December 13, 2001

Memorandum To: George Pangburn, Director
Division of Nuclear Material Safety
Region I

From: Larry W. Camper, Chief
Decommissioning Branch
Division of Waste Management
Office of Nuclear Material Safety & Safeguards

Subject: DECOMMISSIONING RELEASE LEVELS FOR UNRESTRICTED USE FOR BUILDING SURFACES—MERCK (TAR DATED 12/22/2000, CONTROL NO. 128332) AND NIH (TAR DATED 2/7/2001, CONTROL NO. 129058)

This is in response to your memorandum to John Greeves, dated May 11, 2001, on this subject. In your memo, you asked for generic guidance on aspects of decommissioning release levels for unrestricted use for building surfaces. You asked that we address: (1) acceptable upper limits for release levels for unrestricted use for building surfaces in individual laboratories; (2) ALARA requirements for the release levels; (3) additional information that may be needed by licensees at the time of actual license termination; and (4) updates of the NUREG-1556 series documents to include this guidance. We understand that you are interested in license termination criteria for individual rooms, in operating facilities, that are being cleaned up for unrestricted use, even when license termination for the building is not currently being pursued.

There are two distinct situations that may exist, related to whether the license termination criteria of 10 CFR Part 20, Subpart E, are strictly applicable.

Release Levels for Unrestricted Use When Subpart E Is Applicable
Subpart E is applicable to facilities for which the license is being terminated, or for which the licensee requests removal of the facility as an authorized location in the license. Thus, Subpart E is considered applicable to an individual building if: (1) the license is being terminated (and thus the whole site will be released), or (2) the decommissioining timeliness criteria (of 10 CFR 30.36) require decommissioning of the building, or (3) the licensee requests removal from the license of an individual building.

For unrestricted release, the primary criterion of Subpart E is the dose constraint of 25 mrem/year (10 CFR 20.1402). The *NMSS Decommissioning Standard Review Plan*, NUREG-1727 (the SRP) provides the most current guidance on release values for decommissioning and license termination to meet this 25 mrem/year constraint. This document supersedes Regulatory Guide 1.86 for guidance on release of building surfaces. The SRP provides screening concentrations and discussions of more site-specific methods for compliance. For unrestricted release, screening levels for contamination on building surfaces are provided in

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Table C2.2 of Appendix C of the SRP. These screening levels are considered acceptable to meet the 25 mrem/year dose constraint, given that certain criteria are met. Section 2.3.2 of Appendix C of the SRP describes the criteria for using the screening levels, including the criterion that the fraction of removable contamination does not exceed ten percent. The same screening values are provided in Table Q.3 of Appendix Q of NUREG-1556, Volume 7*, Consolidated Guidance About Materials Licenses: Program-Specific Guidance About Academic, Research and Development, and Other Licenses of Limited Scope*. As noted in both tables, the screening levels were based on an assumption that no more than ten percent of the surface contamination is readily removable. A footnote to each table (C2.2 of the SRP and Q.3 of NUREG-1556, Volume 7) provides a method for accounting for removable fractions other than ten percent. Other sections of the SRP describe additional methods that may be used by licensees to justify more site-specific release levels.

Based on these considerations, if residual radioactivity is only present in buildings, and the criteria for screening have been met, the screening concentrations are acceptable to show compliance with the criteria of Subpart E. If a licensee proposes lower values, those would also be acceptable. However, we disagree with your proposal that the upper limit of acceptable concentrations be based generically on ten percent of the 25 mrem/year dose criterion.

You asked about use of release levels for individual laboratories. Section 2 of Appendix E of the SRP, *Implementing the MARSSIM Approach for Conducting Final Radiological Surveys*, provides guidance on selection and size of survey units. It recommends that "…for buildings, it is normally appropriate to designate each separate room as either 1 or 2 survey units (e.g., floors with the lower half of walls and upper half of walls with ceiling) based on the pattern of potential or residual radioactivity." Section 4.6 of the *Multi-Agency Radiation Survey and Site Investigation Manual* (MARSSIM) also recommends that, for indoor areas classified as Class 1, each room may be designated as a survey unit. Therefore, in general, each laboratory would be treated as one or more survey units. Thus, the screening release levels recommended in the SRP and in NUREG-1556, Volume 7, generally provide acceptable values to use on an individual laboratory basis, when Subpart E is applicable.

The radiological criteria for license termination for unrestricted use include a requirement that residual radioactivity be reduced to levels that are as low as reasonably achievable (ALARA). However, the SRP (Chapter 7 and Section 1.5 of Appendix D) indicates that if building surfaces are remediated to the generic screening levels, a quantitative ALARA analysis is not necessary. Instead, staff will consider use of good housekeeping practices (e.g., washing surfaces to remove the loose contamination) sufficient to meet the ALARA criterion.

Administrative Release Levels When Subpart E Is Not Strictly Applicable

If a facility is still operating and using radioactive materials, and is not pursuing license termination or removal of a building from the license, the radiological criteria for license termination in Subpart E are not strictly applicable. However, the dose limits of Subparts C and D of 10 CFR 20 are applicable. Operating licensees may choose to *administratively* implement measures consistent with the criteria of Subpart E as part of their program to ensure compliance with the public dose limit of Subpart D.

In cases where licensees administratively implement measures consistent with the license termination criteria, staff may consider the license termination guidance (as discussed above) as part of the guidance that may be used. Staff may also consider other guidance for operating facilities, particularly as related to the ALARA requirements.

We generally agree with your suggestions regarding additional documentation that may be required of licensees at time of actual license termination. Licensees should understand that use of administrative release levels (cleanup levels) or action levels (trigger levels for action) during operations may not be sufficient to meet the requirements for license termination. When a licensee eventually proposes to terminate its license, the licensee will have to meet the license termination regulations in place at that time. To support a license termination decision, the licensee may need to provide: (a) records of surveys made at the time of original laboratory release; (b) information to support a conclusion that building surfaces were not recontaminated, or additional, current release surveys; (c) results of surveys of pipes, ductwork, and other parts of the building that have not previously been evaluated; and (d) a demonstration that the residual radioactivity for the whole site (including any lands containing residual radioactivity) meets the regulatory criteria for license termination in place when license termination is pursued. If the license termination criteria are the same as the current criteria, we presume the use of the current screening levels and current survey procedures would be considered acceptable at the time of license termination. Thus, for such cases, new surveys should not generally be required.

Updates of NUREG-1556 Consolidated Guidance Documents
As you indicated, guidance on acceptable contamination levels for unrestricted release of building surfaces impacts guidance on release surveys that is addressed in many volumes of the NUREG-1556 series. We are working with IMNS staff to ensure that the guidance provided here is considered in the updates of the appropriate volumes of NUREG-1556.

Conclusion/Summary
For cases when the license termination requirements (Subpart E) are applicable, the regional staff can approve the use of the screening concentrations and simplified ALARA approaches as described above.

For cases when Subpart E is not strictly applicable, the regional staff should not approve license termination criteria (concentrations). However, the guidance for license termination may be considered as part of the guidance that may be used for the licensee to implement administrative cleanup levels. In this latter case, additional information may be needed at the time of license termination, to support the termination decision.

Should you have any questions about these recommendations, please contact Duane Schmidt at 301-415-6919.

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* See previous concurrence.

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