more radionuclides and an individual exempt quantity may be composed of fractional parts of one or more of the exempt quantities in Appendix B, provided that the sum of the fractions shall not exceed unity.

AGENCY NOTE: For purposes of subsection (c)(1)(E), 1.85 kBq (50 nCi) of americium-241 is considered an exempt quantity.

- F) Ionization chamber smoke detectors containing not more than 37 kBq (1 microCi) of americium-241 per detector in the form of a foil and designed to protect life and property from fires.
- G) Static elimination devices designed for use as static eliminators that contain, as a sealed source or sources, radioactive material consisting of a total of not more than 18.5 MBq (500microCi) of polonium-210 per device.
- H) 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 μ Ci) of polonium-210 per device or of a total of not more than 1.85 GBq (50mCi) of hydrogen-3 (tritium) per device.
- I) Devices described in subsections (c)(1)(G) and (H) authorized before October 23, 2015 for use under the general license then

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provided in Section 330.220(a) and manufactured, tested and labeled by the manufacturer in accordance with the specifications contained in a specific license issued by the Agency or the equivalent regulations of NRC or of an Agreement State.

- 2) Self-Luminous Products Containing Radioactive Material
 - A) Tritium, Krypton-85 or Promethium-147. Except for persons who manufacture, process or produce self-luminous products containing tritium, krypton-85 or promethium-147, any person is exempt from this Part to the extent that person receives, possesses, uses, transfers, owns or acquires tritium, krypton-85 or promethium-147 in self-luminous products manufactured, processed, produced, imported or transferred in accordance with a specific license, issued by NRC pursuant to 10 CFR 32.22, which authorizes the transfer of the product to persons who are exempt from regulatory requirements. The exemption in this subsection (c)(2)(A) does not apply to tritium, krypton-85 or promethium-147 used in products for frivolous purposes or in toys or adornments. NRC shall make this determination of exemption.
 - B) Any person who desires to manufacture, process, produce or initially transfer for sale or distribution self-luminous products containing tritium, krypton-85 or promethium-147 for use under subsection (c)(2)(A) should apply for a license under 10 CFR 32.22 and for a certificate of registration pursuant to 10 CFR 32.210 with NRC.
 - C) Radium-226. Any person is exempt from this Part to the extent that person receives, possesses, uses, transfers or owns articles containing less than 3.7 kBq (100 nCi) of radium-226 that were acquired prior to May 1, 1974.
- 3) Gas and Aerosol Detectors Containing Radioactive Material
 - A) Except for persons who manufacture, process, produce or initially transfer for sale and distribution gas and aerosol detectors containing radioactive material, any person is exempt from 32 III.

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Adm. Code: Chapter II, Subchapters b and d to the extent that person receives, possesses, uses, transfers, owns or acquires radioactive material in gas and aerosol detectors designed to protect life or property from fires and airborne hazards. The detectors shall be manufactured, processed, produced or initially transferred in accordance with a specific license issued by NRC pursuant to 10 CFR 32.26 that authorizes transfer of the detectors to persons who are exempt from regulatory requirements and who have been issued a certificate of registration in accordance with 10 CFR 32.210 from NRC.

- B) Gas and aerosol detectors previously manufactured and distributed to general licensees in accordance with a specific license issued by an Agreement State or a former Licensing State shall be considered exempt under subsection (c)(3)(A), provided that the device is labeled in accordance with the specific license and provided further that it meets the requirements of 10 CFR 32.26 in effect at the time of distribution. This exemption also covers gas and aerosol detectors manufactured or distributed before November 30, 2007, in accordance with a specific license issued by an Agreement State under comparable provisions to NRC's 10 CFR 32.26 authorizing distribution to persons exempt from regulatory requirements.

4) Certain Industrial Devices

- A) Except for persons who manufacture, process, produce or initially transfer for sale or distribution industrial devices containing byproduct material designed and manufactured for the purpose of detecting, measuring, gauging or controlling thickness, density, level, interface location, radiation, leakage or qualitative or quantitative chemical composition, or for producing an ionized atmosphere, any person is exempt from the requirements for a license set forth in Section 81 of the Act and from 32 Ill. Adm. Code: Chapter II, Subchapters b and d to the extent that person receives, possesses, uses, transfers, owns or acquires byproduct material, in these certain detecting, measuring, gauging or controlling device and certain devices for producing an ionized

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atmosphere, and manufactured, processed, produced or initially transferred in accordance with a specific license issued under NRC's 10 CFR 32.30, which license authorized the initial transfer of the device for use under this Section. This exemption does not cover sources not incorporated into a device, such as calibration and reference sources.

- B) Any person who desires to manufacture, process, produce or initially transfer for sale or distribution industrial devices containing byproduct material for use under subsection (c)(4)(A), should apply for a license under 10 CFR 32.30 and for a certificate of registration in accordance with 10 CFR 32.210 from NRC.

AGENCY NOTE: 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 DC 20555.

- d) ~~Exemption for Water Treatment Residuals Material~~

~~1) Persons producing or in possession of water treatment residuals with concentrations of combined radium less than or equal to 200 pCi/g (dry weight basis) are exempt from the licensing requirements provided they comply with this subsection (d).~~

~~2) Persons producing or in possession of water treatment residuals with concentrations of combined radium greater than 200 pCi/g (dry weight basis) are not exempt and shall comply with licensing requirements in this Part.~~

~~1) Persons producing or in possession of residuals or sludge resulting from the treatment of water or sewage and containing naturally occurring radium from groundwater with concentrations of total radium (sum of radium-226 and radium-228 concentrations) less than or equal to 200 pCi/g (dry weight basis) are exempt from the licensing requirements provided they comply with this subsection (d). Persons producing or in possession of residuals or sludge resulting from the treatment of water or sewage and containing naturally occurring radium from groundwater with concentrations of total radium greater~~

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~~than 200 pCi/g (dry weight basis) are not exempt and shall comply with requirements in 32 Ill. Adm. Code 330.~~

3) No person producing or in possession of water treatment residuals shall cause contamination such that unrestricted release is precluded by the decontamination guidelines specified in 32 Ill. Adm. Code 340. Appendix A.

4) No person producing or in possession of water treatment residuals shall cause violations of the requirements of Title 35 of the Ill. Adm. Code, Subtitles C and G, as implemented by the Illinois Environmental Protection Agency (IEPA).

5) Each person exempt under this subsection (d) shall conduct operations with water treatment residuals so that individual members of the public will not exceed 1 millisievert (0.1 rem) TEDE annually from all licensed or registered sources of radiation, including water treatment residuals.

6) Persons found to have caused or contributed to violations of subsections (d)(3) or (d)(4), as a result of noncompliance with the requirements in subsection (d) may:

A) be required to remediate under the oversight and approval of the Agency;

B) be required to reimburse for remediation efforts initiated on their behalf pursuant to 32 Ill. Adm. Code 310.74; and

C) be made to comply with the radioactive material licensing requirements in this Part.

