



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20555

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August 27, 1985

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MEMORANDUM FOR: G. Wayne Kerr, Director
Office of State Programs

FROM: James M. Taylor, Director
Office of Inspection and Enforcement

SUBJECT: DRAFT PROPOSAL FROM ILLINOIS FOR AGREEMENT STATE STATUS

We have reviewed the proposed application for Agreement State status and find that it is well written and complete in detail. Of particular interest are the "Agency Notes" that are found throughout the regulations that are used to define or interpret certain parts of the regulations. This is a good and novel approach. We have a few other comments to offer for your consideration and they are enclosed.

James M. Taylor
James M. Taylor, Director
Office of Inspection and Enforcement

Enclosure:
As stated

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Regulations

1. Section 4, Licensing of Radioactive Material.

On page 330-2, Item(2)(B) references an exemption for products containing glass enamel and glass enamel frit. This was in our Part 40 regulations; however, it was revoked in 1984. The reason for revocation was that jewelry was being imported by several companies that contained uranium in the glazing, causing unnecessary radiation levels in articles used for adornment. §40.13 of 10 CFR 40 contains a footnote which states, "On July 25, 1983, the exemption of glass enamel or glass enamel frit was suspended. The exemption was eliminated on September 11, 1984."

2. Of the 15 sections, Section 4 of the regulations, Licensing of Radioactive Material, gives us some problems. Containing about 110 pages, it is difficult to follow because it jumps from one licensing category to another. For example, Chapter 4 starts out by defining responsibilities for general licensees (pages 330-1 to 330-32) and beginning on page 330-52 discusses specific licenses to manufacture and distribute generally licensed quantities and exempt quantities. Perhaps these two could be combined. Similarly, a few general requirements for specific licenses that authorizes all of the materials used in radiography, medicine and so forth, are discussed beginning on page 330-33 and page 330-77. However, most of the pages are devoted to specific licenses for manufacture and distribution of generally licensed quantities and exempt quantities. Furthermore, licenses of broad scope are discussed in detail beginning on page 330-47, but the Table of radionuclide quantities for these types of licenses doesn't appear until page 330-110, following 2 or 3 other discussions. In short, Section 4 appears to need to be better organized.

3. Decommissioning and decontamination of facilities is discussed beginning on page 330-79 of Section 4. However, the release limits for contamination appears on page 340-69 of Section 6. Both should be together in a single section.

With respect to the decontamination limits on page 340-69, there are only numbers and no guidance is offered, even though the title states, "Decontamination Guides." Because of this, we have attached guidance that the NRC uses. Without guidance on how to decontaminate and perform surveys, an inspector's time might be wasted when requested to perform a confirmatory survey, since a licensee could have missed something for lack of guidance.

4. In Section 4, page 330-105, there is listed the medical groups of radioactive pharmaceuticals, Groups I through VI, the same as listed in the NRC's 10 CFR Part 35. The compounds listed are for diagnostic and therapeutic procedures. Section 11 is entitled, "Use of Sealed Sources in the Healing Arts." Couldn't human uses of radionuclides be combined into one section, similar to the NRC's Part 35?
5. Section 7, Transportation of Radioactive Material, Pages 341-4,5.
We note that the provisions of § 341.4(a) state that "Common and contract carriers who are not subject to the requirements of the U.S. Department of Transportation or the U.S. Postal Service are subject to Section 341.3 and other applicable sections of these regulations." § 341.3 requires that a general or specific license must be issued by the Department unless an exemption is provided. The effect of these requirements, therefore, is that an intra-state common or contract carrier would be required to get a specific license from the State of Illinois to "... receive, possess, transport, and store radioactive materials in the regular course of their carriers for another" We question whether this is intended. It is not consistent with the equivalent provisions of §§ 10 CFR 30.13, 40.12, and 70.12, upon which it would appear that the provisions of § 341.4(a) were intended to be based. We, therefore, recommend deletion of the last sentence of § 341.4(a).

We also recommend that a "341.15" be added in the second line of §341.1(b) following "341.14", since it would appear appropriate to include the requirements for the "routine determinations" of 341.15, as well as the "preliminary determinations" of 341.14.

6. We believe that Section 4 needs to be refined. Certain parts of Section 4 are much too detailed. It appears that Section 4 was meant to be equivalent to the NRC's Part 30, 33, and 35. Section 4 could be divided up into more sections. A better solution would be to combine elements from Section 4 into other sections, thereby reducing the size of that Section.

GUIDELINES FOR DECONTAMINATION OF FACILITIES AND EQUIPMENT
PRIOR TO RELEASE FOR UNRESTRICTED USE
OR TERMINATION OF LICENSES FOR BYPRODUCT, SOURCE,
OR SPECIAL NUCLEAR MATERIAL

July 1982

U. S. Nuclear Regulatory Commission
Division of Fuel Cycle & Materials Safety
Washington, D. C. 20555

~~83-826019~~

The instructions in this guide in conjunction with Table 1 specify the radionuclides and radiation exposure rate limits that should be used in decontamination and survey of surfaces or premises and equipment prior to abandonment or release for unrestricted use. The limits in Table 1 do not apply to premises, equipment, or scrap containing induced radioactivity for which the radiological considerations pertinent to their use may be different. The release of such facilities or items from regulatory control is considered on a case-by-case basis.

