



Department of Energy
Field Office, Albuquerque
Los Alamos Area Office
Los Alamos, New Mexico 87544

JUN 22 1993



CERTIFIED MAIL - RETURN RECEIPT REQUESTED

Ms. Barbara Hoditschek
Permit Section Coordinator
Hazardous and Radioactive Materials Bureau
New Mexico Environment Department
525 Camino de Los Marquez
P. O. Box 26110
Santa Fe, New Mexico 87502

Dear Ms. Hoditschek:

This letter concerns the Source Term Test Program (STTP) which we discussed briefly during an environmental issues meeting held at New Mexico Environment Department (NMED) on June 16, 1993. During July 1992, personnel from Los Alamos National Laboratory (LANL) and Department of Energy met with members of your staff to discuss the regulatory aspects of the STTP. After a briefing by LANL personnel, it was determined that the project did not clearly fit within the definition of a treatability study. Consequently, we wrote to your office proposing to conduct the STTP under an expanded waste analysis plan as recommended by your staff (copy enclosed). This letter provides updated information on the proposed STTP.

There have been a number of changes to the STTP as originally proposed. The most significant change has been the reduction in volume of waste to be used in the experiment. The number of test containers proposed has been reduced from 117 to 15 for the drum-scale, and from 75 to 39 for the liter-scale. None of the containers will be spiked with lead, minimizing the potential for mixed waste generation. The potential for high-level mixed waste generation will be further minimized by reducing the number of test containers that are to be spiked with americium-241. Americium-241 will be added to only six of the liter-scale tests at a concentration of 25 milligrams per test container. The remainder of the containers originally planned to receive americium-241, including the drums, will instead be spiked with the rare-earth elements neodymium or europium, and the actinides thorium-232, uranium-238, and neptunium-237. Overall, these changes coupled with a number of engineered safety devices should substantially reduce the potential for accidental releases of hazardous or radioactive materials.



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Briefly, the project will involve removal of Transuranic (TRU) wastes, some of which may be mixed waste, from LANL's inventory and placing it into specially designed test containers fitted with sampling ports. The total number of containers, as previously mentioned, will be 15 drum-scale and 39 liter-scale. Prior to placement into the drums, the waste will undergo visual characterization only. For the liter scale, cores will be taken from homogeneous (cemented) waste drums. Cores will be ground to approximately one centimeter in size prior to placement into the experimental containers. All of the containers would then be saturated with a Waste Isolation Pilot Plant (WIPP) brine solution. All waste handling such as visual characterization; grinding of cores; loading of test containers; addition of actinides, brine, salts and bentonite; and sealing the test containers will take place in LANL's Size Reduction Facility at Technical Area (TA) 50. After each container is sealed, it will be transferred to the Chemistry and Metallurgy Research building, TA-3-29, where the experiment will be located.

During the course of the experiment, four years, the containers would be periodically agitated and sampled. Year one is planned for methods development only beginning in the Spring of 1994. Actual experimentation with waste, would begin in the second year and continue through the third. Decontamination and decommissioning of the facility and all experimental apparatus is planned for the fourth year. Samples would be analyzed for dissolved actinides and certain other elements. Secondly, the project will analyze relative amounts of gas generated. Because the intent of the experiment is to determine the solubility of actinides in WIPP brines, analysis for volatile organics and toxicity characteristic metals will be performed only to facilitate future disposal of the waste at the end of the project.

LANL will revise the Waste Analysis Plan to include the analytical work and will report the activities of this program according to the treatability study requirements as outlined in the previous discussion and letter.

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If you would like to discuss this matter further or if you have any questions or concerns regarding the STTP program, please call Jon Mack of my staff at (505) 665-5026.

Sincerely,


Joseph C. Vozella, Acting Chief
Environment, Safety and Health
Branch

LESH:9JM-024

Enclosure:
Letter, Hoditschek/Vozella,
dtd. 9/15/92

cc w/enclosure:
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