~~7) The following individuals or entities producing or in possession of water treatment residuals exempt under subsection (d)(1) shall or sludge resulting from the treatment of water or sewage and containing naturally occurring radium from groundwater with concentrations of total radium less than or equal to 200 pCi/g (dry weight basis) must register directly with the Agency:~~

AGENCY NOTE: Persons required to register under this subsection are referred to as registrants for the purposes of subsection (d).

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~~A)~~ Owners and operators of drinking water treatment facilities permitted by the IEPA, who treat groundwater with a treatment technology identified in Table 2 of subsection (d)(7)(B).

~~BA)~~ Owners and operators of drinking water treatment facilities, permitted by IEPA, whose plants that produce residuals or sludge resulting from the treatment of water or sewage and containing radium occurring naturally from groundwater sources and utilized treatment technologies are identified in the applicable tables below; and

Table 1. Aquifers designated to contribute elevated concentrations of radium to groundwater:

- Cambrian
- Ordovician
- Devonian
- Silurian
- Any other aquifer that gives rise to a maximum contaminant level for combined radium as defined by the Safe Drinking Water Act.

Table 2. Treatment Technologies Capable of Concentrating Radium:

- Ion Exchange
- Hydrous Manganese Oxide Feed or Filters
- Greensand filters
- Activated carbon or Anthracite Filters
- Lime Softening
- Reverse Osmosis
- Any other treatment technology that increases the radium concentration in the media or resulting water treatment residuals beyond that which is naturally present.

~~C)~~ Owners and operators of wastewater treatment facilities, permitted by IEPA, and receiving treatment process backwash from a drinking water treatment facility identified in subsection (d)(7)(B).

~~DB)~~ Owners and operators of Illinois Environmental Protection Agency (IEPA) permitted municipal solid waste landfills (Subtitle D) if the water treatment residuals or sludge is generated by a registrant identified in

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subsections (d)(7)(A), (d)(7)(B) or (d)(7)(C) are disposed of in those landfills; ~~and~~

~~E~~) Applicators who apply to agricultural lands water treatment residuals generated by a registrant identified in subsections (d)(7)(B) or (d)(7)(C) or sludge resulting from the treatment of water or sewage containing radium occurring naturally from groundwater; and

~~F~~) Any other person or entity that the Agency determines is required to register under the provisions of the Radiation Protection Act of 1990 [420 ILCS 40].

~~83~~) Registrants identified in subsection (d)(7) Owners and operators of facilities or plants that produce or are in possession of water treatment residuals exempt under subsection (d)(1) or sludge resulting from the treatment of water or sewage and containing radium in concentration less than or equal to 200 pCi/g (dry weight basis) occurring naturally from groundwater are will be exempt from the licensure and fee requirements of the Radiation Protection Act of 1990 [420 ILCS 40].

~~94~~) Registrants identified in subsection (d)(7) may dispose of water treatment residuals Residuals or sludge resulting from the treatment of water or sewage and containing naturally occurring radium from groundwater may be disposed of in accordance with the following provisions and the requirements of IEPA and the regulations of the Illinois Pollution Control Board (Title 35 of the Ill. Adm. Code, Subtitles C and G, and Part 394), as implemented by IEPA:

A) If the concentration level of combined radium in the water treatment residuals ~~or sludge~~ is less than or equal to 100 pCi/g (dry weight basis):

i) the water treatment residuals ~~or sludge~~ may be disposed of in an IEPA permitted municipal solid waste landfill (Subtitle D) authorized to accept water treatment residuals provided:

- the combined radium concentration in pCi/g (dry weight basis) has been determined by a laboratory meeting the accreditation requirements in subsection (d)(11) with methods approved by the Agency or by a screening method approved by the Agency;

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- the water treatment residuals ~~or sludge~~ are covered during transportation; ~~and~~
 - the water treatment residuals ~~or sludge~~ that are easily dispersible must be packaged or stabilized to prevent dispersion during transportation and/or landfill placement; and
 - there is at least 10 feet of non-contaminated overburden between the water treatment residuals ~~or sludge~~ and grade level (at the time of landfill closure).
- ii) the water treatment residuals ~~or sludge~~ may be used for soil conditioning purposes on agricultural crop land (e.g., corn, soybeans) provided:
- land application is performed in accordance with and under the authorization of a current IEPA land application permit;
 - ~~that use is in accordance with 35 Ill. Adm. Code 309.208; and~~
 - the combined radium concentration of the ~~radium in the~~ water treatment residuals ~~or sludge~~ (in pCi/g, dry weight basis) has been determined by a laboratory meeting the accreditation standards in subsection (d)(1) with methods approved by the Agency ~~shall be determined by laboratory analysis; and~~
 - the ~~concentration level~~ of combined radium in the water treatment residuals ~~or sludge~~ and the application rate is such that, after the water treatment residuals ~~are or sludge~~ is mixed with soil (for agricultural use), the cumulative increase of the ~~combined total~~ radium-226 and radium-228 combined concentration in the soil does not exceed 1.0 pCi/g (dry weight basis, an addition of 1778 microCi/acre); ~~and~~

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- this increased limit applies to the sum of all land applications of water treatment residuals ~~or sludge~~ on a specific tax parcel of land; ~~and~~
- at no time shall the application of water treatment residuals ~~or sludge~~ result in the ~~combined total~~ radium concentration in the soil exceeding 3.10 pCi/g (the mean natural background as determined by the Agency of 2.10 pCi/g and the soil concentration increase limit of 1.0 pCi/g due to water treatment residuals ~~or sludge~~ application); ~~and~~
- the landowner or an authorized agent of the landowner must acknowledge, on a form issued by the Agency, that he or she is aware that water treatment residuals ~~are or sludge containing radium is~~ being applied to the land (this acknowledgement must be updated as landownership changes); ~~and~~
- prior to using a parcel of land for the application of water treatment residuals ~~or sludge containing radium~~ for the first time, the generator must determine the ~~combined total~~ radium concentration in the soil; ~~using the soil sampling protocol specified below:~~
 - soil sample collection shall be conducted so as to be representative of the entire water treatment residual application site;
 - ~~Soil sample collection shall be conducted so as to be representative of the entire sludge application site. Soil Plow Zone — one soil sample shall be collected per 8 acres of sludge application site area to a depth of 12 inches. Each soil sample shall be taken as a homogenous mixture composed of at least 10 samples randomly collected within the 8-acre area; or~~

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- ~~Sampling protocols in compliance with the 24th edition of the Illinois Agronomy Handbook as published by the University of Illinois Extension Service (with sampling depth increased to 12 inches) (Pubs Plus, 1917 South Wright Street, Champaign IL 61820, 217/333-2007, PubsPlus@illinois.edu, 2009); and~~

