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Mrs. Kay Drey  
515 West Point Ave.  
University City, MO 63130

Dear Mrs. Drey:

Thank you for your letter of January 31, 1983. I have responded to your questions in the order they are raised in your letter:

1. The references in which it was established that the level of cerium-144 would be a good indication of the level of transuranic material in waste are:

Cline, J.E., and D.C. Hetzer, "Study of Transuranic Concentration Levels in Solid Radioactive Waste from Commercial Power Reactors," NP-631, Prepared by Science Applications, Inc. for the Electric Power Research Institute, January 1978.

Cline, J.E., et. al, "Activity Levels of Transuranic Nuclides in Low-Level Solid Wastes from U.S. Power Reactors," NP-1052, Prepared by Science Applications, Inc. for the Electric Power Research Institute, April 1979.

Cline, J.E., et. al, "Activity Levels of Transuranic Nuclides in Low-Level Solid Wastes from U.S. Power Reactors," NP-1494, Prepared by Science Applications, Inc. for the Electric Power Research Institute, August 1980.

§61.55(a)(8) of Part 61 allows use of indirect methods to determine concentrations of radionuclides in waste. Such indirect methods include use of scaling factors which relate the inferred concentration of one radionuclide to another that is measured. We would expect that scaling factors would be initially determined, and then periodically confirmed, through direct measurement. Once a scaling factor is established on a waste stream or facility specific basis (e.g., cerium/TRU), we would allow a licensee to make a determination of the content of scaled radionuclides (TRU content) using the scaling factor and only routinely measuring the scaling isotope (cerium). As noted above, a licensee would need to periodically confirm the scaling factor through direct

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measurement of both scaled and scaling radionuclides. In addition, guidance on use of scaling factors and other methods for determining radionuclide concentrations in waste will be set out in a technical position on waste classification. This technical position will be available shortly.

2. A list of our technical positions is enclosed along with copies of all those currently available. The technical positions on waste classification and waste form will be available shortly.

If I may be of further assistance, please let me know.

Sincerely,

Original Signed By

Paul Lohaus, Section Leader  
Low-Level Waste Licensing Branch

Enclosure: As stated above

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