

46 PR 38081
(PR-61)
WM-4

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623-55*

Mrs. Kay Drey
515 West Point Avenue
University City, MO 63120

Dear Mrs. Drey:

In your letter to me dated September 13, 1982 you asked two questions about disposal of transuranic waste and proposed 10 CFR Part 61, "Licensing Requirements for Land Disposal of Radioactive Waste."

Question: 1. Would you please tell me the status of the proposal to permit transuranic wastes with levels greater than 10 nanocuries per gram to be buried with low-level waste?

Response: A final version of 10 CFR Part 61 is under review by the Commission. Commission approval was requested by means of a staff paper SECY-82-204, forwarded to the Commission May 19, 1982. Staff briefed the Commission on the proposed final rule in a public meeting July 14, 1982. The final rule under review provides for routine disposal of alpha emitting transuranic nuclides with half-lives greater than five years in concentrations of up to 10 nanocuries per gram as Class A waste and in concentrations of up to 100 nanocuries per gram as Class C waste. If the transuranic concentration exceeds 10 nanocuries per gram but not more than 100 nanocuries per gram, the waste may be disposed of as Class C waste provided all the waste form requirements are met and provided the concentrations of other nuclides present would not otherwise limit disposal. Class C wastes must be stable and must be disposed of in a manner to provide additional protection for the inadvertent intruder. The most common method of providing additional intruder protection is expected to be deeper burial.

Question: Also, would you please tell me how an operator of a nuclear power plant is supposed to be able to test for the level of transuranic waste in the 55-gallon drums of evaporator bottoms, demineralizer resins and saturated filters? That is, does every drum have to be tested separately to determine the concentration in nanocuries per gram? I wonder about this because of the notorious difficulty of monitoring for alpha radiation.

Response: The final version of Part 61 under Commission review provides flexibility for determining concentrations of radionuclides in waste.

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Indirect methods may be used provided the indirect methods can be correlated with actual measurements. Specifically the proposed final rule states:

Determination of concentrations in wastes. The concentration of a nuclide may be determined by indirect methods such as use of scaling factors which relate the inferred concentration of one radionuclide to another that is measured, or radionuclide material accountability, if there is reasonable assurance that the indirect methods can be correlated with actual measurements. The concentration of a radionuclide may be averaged over the volume of the waste, or weight of the waste if the units are expressed as nanocuries per gram.

Generally, power plant licensees will not directly measure transuranic concentration in individual drums. Many radionuclides in power plant wastes can be directly measured through techniques such as gamma-spectral analysis. As your question notes, however, many transuranic radionuclides are difficult to measure. For transuranic nuclides, power plants may project concentration through ratioing to concentrations of radionuclides which can be readily measured, such as Ce-144, and which has been shown to reflect transuranic concentrations present. Scaling factors for determining concentration ratios would be developed on a facility and waste stream specific basis to establish their validity. In determining scaling factors, licensees would perform actual measurements of transuranic concentrations and correlate these to operating parameters. The measurements on actual wastes would be performed on waste samples taken prior to solidification and packaging. The continuing validity would have to be confirmed periodically through direct measurements.

We appreciate your interest in Part 61 and if we can be of further help, please let us know.

Sincerely,
Original Signed By
Kitty S. Dragonette

for

Paul H. Lohaus, Section Leader
Low-Level Waste Licensing Branch
Division of Waste Management
Office of Nuclear Material Safety
and Safeguards

*See previous concurrence

(input from T Johnson 10/1/82)

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signed for
Paul Lohaus
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instructions
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