- ~~Testing protocol specified by the Agency; and~~

~~AGENCY NOTE: The Agency will develop and provide a guidance document on residuals and sludge sampling, acceptable analysis methods and Agency reporting requirements.~~

- ~~lands used for the application must have a pH equal to or greater than 6.0, have a 6-inch soil layer with a minimum clay content of at least 18% within the top 5 feet and above bedrock and the groundwater level (as determined by the County Soil Survey Book), and a 6-inch layer with an organic content of at least 12 tons/acre within the top 5 feet and above bedrock and the groundwater level (as determined by site-specific testing); and~~

- ~~tax parcels of landlands receiving application of water treatment residuals or sludge containing radium shall not be used for the cultivation of tobacco; and~~

- ~~when the cumulative increase of the radium concentration in the soil is determined by calculation to be 0.8 pCi/g or when the total radium in soil is calculated to be 2.8 pCi/g (based on initial testing and subsequent applications of residuals or sludge containing radium), the generator must repeat the soil sampling and analysis to determine the actual total radium concentration in the soil and report the findings to the Agency; and~~

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- when calculating the increase in combined radium concentration, a soil density value of 90 pounds/cubic foot and a mixing depth of 1 foot should be used.

iii) an alternative method of disposal may be reviewed and approved by IEMA, prior to disposal, in accordance with 32 Ill. Adm. Code 340.1020.

B) If the concentration level of combined radium in the water treatment residuals ~~or sludge~~ is greater than 100 pCi/g (dry weight basis) and less than or equal to 200 pCi/g (dry weight basis):

- i) in accordance with 32 Ill. Adm. Code 340.1020, the method of disposal ~~shall~~must be reviewed and approved by IEMA ~~DNS~~ in advance; ~~or and~~
- ii) the water treatment residuals ~~or sludge~~ may be disposed of in a licensed low-level radioactive waste disposal facility.

~~5) — By June 1, 2011, all persons applying water treatment residuals or sewage treatment sludge containing radium to land in Illinois must sample fields currently being used for land application using a sampling and testing protocol specified by the Agency to determine the total radium concentration of the soil and report the findings to the Agency. Any field that has a total radium concentration greater than 3.0 pCi/g may no longer be used for the land application of water treatment residuals or sewage treatment sludge containing radium.~~

~~106)~~ On an annual basis, each registrant ~~person~~ producing water treatment residuals with a combined radium concentration greater than 3.1 pCi/g (dry weight basis) ~~shall~~ or sewage treatment sludge containing radium must report, in a manner specified by the Agency, the following:

- A) Registrants ~~Persons~~ who dispose of water treatment residuals ~~or sewage treatment sludge containing radium~~ in an IEPA permitted municipal solid waste landfill (Subtitle D) ~~shall~~must report:
 - i) the quantity of water treatment residuals ~~disposed~~ or sludge containing radium; ~~and~~

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- ii) the concentration of combined radium (in pCi/g (dry weight basis)) contained in the water treatment residuals ~~or sludge; and~~
 - iii) the dates the water treatment residuals ~~or sludge~~ were disposed of in a landfill; ~~and~~
 - iv) the name and location of the landfill receiving these water treatment residuals ~~or sludge~~; and
 - v) any additional information deemed appropriate by the Agency.
- B) ~~Registrants~~ Persons who land apply water treatment residuals ~~or sewage treatment sludge containing radium must shall~~ report:
- i) ~~the tax parcel identification number of lands receiving application of water treatment residuals; location and background radium concentrations, as determined prior to use for land application, of the field receiving the land application of residuals or sludge containing radium; and~~
 - ii) the county, township, section and range in which the tax parcel lies; ~~the concentration of radium in pCi/g (dry weight basis) in the residuals or sludge; and~~
 - iii) the tillable acres for the tax parcel; ~~the application rate in dry tons/acre; and~~
 - iv) the total dry tons of water treatment residuals applied to the tax parcel;
 - v) the concentration of combined radium (in pCi/g (dry weight basis)) contained in the water treatment residuals;
 - vi) the dates the water treatment residuals were land applied; and
 - iv) ~~the date of the land application; and~~

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~~vii~~) any additional information deemed appropriate by the Agency.

C) Registrants who dispose of water treatment residuals approved by the Agency under 32 Ill. Adm. Code 340.1020 shall report annually using a format approved by the Agency.

117) All analysis of water treatment residuals or soil sludge shall~~must~~ be conducted:

A) ~~By~~ a laboratory certified by the U.S. Environmental Protection Agency, International Organization of Standardization, ISO17025, "General Requirements for the Competence of Testing and Calibration Laboratories" or the National Environmental Laboratory Accreditation Conference (NELAC) to perform radiological analysis, and the combined radium concentration of radium will be determined by a method approved by the Agency;

B) The frequency of water treatment residual analysis shall be determined by the radium sampling frequency specified in the registrant's IEPA land application permit. Where an IEPA permit does not specify a radium sampling frequency or for landfill or alternative disposals approved by the Agency, sample frequency shall be no less than one representative sample per year; and

C) Representative sampling of water treatment residuals from a drinking water treatment facility shall be conducted, as applicable, according to standard reference American Water Works Association B100. To the extent practicable, the samples shall be collected prior to removal of the water treatment residuals from the treatment system.

128) Registrants~~Owners and operators of facilities~~ that produce exempt water treatment residuals or sludge that are disposed of in accordance with subsection (d)(9) and applied or disposed of in a landfill are not subject to the registration requirements specified in Section 4 and the fees specified in Section 13 of the Illinois Low-Level Radioactive Waste Management Act [420 ILCS 20/4 and 13] and are not subject to the reporting requirements of Access to Facilities for Treatment, Storage, or Disposal of Low-Level Radioactive Waste (32 Ill. Adm. Code 609) and Registration of Low-Level Radioactive Waste Generators (32 Ill. Adm. Code 620).

139) Registrants~~Owners and operators of facilities~~ that produce water treatment residuals or sludge that are disposed of in a licensed low-level radioactive waste disposal facility or

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a Subtitle C landfill are subject to the registration requirements specified in Section 4 and the fees specified in Section 13 of the Illinois Low-Level Radioactive Waste Management Act and are subject to the reporting requirements of 32 Ill. Adm. Code 609 and 620.

14) The Agency may elect to waive the requirement for a wastewater treatment facility identified under subsection (d)(7)(C) to be a registrant if it is demonstrated that the facility's water treatment residuals are not technologically enhanced by a drinking water treatment facility identified in subsection (d)(7)(B).

15) Registrants shall comply with all other applicable federal or State statutes and regulations.

16) Registrants shall maintain records showing compliance with this subsection (d) for a period of five years. Each registrant shall make records available for Agency inspection.