1. The licensee shall make a reasonable effort to eliminate residual contamination.
2. Radioactivity on equipment or surfaces shall not be covered by paint, plating, or other covering material unless contamination levels, as determined by a survey and documented, are below the limits specified in Table 1 prior to the application of the covering. A reasonable effort must be made to minimize the contamination prior to use of any covering.
3. The radioactivity on the interior surfaces of pipes, drain lines, or ductwork shall be determined by making measurements at the traps, and other appropriate access points, provided that contamination at these locations is likely to be representative of contamination on the interior of the pipes, drain lines, or ductwork. Surfaces of premises, equipment, or scrap which are likely to be contaminated but are of such size, construction, or location as to make the surface inaccessible for purpose of measurement shall be presumed to be contaminated in excess of the limits.
4. Upon request, the Commission may authorize a licensee to relinquish possession or control of premises, equipment, or scrap having surfaces contaminated with materials in excess of the limits specified. This may include, but would not be limited to, special circumstances such as razing of buildings, transfer of premises to another organization continuing work with radioactive materials, or conversion of facilities to a long-term storage or standby status. Such requests must:
 - a. Provide detailed, specific information describing the premises, equipment or scrap, radioactive contaminants, and the nature, extent, and degree of residual surface contamination.
 - b. Provide a detailed health and safety analysis which reflect that the residual amounts of materials on surface areas, together with other considerations such as prospective use of the premises, equipment or scrap, are unlikely to result in an unreasonable risk to the health and safety of the public.

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5. Prior to release of premises for unrestricted use, the licensee shall make a comprehensive radiation survey which establishes that contamination is within the limits specified in Table 1. A copy of the survey report shall be filed with the Division of Fuel Cycle and Material Safety, USNRC, Washington, D.C. 20555, and also the Administrator of the NRC Regional Office, having jurisdiction. The report should be filed at least 30 days prior to the planned date of abandonment. The survey report shall:

- a. Identify the premises.
- b. Show that reasonable effort has been made to eliminate residual contamination.
- c. Describe the scope of the survey and general procedures followed.
- d. State the findings of the survey in units specified in the instruction.

Following review of the report, the NRC will consider visiting the facilities to confirm the survey.

TABLE 1
ACCEPTABLE SURFACE CONTAMINATION LEVELS

NUCLIDES ^a	AVERAGE ^{b c f}	MAXIMUM ^{b d f}	REMOVABLE ^{b e f}	
U-nat, U-235, U-238, and associated decay products	5,000 dpm α /100 cm ²	15,000 dpm α /100 cm ²	1,000 dpm α /100 cm ²	
Transuranics, Ra-226, Ra-228, Th-230, Th-228, Pa-231, Ac-227, I-125, I-129	100 dpm/100 cm ²	300 dpm/100 cm ²	20 dpm/100 cm ²	
Th-nat, Th-232, Sr-90, Ra-223, Ra-224, U-232, I-126, I-131, I-133	1000 dpm/100 cm ²	3000 dpm/100 cm ²	200 dpm/100 cm ²	
Beta-gamma emitters (nuclides with decay modes other than alpha emission or spontaneous fission) except Sr-90 and others noted above.	5000 dpm $\beta\gamma$ /100 cm ²	15,000 dpm $\beta\gamma$ /100 cm ²	1000 dpm $\beta\gamma$ /100 cm ²	R

^aWhere surface contamination by both alpha- and beta-gamma-emitting nuclides exists, the limits established for alpha- and beta-gamma-emitting nuclides should apply independently.

^bAs used in this table, dpm (disintegrations per minute) means the rate of emission by radioactive material as determined by correcting the counts per minute observed by an appropriate detector for background, efficiency, and geometric factors associated with the instrumentation.

^cMeasurements of average contaminant should not be averaged over more than 1 square meter. For objects of less surface area, the average should be derived for each such object.

^dThe maximum contamination level applies to an area of not more than 100 cm².

^eThe amount of removable radioactive material per 100 cm² of surface area should be determined by wiping that area with dry filter or soft absorbent paper, applying moderate pressure, and assessing the amount of radioactive material on the wipe with an appropriate instrument of known efficiency. When removable contamination on objects of less surface area is determined, the pertinent levels should be reduced proportionally and the entire surface should be wiped.

^fThe average and maximum radiation levels associated with surface contamination resulting from beta-gamma emitters should not exceed 0.2 mrad/hr at 1 cm and 1.0 mrad/hr at 1 cm, respectively, measured through not more than 7 milligrams per square centimeter of total absorber.



UNITED STATES
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WASHINGTON, D. C. 20555

AUG 30 1985

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MEMORANDUM FOR: G. Wayne Kerr, Director
Office of State Programs

FROM: Harold R. Denton, Director
Office of Nuclear Reactor Regulation

SUBJECT: DRAFT PROPOSAL FROM ILLINOIS FOR AGREEMENT
STATE STATUS

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In response to your request of August 12, 1985, we have reviewed the draft proposal from Illinois for Agreement State Status. Our review has focused on Section 6, "Standards for Protection Against Radiation," of Volume III, "Regulations," of the State of Illinois Application for Agreement State Status. We have reviewed the State's proposed radiation protection regulations according to the Criteria for Radiation Protection Standards contained in NRC's Policy Statement.* We find that those portions of the State's proposed standards that are within NRR's area of expertise are in accordance with the radiation protection standards in 10 CFR 20.

Handwritten signature: Frank J. Muraglia
Harold R. Denton, Director
Office of Nuclear Reactor Regulation

*"Criteria for Guidance of States and NRC in Discontinuance of NRC Regulatory Authority and Assumption Thereof by States Through Agreement" (46 FR 7540, January 23, 1981).

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