

New York State Department of Health  
Bureau of Environmental Radiation Protection

RADIATION GUIDE 10.10

GUIDE FOR DECONTAMINATION OF FACILITIES AND EQUIPMENT  
PRIOR TO RELEASE FOR UNRESTRICTED USE OR  
TERMINATION OF LICENSES FOR RADIOACTIVE MATERIALS

INTRODUCTION

A. Purpose of Guide

The instructions in this guide, in conjunction with Table 1, specify the radioactivity and radiation exposure rate limits which should be used in accomplishing the decontamination and survey of surfaces of premises and equipment prior to abandonment or release for unrestricted use. However, no decontamination procedures shall be used which may generate air-borne radioactive material without specific authorization from the New York State Department of Health to do so. The Department may be consulted as to the appropriate equipment performance characteristics to be used in determining that the levels specified in Table 1 are met. 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 will be considered on a case-by-case basis.

B. Applicable Regulations

The regulations pertaining to this use of radioactive material are found in Title 10, Chapter 1, Part 16, New York Code of Rules and Regulations (10 NYCRR 16). Chapter 1 is entitled, "State Sanitary Code" and Part 16 is entitled, "Ionizing Radiation." The statutory authority for the rules and regulations is found in the New York State Public Health Law, Section 225.

PROCEDURES

A. Contamination

The licensee shall make a reasonable effort to eliminate residual contamination.

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 applying the covering. A reasonable effort must be made to minimize the contamination prior to use of any covering.

The radioactivity on the interior surfaces of pipes, drain lines, or duct-work shall be determined by making measurements at all 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 duct-work. 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 purposes of measurement, shall be presumed to be contaminated in excess of the limits.



B. Relinquishing Control Above Limits

Upon request, the Department 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:

1. Provide detailed, specific information describing the premises, equipment or scrap, radioactive contaminants, and the nature, extent and degree of residual surface contamination.
2. Provide a detailed health and safety analysis which reflects 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.

C. Reporting

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 New York State Department of Health, Bureau of Environmental Radiation Protection, 2 University Place, Room 325, Albany, New York 12203, no less than 30 days prior to the planned date of abandonment. A copy of the survey report shall also be provided to the landlord or subsequent tenant, pursuant to Section 16.10 (b), New York State Sanitary Code (10 NYCRR 16).

The survey report shall:

1. Identify the premises and indicate the date of the survey.
2. Show that reasonable effort has been made to eliminate residual contamination.
3. Specify the manufacturer and model number of the survey instrument and the procedures used to calibrate the instrument, and include the last calibration date.
4. Describe the scope of the survey and general procedures followed.
5. State the findings of the survey in units specified in Table 1.
6. Confirm that the radiation levels shown in the survey will not be increased as a result of activities following the performance of the survey.

Following review of the report, the Department will consider visiting the facility to confirm the survey.



Table 1

Radioactive Surface Contamination Limits  
(see notes below)

Application	Alpha (dpm/100 cm <sup>2</sup> )		Beta/Gamma	
	Total	Removable	Total (mR/hr)	Removable <sub>2</sub> (dpm/100 cm <sup>2</sup> )
Controlled Area				
Basic Guide	15,000 max. 5,000 avg.	500	1.0	5,000
Clean Area	1,000	100	0.5	1,000
Non-controlled Area				
Skin, Personal Clothing	500	N.D.	0.1	N.D.
Release of Material or Facilities	2,500 max. 500 avg.	100	0.2	1,000

Notes to be used when using Table 1:

- a. Where surface contamination by both alpha- and beta-emitting nuclides exists, the limits established for alpha- and beta-emitting nuclides should apply independently.
- b. As 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.
- c. Measurements of average contaminant should not be averaged over more than one square meter. For objects of less surface area, the average should be derived for each such object.
- d. The maximum contamination level applies to an area of not more than 100 cm<sup>2</sup>.
- e. The amount of removable radioactive material per 100 cm<sup>2</sup> 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 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.
- f. N.D. means non-detectable.