(Source: Amended at 39 Ill. Reg. _____, effective _____)

Section 330.220 General Licenses – Radioactive Material Other Than Source Material

- a) Certain Measuring, Gauging or Controlling Devices and Certain Devices for Producing Light or an Ionized Atmosphere
- 1) A general license is hereby issued to commercial and industrial firms and to research, educational and medical institutions, individuals in the conduct of their business and State or local government agencies to receive, acquire, possess, use or transfer, in accordance with the provisions of subsections (a)(2) through (9), radioactive material, excluding special nuclear material, contained in devices designed and manufactured for the purpose of detecting, measuring, gauging or controlling thickness, density, level, interface location, radiation, leakage, or qualitative or quantitative chemical composition, or for producing light or an ionized atmosphere.
 - 2) The general license provided by subsection (a)(1) applies only to radioactive material contained in devices that have been manufactured or initially transferred and labeled in accordance with the specifications contained in a specific license issued by the Agency pursuant to Section 330.280(d) or in accordance with the specifications contained in an equivalent specific license issued by the U.S.

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Nuclear Regulatory Commission, an Agreement State or a Licensing State that authorizes distribution of devices to persons generally licensed by NRC, an Agreement State or a former Licensing State. The devices shall have been received from a specific licensee described in this subsection (a)(2) or through a transfer made under subsection (a)(3)(L).

AGENCY NOTE: Regulations under the Federal Food, Drug and Cosmetic Act authorizing the use of radioactive control devices in food production require certain additional labeling that is found in 21 CFR 179.21.

- 3) Any person who receives, acquires, possesses, uses or transfers radioactive material in a device pursuant to the general license described in subsection (a)(1):
- A) Shall assure that all labels affixed to the device at the time of receipt, and bearing a statement that removal of the label is prohibited, are maintained on the device and shall comply with all instructions and precautions provided by such labels;
 - B) Shall assure that the device is tested for leakage of, or contamination by, radioactive material and proper operation of the on-off mechanism and indicator, if any, at no longer than 6-month intervals or at such other intervals as are specified on the device labels; however:
 - i) A device containing only krypton need not be tested for leakage of, or contamination by, radioactive material; and
 - ii) A device containing only tritium or not more than 3.7 MBq (100 μ Ci) of other beta and/or gamma emitting material or 370 kBq (10 μ Ci) of alpha emitting material or a device held in storage in the original shipping container prior to initial installation need not be tested for any purpose;
 - C) Shall assure that testing (including testing required by subsection (a)(3)(B)), installation, servicing and removal from installation involving the radioactive material, its shielding or containment is performed:
 - i) In accordance with the instructions provided by the labels; or

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- ii) By a person holding an applicable specific license from the Agency, NRC or an Agreement State to perform such activities;
- D) Shall maintain records showing compliance with the requirements of subsections (a)(3)(B), (C) and (H) and (a)(6)(B). The records shall show the results of tests. The records shall also show the dates of performance of, and the names of persons performing, physical inventories, testing, installation, servicing and removal from installation of radioactive material or its shielding or containment. Any person who receives, acquires, possesses, uses or transfers radioactive material in a device pursuant to the general license provided by subsection (a)(1) shall retain these records as follows:
- i) A record of a test of an on-off mechanism and indicator or a test for leakage or contamination performed in accordance with subsection (a)(3)(B) shall be retained for 5 years after the next required test is performed or until the device is transferred or disposed of; and
 - ii) A record of testing, installation, servicing or removal from installation performed in accordance with subsection (a)(3)(C) shall be retained for 5 years from the date of the recorded event or until the device is transferred or disposed of; and
 - iii) A record of transfer or disposal of a device in accordance with subsection (a)(3)(H) shall be retained for 5 years from the date of the recorded event; and
- AGENCY NOTE: Note that this record must be retained after transfer of the device.
- iv) A record of a quarterly physical inventory performed in accordance with subsection (a)(6)(B) shall be retained for 5 years after the next required test is performed or until the device is transferred or disposed of;
- E) Shall immediately suspend operation of the device if there is a failure of or damage to, or any indication of a possible failure of or damage to, the

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shielding of the radioactive material or the on-off mechanism or indicator, or upon the detection of 185 Bq (5 nCi) or more removable radioactive material. The device shall not be operated until it has been repaired by the manufacturer or other person holding an applicable specific license from the Agency, NRC or an Agreement State to repair such devices. The device and any radioactive material from the device shall be disposed of only by transfer to a person authorized by an applicable specific license to receive the radioactive material in the device or as otherwise approved by the Agency. A report containing a brief description of the event and the remedial action taken shall be furnished to the Agency within 30 days. As applicable, the following shall also be furnished to the Agency:

- i) A report within 5 days (as required by 32 Ill. Adm. Code 340.1260) if detection of 185 Bq (5 nCi) or more removable radioactive material indicates that a sealed source is leaking or contaminated; and
 - ii) A plan within 30 days for ensuring that the person's premises and environs are acceptable for unrestricted use if 185 Bq (5 nCi) or more removable radioactive material is detected on the device or failure of or damage to a source is likely to result in contamination of the premises or the environs;
- F) Shall not abandon the device containing radioactive material;
- G) Shall not export the device containing radioactive material except in accordance with 10 CFR 110, published at 73 Fed. Reg. 78615, December 23, 2008, exclusive of subsequent amendments or editions;
- H) Shall transfer or dispose of the device containing radioactive material only:
- i) By export as provided by subsection (a)(3)(G);
 - ii) By transfer to another general licensee as provided by subsection (a)(3)(L);

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- iii) By transfer to a person authorized to receive the device by a specific license issued by the Agency pursuant to Section 330.280(d) or an equivalent specific license issued by NRC or an Agreement State;
 - iv) By transfer to a person authorized to perform waste collection by a specific license issued by the Agency, NRC or an Agreement State; or
 - v) As approved under subsection (a)(3)(K);
- D) Shall furnish a written report to the Agency within 30 days after transferring, disposing of or redesignating the device containing radioactive material. The notification shall include:
- i) The identification of the device by manufacturer's (or initial transferor's) name, model and serial number;
 - ii) The name, address and license number of the transferee (license number not applicable if exported);
 - iii) A receipt from the transferee showing the serial number of the device and the date that it was received (not applicable if exported or redesignated);
- AGENCY NOTE: Subsection (a)(3)(O) provides information about redesignation of administrative control over a device.
- J) Shall maintain a record of the transfer or disposal of the device as required by subsection (a)(3)(D)(iii);
 - K) Shall obtain written approval from the Agency before transferring the device to a transferee not identified in subsections (a)(3)(H)(i) through (iv);
 - L) Shall transfer the device to another general licensee only if:

