

STATE OF ILLINOIS  
**DEPARTMENT OF NUCLEAR SAFETY**

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George H. Ryan  
Governor

Thomas W. Ortciger  
Director

November 9, 1999

Office of State Programs  
U.S. Nuclear Regulatory Commission  
Washington, DC 20555-0001  
Attn: Frederick C. Combs, Deputy Director, OSP

Re: State Agreements Program Letter, SP-99-074; "Request for Technical Information."

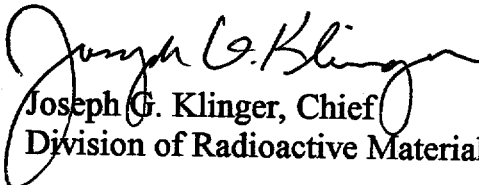
Dear Mr. Combs:

The Illinois Department of Nuclear Safety (Department) hereby provides information requested in the above-identified Agreement States letter. The Office of State Programs (OSP) requested Agreement State definitions of six (6) terms: "waste; disposal; effluent; byproduct material; transfer; and release limits." Also requested was information on radiological criteria applied by the Department regarding unrestricted release of solid materials.

Illinois regulations pertaining to the control of radiation are contained in Title 32 Illinois Administrative Code (32 IAC). Attached are text quotations from 32 IAC regarding definitions, waste disposal and decontamination. Definitions in a Part other than 32 IAC Part 310 apply only to that Part. Please note that Section 340.1010 addresses the release of air and water effluents, and does not address the release of solid materials. Section 340.1320 requires decontamination of an "area" or "installation," but does not authorize release or disposal.

The latest version of Illinois statutes and regulations pertaining to radiation protection is available in downloadable format at <http://www.state.il.us/idns/> Should you have any questions regarding the Department's concerns, please contact me at (217) 785-9947.

Sincerely,

  
Joseph G. Klinger, Chief  
Division of Radioactive Materials

JGK:DSP



cc: Jim Lynch, State Agreements Officer

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## **Definitions in 32 Illinois Administrative Code (32 IAC)**

### **Part 310: GENERAL PROVISIONS**

*"Byproduct material"* means: (1) any radioactive material (except special nuclear material) yielded in or made radioactive by exposure to the radiation incident to the process of producing or utilizing special nuclear material; and (2) the tailings or wastes produced by the extraction or concentration of uranium or thorium from any ore processed primarily for its source material content, including discrete surface wastes resulting from underground solution extraction processes but not including underground ore bodies depleted by such solution extraction processes. (See Section 4(a) of the Act.)

### **Part 601: LICENSING REQUIREMENTS FOR LAND DISPOSAL OF RADIOACTIVE WASTE**

*"Disposal"* means the isolation of radioactive wastes from the biosphere inhabited by persons and their food chains by emplacement in a land disposal facility.

*"Waste"* means those low-level radioactive wastes that are acceptable for disposal in a land disposal facility. For the purposes of this definition, low-level waste has the same meaning as in the Low-Level Radioactive Waste Policy Act (P.L. 96-573, as amended by P.L. 99-240, effective January 15, 1986), i.e., radioactive material that (A) is not high-level radioactive waste, spent nuclear fuel, or byproduct material (as defined in section 11e.(2) of the Atomic Energy Act of 1954 (42 U.S.C. 2014(e)(2))); and (B) the Nuclear Regulatory Commission, consistent with existing law and in accordance with (A) above, classifies as low-level radioactive waste.

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The terms *"effluent"*, *"transfer"* and *"release limits"* are not defined in 32 IAC.

**Title 32 Illinois Administrative Code**

**SUBPART K: WASTE DISPOSAL**

**Section 340.1010 General Requirements**

- a) A licensee shall dispose of licensed material only:
  - 1) By transfer to an authorized recipient as provided in Section 340.1060 or in 32 Ill. Adm. Code 330, 332 or 601, or to the U.S. Department of Energy; or
  - 2) By release in effluents within the limits in Section 340.310; or
  - 3) As authorized pursuant to Sections 340.1020, 340.1030, 340.1040 or 340.1050.

**SUBPART N: ADDITIONAL REQUIREMENTS**

**Section 340.1320 Removal of Radioactive Contamination**

Notwithstanding any exemptions contained in this Part, any person who uses, possesses, or stores radioactive material in such a manner as to cause uncontrolled contamination of any area shall, upon order of the Department, remove or provide for the removal of such contaminants at his own expense through the use of an authorized transferee and shall decontaminate the installation to the lowest practicable level. Unless another value is specified in 32 Ill. Adm. Code 332, the values specified in Section 340. Appendix A may be used as guidelines for this purpose. These values, however, may be modified at specific installations at the discretion of the Department.

**SECTION 340.APPENDIX A Decontamination Guidelines**

**a) Surface Contamination Guide**

**Alpha Emitters:**

Removable	555	mBq per 100 cm <sup>2</sup> =	average over any one surface
	15	pCi per 100 cm <sup>2</sup> =	
	33	dpm per 100 cm <sup>2</sup>	
	1.67	Bq per 100 cm <sup>2</sup> =	maximum
	45	pCi per 100 cm <sup>2</sup> =	
	100	dpm per 100 cm <sup>2</sup>	
Total (fixed)	16.7	Bq per 100 cm <sup>2</sup> =	average over any one surface
	450	pCi per 100 cm <sup>2</sup> =	
	1,000	dpm per 100 cm <sup>2</sup>	
	83.3	Bq per 100 cm <sup>2</sup> =	maximum
	2,250	pCi per 100 cm <sup>2</sup> =	
	5,000	dpm per 100 cm <sup>2</sup>	
	2.5	microSv per hour at 1 cm from surface =	
	250	microrem per hour at 1 cm from surface	

**Beta-Gamma Emitters:**

Removable (all beta-gamma emitters except hydrogen-3)	3.7	Bq per 100 cm <sup>2</sup> =	average over any one surface
	100	pCi per 100 cm <sup>2</sup>	
	18.5	Bq per 100 cm <sup>2</sup> =	maximum
	500	pCi per 100 cm <sup>2</sup>	
Removable (hydrogen-3)	37	Bq per 100 cm <sup>2</sup> =	average over any one surface
	1,000	pCi per 100 cm <sup>2</sup>	
	185	Bq per 100 cm <sup>2</sup> =	maximum
	5,000	pCi per 100 cm <sup>2</sup>	
Total (fixed)	2.5	microSv per hour at 1 cm from surface =	
	250	microrem per hour at 1 cm from surface	

b) Concentration in air and water: Appendix B, Table I and II of 10 CFR 20.

c) Concentrations in soil and other materials except water:

- 1) Radioactive material except source material and radium: Column II of 32 Ill. Adm. Code 330.Appendix A.
- 2) Source material and radium: Concentration of radionuclides above background concentrations for total radium, averaged over areas of 100 square meters, shall not exceed:
  - A) 185 mBq (5 pCi) per gram of dry soil, averaged over the first 15 centimeters below the surface; and
  - B) 185 mBq (5 pCi) per gram of dry soil, averaged over layers of 15 centimeters thickness more than 15 centimeters below the surface.

d) The level of gamma radiation measured at a distance of 100 centimeters from the surface shall not exceed background.

**AGENCY NOTE:** This Appendix shall be used only as a guide. The Department may require lower values in specific instances, depending upon radionuclides, type of surface, intended present and future use, etc.