



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D.C. 20555-0001

September 2, 1997

NOTE TO: Docket No. 040-02384  
RMI Titanium Company  
Decommissioning Project

FROM: Ronald B. Uleck, Project Manager *TBUleck*  
Materials Decommissioning Section  
Low-Level Waste and Decommissioning  
Projects Branch  
Division of Waste Management  
Office of Nuclear Material Safety  
and Safeguards

SUBJECT: CLARIFICATION OF RELEASE CRITERIA FOR  
URANIUM AND TECHNETIUM-99 IN GROUNDWATER

This staff note supplements information on radiological release criteria provided in Section 4.1 of the staff's Environmental Assessment and Section 2.4 of the staff's Safety Evaluation Report related to decommissioning of the RMI extrusion plant site in Ashtabula, Ohio.

In its Decommissioning Plan (DP), the licensee proposed a release limit of 30 pCi/l total uranium in groundwater (see Table 4-1 of the DP, Summary of Proposed RMI Titanium Company Extrusion Plant Decommissioning Criteria Cleanup Levels). As the basis for this limit, RMI (in Table 4-1) referenced this limit as follows:

"Proposed maximum contaminant level (MCL) for uranium (56 FR 33050, July 18, 1991). The MCLs established in 40 CFR 141 for radionuclides in drinking water represents a concentration that shall not produce an annual dose equivalent greater than 4 mrem/yr."

Clarification is needed on the basis for this limit. First, the regulations cited by RMI are proposed EPA regulations. The NRC Action Plan To Ensure Timely Cleanup of Site Decommissioning Management Plan Sites (57 FR13389; April 16, 1992; Action Plan), under which the licensee is proposing to decommission the extrusion plant site, does not recognize EPA's proposed regulations as a basis for licensing decisions. Second, the EPA-proposed 30 pCi/l limit is based on chemical toxicity to the kidney, not on dose from uranium.

CONTACT: Ronald B. Uleck, DWM/NMSS  
(301) 415-6722

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The Action Plan does not have a specific guideline or regulatory concentration limit for uranium in groundwater. NRC staff performed an independent dose analysis for the licensee-proposed limit of 30 pCi/l for uranium in groundwater. Results show that the potential dose to a member of the public would be about 5-6 mrem/yr, depending on the mix of uranium isotopes in the groundwater. The estimated dose of 5-6 mrem/yr is the basis for staff's approval of the proposed 30 pCi/l limit.

The 4 mrem/yr dose criterion applies to isotopes that emit beta and photon radioactivity; this criterion is provided in 40 CFR 141.16, which is referenced in NRC's Action Plan. Technetium-99 is a beta-gamma emitting radionuclide. The licensee-proposed limit of 900 pCi/l for technetium-99 meets the 4 mrem/yr requirement, and is acceptable.

cc: RMI Distribution List

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