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- i) The device remains in use at a particular location. In such case the transferor shall give the transferee a copy of subsection (a), a copy of 32 Ill. Adm. Code 310.40, 310.80, 330.310, 330.500, 340.1210, 340.1220, 340.1260 and any safety documents identified in the device labels; or
 - ii) The device is held in storage by an intermediate person in the original shipping container at its intended location of use prior to initial use;
- M) Shall furnish a report to the Agency within 30 days after transferring a device containing radioactive material as provided by subsection (a)(3)(L)(i). The notification shall include:
- i) The identification of the device by manufacturer's (or initial transferor's) name, model and serial number;
 - ii) The transferee's name and mailing address;
 - iii) The address of the transferee's location of use or storage of the device; and
 - iv) The name, title and phone number of the responsible individual identified by the transferee in accordance with subsection (a)(3)(N) to have knowledge of, and authority to take actions to ensure compliance with, the appropriate regulations and requirements;
- N) Shall appoint an individual responsible for having knowledge of the appropriate regulations and requirements and the authority for taking required actions to comply with appropriate regulations and requirements. The general licensee, through this individual, shall ensure day-to-day compliance with appropriate regulations and requirements. This appointment does not relieve the general licensee of any of its responsibility in this regard;
- O) May redesignate a device to be possessed and used under its own specific license without prior approval if the person:

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- i) Verifies that the specific license authorizes possession and use of the device or applies for and obtains an amendment to the license authorizing the possession and use;
 - ii) Removes, alters, covers or clearly and unambiguously augments the existing label required by subsection (a)(3)(A) so that the device is labeled in compliance with 32 Ill. Adm. Code 340.910; however, the manufacturer, model number and serial number shall be retained;
 - iii) Obtains the manufacturer's or initial transferor's information concerning maintenance that would be applicable under the specific license (such as leak testing procedures); and
 - iv) Reports the new designation as required by subsection (a)(3)(I).
- 4) Any person who receives, acquires, possesses or uses a device identified in subsection (a)(4)(A) shall register with the Agency in accordance with subsection (a)(4)(B):
- A) A person shall register with the Agency if the person receives, acquires, possesses or uses any of the following devices pursuant to the general license described in subsection (a)(1):
 - i) Devices (i.e., an electron capture detector, gauge, x-ray fluorescence analyzer, or other measuring, gauging or controlling device) containing a sealed source equal to or greater than 37 MBq (1 mCi) of radioactive material, based on the activity indicated on the label, other than strontium 90, radium-226 or polonium-210; or
 - ii) A device containing a sealed source equal to or greater than 3.7 MBq (100 μ Ci) of strontium-90 or radium-226;
 - B) A person shall register with the Agency no later than 30 days after receiving a device identified in subsection (a)(4)(A). Registration information shall be in a format prescribed by the Agency and furnished in accordance with subsection (a)(4)(C);

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- C) When registering with the Agency, a person shall furnish the following and any other information requested by the Agency to track the location and use of a device:
- i) The name and mailing address of the person;
 - ii) The name, title and phone number of the responsible individual designated by the person in accordance with subsection (a)(3)(N) as having knowledge of and authority to take actions to ensure compliance with the appropriate regulations and requirements;
 - iii) Information about each device meeting the criteria of subsection (a)(4)(A). This information shall include the manufacturer (or initial transferor), model, serial number, radionuclide and activity as indicated on the labels, the location of the device within the radiation installation, and the calendar quarter and year the person received the device;
 - iv) The addresses of the locations of use or storage of the devices reported under subsection (a)(4)(C)(iii);

AGENCY NOTE: For portable devices, these are the addresses of the primary places of storage.
 - v) Certification by the responsible individual that the information about devices was verified through a physical inventory and examination of label information; and
 - vi) Certification by the responsible individual that the general licensee is aware of the requirements of the general license;

AGENCY NOTE: Fee requirements for general licenses are in 32 Ill. Adm. Code 331. Reporting requirements are in Section 330.310(b), and bankruptcy notification requirements are in Section 330.310(j).
- D) Any person who is required by subsection (a)(4) to register with the Agency shall report a change in mailing address or address of location of

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use or storage. This report shall be furnished to the Agency within 30 days after the change.

AGENCY NOTE: For portable devices, this is the address of the primary place of storage.

- 5) A person from out of state who is generally licensed by NRC or an Agreement State with respect to a device identified in subsection (a)(4)(A) is exempt from the registration requirement in subsection (a)(4) if the device is used in areas subject to Agency jurisdiction for a period less than 180 days in any calendar year.
- 6) Any person who receives, acquires, possesses or uses radioactive material in a device under the general license described in subsection (a)(1) shall limit storage of a device that is not in use to a maximum of 2 years.
 - A) If a device with a shutter is not being used, the shutter shall be locked in the closed position. Testing for proper operation of the on-off mechanism and indicator is not required during the storage period. However, the on-off mechanism and indicator shall be checked before the device is returned to service if the device has not been tested within the required test interval. Tests for leakage of, or contamination by, radioactive material shall be conducted during the storage interval as required by subsection (a)(3)(B).
 - B) A device kept in standby for future use is exempt from the 2-year storage limit if the person performs a quarterly physical inventory of the device while it is in standby. The requirements and exemption of subsection (a)(6)(A) shall apply.

AGENCY NOTE: Record keeping requirements are contained in subsection (a)(3)(D).
- 7) Failure of any person to comply with the requirements of this subsection (a) may cause the Agency to impose civil penalties in accordance with 420 ILCS 40/36 and 32 Ill. Adm. Code 200.
- 8) The general license described in subsection (a)(1) does not authorize the manufacture of devices containing radioactive material.

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- 9) The general license described in subsection (a)(1) is subject to the provisions of 32 Ill. Adm. Code 310.40 through 310.90, 326, 331, 340.1210, 340.1220, 340.1260, and 341 and Sections 330.310 and 330.500 of this Part. Any person who receives, acquires, possesses, uses or transfers radioactive material in a device pursuant to the general license described in subsection (a)(1) of this Section is exempt from the requirements of 32 Ill. Adm. Code 400 and 340 except for the Sections of 32 Ill. Adm. Code 340 specifically identified in subsections (a)(3)(E) and (a)(9) of this Section.
- b) Luminous Safety Devices for Aircraft
 - 1) A general license is hereby issued to receive, acquire, possess and use tritium or promethium-147 contained in luminous safety devices for use in aircraft, provided:
 - A) Each device contains not more than 370 GBq (10 Ci) of tritium or 11.1 GBq (300 mCi) of promethium-147; and
 - B) Each device has been manufactured, assembled or imported in accordance with a specific license issued by NRC, or each device has been manufactured or assembled in accordance with the specifications contained in a specific license issued by the Department or an Agreement State to the manufacturer or assembler of such device pursuant to licensing requirements equivalent to those in 10 CFR 32.53, published at 43 FR 6923, February 17, 1978, exclusive of subsequent amendments or editions.
 - 2) Persons who receive, acquire, possess or use luminous safety devices pursuant to the general license in subsection (b)(1) of this Section are exempt from the requirements of 32 Ill. Adm. Code 340 and 400, except that they shall comply with the provisions of 32 Ill. Adm. Code 340.1210 and 340.1220.
 - 3) This general license does not authorize the manufacture, assembly or repair of luminous safety devices containing tritium or promethium-147.
 - 4) This general license does not authorize the receipt, acquisition, possession or use of promethium-147 contained in instrument dials.

