



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

April 17, 1992

RECEIVED

Docket No. 70-8

APR 23 1992

Mr. Harley L. Toy  
License Coordinator and  
Manager, Nuclear Services  
Battelle Memorial Institute  
505 King Avenue  
Columbus, Ohio 43201-2693

HARLEY TOY

Dear Mr. Toy:

RE: CURRENT NRC GUIDANCE, ACCEPTABLE CLEANUP CRITERIA AND PRACTICES FOR  
DECONTAMINATION AND DECOMMISSIONING (LICENSE NO. SNM-7)

On January 24, 1992, we met with you at Nuclear Regulatory Commission Headquarters to discuss Battelle Memorial Institute's (BMI) draft revision of Certification of Financial Assurance for decontamination and decommissioning (D&D). During this meeting we also described to you the current NRC guidance, acceptable cleanup criteria and practices for D&D of the BMI facilities and the need for BMI to agree in writing to the current NRC cleanup criteria listed below.

Pending codification of radiological criteria for decommissioning, the NRC will continue to use existing guidance, criteria and practices listed below to determine whether sites have been sufficiently decontaminated so that they may be released for unrestricted use, pursuant to the decommissioning rules in 10 CFR 30.36, 40.42, 50.82, 70.38, and 72.54. These cleanup criteria will be applied on a site-specific basis with emphasis, when necessary, to ensure that residual contamination levels are As Low As Is Reasonably Achievable (ALARA).

1. Options 1 and 2 of the Branch Technical Position "Disposal or Onsite Storage of Thorium or Uranium Wastes from Past Operations" (46 FR 52061, October 23, 1981).
2. "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct, Source, or Special Nuclear Material," Policy and Guidance Directive FC 83-23, Division of Industrial and Medical Nuclear Safety, August 1987.
3. "Termination of Operating Licenses for Nuclear Reactors," Regulatory Guide 1.86, June 1974, Table 1, for surface contamination of reactor facility structures. Also Cobalt-60, Cesium-137, and Europium-152 that may exist in concrete, components, structures, and soil should be removed such that the exposure rate is less than 5 microroentgen per hour above natural background at 1 meter, with an overall dose objective of 10 millirem per year (cf. Letter to Stanford University from James R. Miller, Chief, Standardization and Special Projects Branch, Division of Licensing, Office of Nuclear Reactor Regulation, U.S. Nuclear Regulatory Commission, April 21, 1982, Docket No. 50-141, (Enclosure 1).

In DP <sup>Pg 121-122 of</sup> (ML 003720010)

4. The Environmental Protection Agency's (EPA's) "National Primary Drinking Water Standards," 40 CFR Part 141. In accordance with FC 83-23, the maximum contaminant levels for radionuclides in public drinking water as established by the EPA should be used as reference standards for protection of groundwater and surface water resources.

5. The EPA's "Radiation Dose Guidelines for Protection Against Transuranium Elements Present in the Environment as a Result of Unplanned Contamination" (42 FR 60956; November 30, 1977). This document provides guidelines for acceptable levels of transuranium elements in soil.

In addition to these criteria, guidelines, and standards, the NRC will continue to use the additional guidelines listed in Table 1 on acceptable levels of contamination in soil to be released for unrestricted use.

Table 1. Additional Guidelines on Acceptable Levels of Contamination in Soil To be Released for Unrestricted Use

Radionuclide *	Maximum Soil Concentration (in pCi/g)
Cobalt-60 <sup>®</sup>	8
Strontium-90 <sup>#</sup>	5
Cesium-137 <sup>®</sup>	15
Radium-226 <sup>‡</sup>	5
Radium-228 <sup>‡</sup>	5

\* If only one radionuclide is present, then the maximum concentration is the value listed in the table. However, if more than one radionuclide is present, determine for each radionuclide the ratio between the measured concentration in soil and the concentration listed in the table. The sum of all such ratios may not exceed one (i.e., unity).

<sup>®</sup> Memorandum to W. E. Cline, Chief, Nuclear Materials Safety and Safeguards Branch, NRC, Region II, from J. W. N. Hickey, Chief, Operations Branch, Division of Fuel Cycle, Medical Academic, and Commercial Use Safety: Evaluation of Acceptability of Proposed Decommissioning Activities, May 6, 1987 (Enclosure 2).

<sup>#</sup> United Nuclear Corporation Resources Company, Approved Soil Decontamination Criteria for the Decommissioning of the UNC Facility, Docket No. 70-820, May 12, 1981.

<sup>‡</sup> U.S. Environmental Protection Agency, Health and Environmental Protection Standards for Uranium and Thorium Mill Tailings, 40 CFR Part 192, Subparts B and E, July 1, 1991.

Mr. Harley L. Toy

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Please respond back in writing your acceptance of these criteria or any questions you may have regarding them within three weeks from receipt of this letter. We want BMI to accept these criteria in writing because the Commission will approve and support BMI's unrestricted release of its facilities which meet these criteria.

If you have any questions or if we can be of additional assistance, please contact Dr. Tin Mo of my staff at (301) 504-2570.

Sincerely,

 for  
John W. N. Rickey, Chief  
Fuel Cycle Safety Branch  
Division of Industrial and  
Medical Nuclear Safety  
Office of Nuclear Material Safety  
and Safeguards

Enclosures: As stated

cc: Dr. Kenneth Brog, BMI  
Mr. Jefferson Neff, DOE, Columbus Field Office