**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 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.

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 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.

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 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 (500 microCi) 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 μCi) of polonium-210 per device or of a total of not more than 1.85 GBq (50 mCi) of hydrogen-3 (tritium) per device.

I) Devices described in subsections (c)(1)(G) and (H) authorized before October 23, 2015 for use under the general license then 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 Ill. 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 devices and certain devices for producing an ionized 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) Exempt Material

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

2) The following individuals or entities 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 less than or equal to 200 pCi/g (dry weight basis) must register directly with the Agency:

A) Owners and operators of facilities or plants that produce residuals or sludge resulting from the treatment of water or sewage and containing radium occurring naturally from groundwater; and

B) Owners and operators of Illinois Environmental Protection Agency (IEPA) permitted landfills if the residuals or sludge is disposed of in those landfills; and

C) Applicators who apply to agricultural lands residuals or sludge resulting from the treatment of water or sewage containing radium occurring naturally from groundwater; and

D) Any other person or entity that the Agency determines is required to register under the provisions of the Radiation Protection Act.

3) Owners and operators of facilities or plants that produce residuals 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 will be exempt from the licensure and fee requirements of the Radiation Protection Act.

4) 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 391), as implemented by IEPA:

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

i) the residuals or sludge may be disposed of in an IEPA permitted landfill provided:

• the residuals or sludge are covered during transportation; and

• the 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 residuals or sludge and grade level (at the time of landfill closure).

ii) the residuals or sludge may be used for soil conditioning purposes on agricultural crop land (e.g., corn, soybeans) provided:

• that use is in accordance with 35 Ill. Adm. Code 309.208; and

• the concentration of the radium in the residuals or sludge (dry weight basis) shall be determined by laboratory analysis; and

• the level of radium in the residuals or sludge and the application rate is such that, after the residuals or sludge is mixed with soil (for agricultural use), the cumulative increase of the 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

• this increased limit applies to the sum of all land applications of residuals or sludge on a specific parcel of land; and

• at no time shall the application of residuals or sludge result in the total radium concentration in the soil exceeding 3.0 pCi/g (the mean natural background as determined by the Agency of 2.0 pCi/g and the soil concentration increase limit of 1.0 pCi/g due to 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 residuals 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 residuals or sludge containing radium for the first time, the generator must determine the 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 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

■ 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

• lands receiving 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

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

B) If the level of radium in the 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 must be reviewed and approved by IEMA-DNS in advance; and

ii) the 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.

6) On an annual basis, each person producing water treatment residuals or sewage treatment sludge containing radium must report, in a manner specified by the Agency, the following:

A) Persons who dispose of water treatment residuals or sewage treatment sludge containing radium in a landfill must report:

i) the quantity of residuals or sludge containing radium; and

ii) the concentration of radium (in pCi/g (dry weight basis)) contained in the residuals or sludge; and

iii) the date the residuals or sludge were disposed of in a landfill; and

iv) the name and location of the landfill receiving these residuals or sludge; and

v) any additional information deemed appropriate by the Agency.

B) Persons who land apply water treatment residuals or sewage treatment sludge containing radium must report:

i) the identification, 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 concentration of radium in pCi/g (dry weight basis) in the residuals or sludge; and

iii) the application rate in dry tons/acre; and

iv) the date of the land application; and

v) any additional information deemed appropriate by the Agency.

7) All analysis of residuals or sludge must be conducted by a laboratory certified by the U.S. Environmental Protection Agency or the National Environmental Laboratory Accreditation Conference (NELAC) to perform radiological analysis, and concentration of radium will be determined by a method approved by the Agency.

8) Owners and operators of facilities that produce residuals or sludge that is land 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).

9) Owners and operators of facilities that produce residuals or sludge that is disposed of in a licensed low-level radioactive waste disposal facility 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.

(Source: Amended at 39 Ill. Reg. 11905, effective August 17, 2015)