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- 5) This general license is subject to the provisions of 32 Ill. Adm. Code 310.40 through 310.90 and 341 and Sections 330.310, 330.400 and 330.500 ~~of this Part.~~
- c) Ownership of Radioactive Material. A general license is hereby issued to own radioactive material without regard to quantity. Notwithstanding any other provisions of this Part, this general license does not authorize the manufacture, production, transfer, receipt, possession or use of radioactive material.
- d) Calibration and Reference Sources
- 1) A general license is hereby issued to those persons listed below to receive, acquire, possess, use and transfer, in accordance with the provisions of subsections (d)(4) and (5), americium-241 in the form of calibration or reference sources:
- A) Any person who holds a specific license issued by the Agency that authorizes the licensee to receive, possess, use and transfer radioactive material; and
- B) Any person who holds a specific license issued by NRC that authorizes the licensee to receive, possess, use and transfer special nuclear material.
- 2) A general license is hereby issued to receive, possess, use and transfer plutonium in the form of calibration or reference sources in accordance with the provisions of subsections (d)(4) and (5) to any person who holds a specific license issued by the Agency that authorizes the licensee to receive, possess, use and transfer radioactive material.
- 3) A general license is hereby issued to receive, possess, use and transfer radium-226 in the form of calibration or reference sources in accordance with the provisions of subsections (d)(4) and (5) to any person who holds a specific license issued by the Agency that authorizes the licensee to receive, possess, use and transfer radioactive material.
- 4) The general licenses in subsections (d)(1) through (3) apply only to calibration or reference sources that have been manufactured in accordance with the specifications contained in a specific license issued to the manufacturer or importer of the sources by NRC pursuant to 10 CFR 32.57, published at 73 Fed.

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Reg. 42674, July 23, 2008, exclusive of subsequent amendments or additions, or 70.39, published at 43 Fed. Reg. 6925, February 17, 1978, exclusive of subsequent amendments or additions, or that have been manufactured in accordance with the specifications contained in a specific license issued by the Agency, an Agreement State or a former Licensing State pursuant to licensing requirements equivalent to those contained in 10 CFR 32.57, published at 73 Fed. Reg. 42674, July 23, 2008, exclusive of subsequent amendments or additions, or 70.39, published at 43 Fed. Reg. 6925, February 17, 1978, exclusive of subsequent amendments or editions.

- 5) The general licenses provided in subsections (d)(1) through (3) are subject to the provisions of 32 Ill. Adm. Code 310.40 through 310.90, 340, 341 and 400 and Sections 330.310, 330.400 and 330.500 ~~of this Part~~. In addition, persons who receive, acquire, possess, use or transfer one or more calibration or reference sources pursuant to these general licenses:
- A) Shall not possess at any one time, at any one location of storage or use, more than 185 kBq (5 μ Ci) of americium-241, 185 kBq (5 μ Ci) of plutonium or 185 kBq (5 μ Ci) of radium-226 in such sources;
- B) Shall not receive, possess, use or transfer such source unless the source or the storage container bears a label that includes the following statement or a statement that contains the information called for in this statement:

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

CAUTION – RADIOACTIVE MATERIAL – THIS SOURCE CONTAINS (AMERICIUM-241) (PLUTONIUM) (RADIUM-226). DO NOT TOUCH RADIOACTIVE PORTION OF THIS SOURCE.

Name of Manufacturer or Importer

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AGENCY NOTE: Showing only the name of the appropriate material.

- C) Shall not transfer, abandon or dispose of the source except by transfer to a person authorized by a license from the Agency, NRC or an Agreement State to receive the source;
 - D) Shall store the source, except when the source is being used, in a closed container adequately designed and constructed to contain americium-241, plutonium or radium-226 that might otherwise escape during storage; and
 - E) Shall not use the source for any purpose other than the calibration of radiation detectors or the standardization of other sources.
- 6) These general licenses do not authorize the manufacture of calibration or sources containing americium-241, plutonium or radium-226.

e) General License for Use of Radioactive Material for Certain In Vitro Clinical or Laboratory Testing

AGENCY NOTE: The New Drug provisions of the Federal Food, Drug and Cosmetic Act also govern the availability and use of any specific diagnostic drugs in interstate commerce.

- 1) A general license is hereby issued to any physician, veterinarian, clinical laboratory or hospital to receive, acquire, possess, transfer or use, for any of the following stated tests, in accordance with the provisions of subsections (e)(2) through (6), the following radioactive materials in prepackaged units for use in in vitro clinical or laboratory tests not involving internal or external administration of radioactive material, or the radiation therefrom, to human beings or animals:
 - A) Carbon-14, in units not exceeding 370 kBq (10 μ Ci) each.
 - B) Cobalt-57, in units not exceeding 370 kBq (10 μ Ci) each.
 - C) Hydrogen-3 (tritium), in units not exceeding 1.85 MBq (50 μ Ci) each.

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- D) Iodine-125, in units not exceeding 370 kBq (10 μ Ci) each.
 - E) Mock iodine-125 reference or calibration sources, in units not exceeding 1.85 kBq (50 nCi) of iodine-129 and 185 Bq (5 nCi) of americium-241 each.
 - F) Iodine-131, in units not exceeding 370 kBq (10 μ Ci) each.
 - G) Iron-59, in units not exceeding 740 kBq (20 μ Ci) each.
 - H) Selenium-75, in units not exceeding 370 kBq (10 μ Ci) each.
- 2) No person shall receive, acquire, possess, use or transfer radioactive material pursuant to the general license established by subsection (e)(1) until he or she has filed the Agency form entitled "Certificate – In Vitro Testing with Radioactive Material Under General License", with the Agency and received from the Agency a validated copy of the form with certification number assigned. No person shall transfer a validated copy of the form to another person without prior written consent of the Agency. The following information shall be furnished to the Agency on the form entitled "Certificate – In Vitro Testing with Radioactive Material Under General License":
- A) Name and address of the physician, veterinarian, clinical laboratory or hospital;
 - B) The location of use; and
 - C) A statement that the physician, veterinarian, clinical laboratory or hospital has appropriate radiation measuring instruments to carry out in vitro clinical or laboratory tests with radioactive material as authorized under the general license in subsection (e)(1) and that the tests will be performed only by personnel competent in the use of such instruments and in the handling of the radioactive material.
- 3) A person who receives, acquires, possesses or uses radioactive material pursuant to the general license established by subsection (e)(1) shall comply with the following:

