RMI-MGR:96-243
Docket #040-02384
License #SMB-602

September 13, 1996

Mr. Ron Uleck
Mail Stop T-7F27
U.S. Nuclear Regulatory Commission
11555 Rockville Pike
Rockville, MD 20852-2738

Dear Mr. Uleck:

Please find below RMI's response to NRC comment #21(a) as contained in your letter dated May 3rd, 1996.

NRC Comment #21(a) (May 3rd, 1996) - DP Table 4-1

21(a) NRC comment:
For the Tc-99 cleanup level in soil, please provide calculations (or appropriate references) to estimate, using RESRAD or other pathway analysis code, the dose from 220 pCi/g for the resident farmer scenario.

RMI response:
The following calculation provides the basis for the 220 pCi/g limit:

The annual occupational ingestion limit for Tc-99 is 4000 μCi, based on Appendix B to 10 CFR 20. Since this limit is based on an annual occupational exposure limit of 5000 mrem, and the annual exposure limit for the general public is 100 mrem, the public ingestion limit for Tc-99 can be calculated as 4000 μCi/year × (100 mrem/5000 mrem) = 80 μCi/year = 8×10^7 pCi/year.

Based on "Risk Assessment Guidance for Superfund, Volume 1: Human Health Evaluation Manual, Supplemental Guidance: Standard Default Exposure Factors" (USEPA, March 1991), the average annual soil ingestion rate for an adult in an agricultural setting (the worst-case scenario) is 100 mg/day (36.5 g/year). At 220 pCi/g, the total activity ingested annually is 220 pCi/g × 36.5 g/year = 8030 pCi/year, or roughly 0.01% of the public ingestion limit. RMI feels this low percentage readily justifies the 220 pCi/g limit.

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If you have questions or need additional information please call.

Very truly yours,

RMI ENVIRONMENTAL SERVICES

J. W. Henderson
Division Manager

JWH/EPM:bm

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