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- A) The general licensee shall not possess at any one time, pursuant to the general license in subsection (e)(1), at any one location of storage, or use a total amount of iodine-125, iodine-131, selenium 75, iron-59 and/or cobalt-57 in excess of 7.4 MBq (200 µCi).
 - B) The general licensee shall store the radioactive material, until used, in the original shipping container or in a container providing equivalent radiation protection.
 - C) The general licensee shall use the radioactive material only for the uses authorized by subsection (e)(1).
 - D) The general licensee shall not transfer the radioactive material to a person who is not authorized to receive it pursuant to a license issued by the Agency, NRC or an Agreement State, nor transfer the radioactive material in any manner other than in the unopened, labeled shipping container as received from the supplier.
 - E) The general licensee shall dispose of the mock iodine-125 reference or calibration sources described in subsection (e)(1)(E) as required by 32 Ill. Adm. Code 340.1010(a).
- 4) The general licensee shall not receive, acquire, possess or use radioactive material pursuant to subsection (e)(1):
- A) Except as prepackaged units that are labeled in accordance with the provisions of an applicable specific license issued pursuant to Section 330.280(g) or in accordance with the provisions of a specific license issued by NRC or an Agreement State that authorizes the manufacture and distribution of iodine-125, iodine 131, carbon-14, hydrogen-3 (tritium), iron-59, selenium-75, cobalt 57 or mock iodine-125 to persons generally licensed under this subsection (e) or its equivalent; and
 - B) Unless one of the following statements, as appropriate, or a statement that contains the information called for in one of the following statements, appears on a label affixed to each prepackaged unit or appears in a leaflet or brochure that accompanies the package:

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This radioactive material shall be received, acquired, possessed and used only by physicians, veterinarians, clinical laboratories or hospitals and only for in vitro clinical or laboratory tests not involving internal or external administration of the material, or the radiation therefrom, to human beings or animals. Its receipt, acquisition, possession, use and transfer are subject to the regulations and a general license of the U.S. Nuclear Regulatory Commission or of a state with which the Commission has entered into an agreement for the exercise of regulatory authority.

Name of Manufacturer or Importer

- 5) The physician, veterinarian, clinical laboratory or hospital possessing or using radioactive material under the general license of subsection (e)(1) shall report in writing to the Agency, any changes in the information furnished by the licensee in the "Certificate – In Vitro Testing with Radioactive Material Under General License", Agency Form KLM.006. The report shall be furnished within 30 days after the effective date of the change.
 - 6) This general license is subject to the provisions of 32 Ill. Adm. Code 310 and 331.
- f) Ice Detection Devices
- 1) A general license is hereby issued to receive, acquire, possess, use and transfer strontium-90 contained in ice detection devices, provided each device contains not more than 1.85 MBq (50 μ Ci) of strontium-90 and each device has been manufactured or initially transferred in accordance with a specific license issued by NRC or each device has been manufactured or initially transferred in accordance with the specifications contained in a specific license issued by the Agency or an Agreement State to the manufacturer of the device pursuant to licensing requirements equivalent to those in 10 CFR 32.61.
 - 2) Persons who receive, acquire, possess, use or transfer strontium-90 contained in ice detection devices pursuant to the general license in subsection (f)(1):

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- A) Shall, upon occurrence of visually observable damage, such as a bend or crack or discoloration from overheating to the device, discontinue use of the device until it has been inspected, tested for leakage or contamination and repaired by a person holding a specific license from NRC or an Agreement State to manufacture or service those devices; or shall dispose of the device pursuant to the provisions of 32 Ill. Adm. Code 340.1010(a);
 - B) Shall assure that all labels affixed to the device at the time of receipt, and that bear a statement that prohibits removal of the labels, are maintained on the device; and
 - C) Are exempt from the requirements of 32 Ill. Adm. Code 340 and 400 except that such persons shall comply with the provisions of 32 Ill. Adm. Code 340.1010(a), 340.1210, 340.1220 and 340.1260.
- 3) This general license does not authorize the manufacture, assembly, disassembly or repair of strontium-90 in ice detection devices.
 - 4) This general license is subject to the provisions of 32 Ill. Adm. Code 310.40 through 310.90 and 341 and Sections 330.310, 330.400 and 330.500 of this Part.
- g) Certain Items and Self-Luminous Products Containing Radium-226
- 1) A general license is hereby issued to any person to acquire, receive, possess, use or transfer, in accordance with the provisions of this subsection (g), radium-226 contained in the following products manufactured prior to November 30, 2007:
 - A) Antiquities originally intended for use by the general public. For the purposes of this subsection (g)(1)(A), antiquities means products originally intended for use by the general public and distributed in the late 19th and early 20th centuries, such as radium emanator jars, revigators, radium water jars, radon generators, refrigerator cards, radium bath salts and healing pads;
 - B) Intact timepieces containing greater than 37 kBq (1 μ Ci), nonintact timepieces and timepiece hands and dials no longer installed in timepieces;

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- C) Luminous items installed in air, marine or land vehicles;
 - D) All other luminous products, provided that no more than 100 items are used or stored at the same location at any one time; and
 - E) Small radium sources containing no more than 37 kBq (1 μ Ci) of radium-226. For the purposes of this subsection (g)(1)(E), "small radium sources" means discrete survey instrument check sources, sources contained in radiation measuring instruments, sources such as cloud chambers and spinthariscopes used in educational demonstrations, electron tubes, lightning rods, ionization sources, static eliminators or sources otherwise designated by the Agency.
- 2) Any person who acquires, receives, possesses, uses or transfers radioactive material under the general license in subsection (g)(1) is exempt from the provisions of 32 Ill. Adm. Code 340 and 400 to the extent that the receipt, possession, use or transfer of radioactive material is within the terms of the general license. This exemption does not apply to any person specifically licensed under this Part.
- 3) Any person who acquires, receives, possesses, uses or transfers radioactive accordance with the general license in subsection (g)(1):
- A) Shall notify the Agency within 30 days if there is any indication of possible damage to a product that could result in loss of radioactive material. The report shall provide a brief description of the event and the remedial action taken;
 - B) Shall not abandon a product containing radium-226. The product and any radioactive material from the product shall only be disposed of in accordance with subsection (g)(3)(D);
 - C) Shall not export a product containing radium-226, except in accordance with 10 CFR 110, published at 73 Fed. Reg. 78615, December 23, 2008, exclusive of subsequent amendments or editions; and

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D) Shall dispose of a product containing radium-226 only in accordance with 32 Ill. Adm. Code 340.1010(a), or by transfer to a person specifically licensed under this Part to receive the radium-226 in the product, or as otherwise approved by the Agency in writing.

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

h) Persons producing or in possession of water treatment residuals not exempt under Section 330.40(d)

1) A general license is hereby issued to any person producing or in possession of water treatment residuals not exempt under Section 330.40(d).

2) General licensees under subsection (h)(1) shall:

A) Register with the Agency within 60 days of becoming subject to subsection (h)(1) in a format specified by the Agency;

B) Comply with 32 Ill. Adm. Code 340.920(a) and (e) and post each area or room in which there is used or stored an amount of licensed material exceeding ten times the quantity of such material specified in Appendix C to 10 CFR 20, effective January 1, 2004, exclusive of subsequent amendments or editions, with a conspicuous sign or signs bearing the radiation symbol and the words "CAUTION RADIOACTIVE MATERIALS" OR "DANGER RADIOACTIVE MATERIALS";

C) Employ the use of institutional and engineered controls to limit exposure of water treatment residuals to personnel and the environment;

D) Prohibit any worker from receiving a dose, excluding contribution from radon and its progeny, in excess of the limits specified in 32 Ill. Adm. Code 340.310;

E) Ensure that worker exposure from radon shall not exceed 30 pCi/L or 0.3 WL, based on continuous workplace exposure for 40 hr/week, 52

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weeks/year and shall not exceed four WLM over a 12 month period, using an equilibrium ratio of 50 percent to convert radon exposure to WLM;

- F) Comply with the Radon Industry Licensing Act [420 ILCS 44] and 32 Ill. Adm. Code 422;
- G) Comply with Sections 330.310, 330.325 and 330.500 and 32 Ill. Adm. Code 310.40 through 310.90, 326, 331, 340.510(a) and (b), 340.1220, 340.1270, 340.1320, 341, 609 and 620;
- H) Obtain and operate radiation survey instruments used to establish compliance with Title 32 of the Illinois Administrative Code; and
- D) Ensure that individuals who work in or whose duties may require them to work in restricted areas are instructed in the items specified in Appendix I and 32 Ill. Adm. Code 400.120 at the time of initial employment and at least annually thereafter.
 - i) The general licensee shall maintain records of initial and annual employee training for five years from the date on which the training was given; and
 - ii) The training record shall contain a signed statement from the individual being trained that he/she received the information in 32 Ill. Adm. Code 400.120 and understands it and the dates the training was held.
- 3) The general licensee shall notify the Agency by telephone or in writing prior to removing licensed radioactive material from the facility for disposal, treatment or transport. Such notification shall include the location, quantity, proposed dates and proposed method for disposal.
- 4) Disposal of licensed material shall be conducted according to 32 Ill. Adm. Code 340, Subpart K and the general licensee shall:
 - i) Meet the requirements of 32 Ill. Adm. Code 340.1030 for discharges of licensed radioactive material to a sanitary sewer;

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- ii) Give advance notification to and receive written authorization from wastewater treatment facilities receiving discharges authorized under 32 Ill. Adm. Code 340.1030;
- iii) Ensure removal of licensed material is performed by persons specifically licensed by the Agency to perform such work; and
- iv) Comply with Section 330.400 for transfers of radioactive material. Nothing in the subsection (h) authorizes the general licensee to receive water treatment residuals from another general licensee.

AGENCY NOTE: Disposal of licensed material is subject to the fees specified in Section 13 of the Illinois Low-Level Radioactive Waste Management Act [420 ILCS 20/13] and are subject to the reporting requirements of 32 Ill. Adm. Code 620.

- 5) Wastewater treatment facilities receiving discharges authorized under 32 Ill. Adm. Code 340.1030 shall comply with the provisions of Section 330.40(d).

AGENCY NOTE: Discharges of licensed material to an unlicensed wastewater treatment plant will require that plant to register under Section 330.40(d) due to the unquantified impact the licensed material will have on the facility's water treatment residuals. Receiving wastewater treatment plants may have local pretreatment standards restricting such discharges.

(Source: Amended at 39 Ill. Reg. _____, effective _____)

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Section 330.Appendix I TENORM Awareness Training for General Licensees identified in Section 330.220(h)

- a) TENORM Awareness Training (1-2 hours at a minimum) shall be included as part of the facility's health and safety training program.
- b) TENORM Awareness Training shall contain, at a minimum, policies and procedures for each facility, including the ALARA program and management policy to maintain all personnel exposure within the site dose guidelines (beneath 100 mrem/year, excluding contribution from radon).

AGENCY NOTE: The extent of training should be commensurate with potential radiological health protection hazards present in the work place. Where routine work conditions will not result in inadvertent exposures to TENORM, the TENORM Awareness Training may be significantly shorter in scope (i.e., only addressing the facility's radiation control and monitoring measures, why they are in place and awareness of TENORM containing areas). Additionally, components of 330.Appendix I training may be applicable to registrants under Section 330.40(d).

- c) In addition to TENORM Awareness Training, training for workers whose job duties may involve exposure to TENORM shall include the following:
 - 1) Fundamentals of Radiation Safety:
 - A) Introduction to NORM and TENORM;
 - B) Characteristics of alpha, beta and gamma radiation;
 - C) Units of radiation dose and quantity of radioactivity associated with TENORM;
 - D) Hazards of exposure to the different kinds of radiation;
 - E) Levels of radiation from TENORM sources of radiation;

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- F) Methods of controlling radiation dose through time, distance and shielding, ventilation, decontamination and source reduction to reduce doses as low as practicable; and
 - G) Methods of avoiding intake or ontake of radiation through the use of personal protective equipment, proper working procedures and decontamination.
- 2) Radiation Detection Instruments including:
- A) Use, operation and limitations of radiation survey instruments for alpha, beta and gamma radiation;
 - B) Survey techniques including ambient and frisking methods;
 - C) Surveying and sampling for NORM and TENORM; and
 - D) Monitoring equipment and action levels for radon.
- 3) Proper Use of Personnel Protective Equipment (PPE) including:
- A) Different types of PPE;
 - B) Donning of PPE;
 - C) Removal of PPE;
 - D) Decontamination techniques; and
 - E) Use of respiratory protection equipment and radon mitigation as needed.
- 4) Identification of areas requiring posting and labeling including identification of known and potential TENORM containing areas. This includes pumps and piping where mineral scales accumulate; lagoons, flocculation and sedimentation tanks where residual sludges accumulate; filters, pumping stations and storage tanks where scales and sludges accumulate; facilities where filter backwash, brines or other contaminated water accumulates; facilities that are enclosed (radon); and residuals processing or handling areas.

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- 5) Containerization, storage and disposal of TENORM wastes.
- 6) Requirements of pertinent federal and State of Illinois regulations.
- 7) Topics and discussions of assigned activities during normal and abnormal situations involving exposure to TENORM which can reasonably be expected to occur during work activities.
- d) The licensee shall provide a 1-4 hour TENORM refresher training for employees at intervals not to exceed 12 months and when there is a significant change to radiation protection policies, procedures or regulations.
- e) Recommended Training for Instructors. Instructors of TENORM courses, other than a Radiation Safety Officer (RSO), should have adequate and commensurate experience in field operations associated with TENORM activities at water and wastewater facilities. The field experience work needs to include sufficient time in radiation protection and use of radiation detection equipment.