Letter from Carolyn L. Huntoon, Assistant Secretary for Environmental Management, United States Department of Energy, on Buried TRU Waste

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July 18, 2000

Dr. Arjun Makhijani, President
Institute for Energy and Environmental Research
6935 Laurel Avenue
Takoma Park, MD 20912

Dear Dr. Makhijani:

In March 1998, in the Department of Energy's (DOE's) response to your October 1997 report "Containing the Cold War Mess: Restructuring the Environmental Management of the U.S. Nuclear Weapons Complex," my office committed to updating inventory data for a special class of legacy waste known as "buried transuranic (TRU)-contaminated wastes." Buried TRU wastes were disposed of mainly at five sites by shallow land burial before the 1970 directive to segregate and retrievably store such wastes was issued. Historically, with some possible exceptions, these wastes have been considered irretrievable except by extraordinary means. The anticipated management strategy for these wastes was to monitor them, to take such remedial actions as may be necessary, to re-evaluate their safety periodically, and to conduct technology development as needed. We believe that this approach remains sound.

Your 1997 report indicated that DOE's "Official data on the volume, mass, and radioactivity of buried transuranic waste and transuranic soil are inconsistent and contradictory. There does not appear to be any scientific basis on which data are entered and changed from one year to the next, and one document to the next." The DOE agreed with this criticism and, in response, committed to "undertake a review and update of its information on its inventory of buried TRU wastes as well as the status of remedial decisions proposed or made to date." The DOE further committed to update the information using consistent and documented assumptions. The results from this study have been compiled and analyzed by my staff and are presented in the enclosed main report and data base in fulfillment of the March 1998 commitment.

The main results for the updated buried TRU study are as follows:

- Although site-to-site variations exist, the composite updated volume of 126,000 cubic meters for buried TRU wastes (with an additional 11,000 cubic meters disposed of at intermediate depths) is not significantly different from previous recent official estimates, less than a 10 percent difference.

- Composite updated activity estimates are about 755,000 curies, which are intermediate between past IDB estimates (which are known to be incomplete) and the conservative

estimates used in related environmental impact analyses (which sought to bound the impacts). This total makes the buried TRU activity about 30 percent of the retrievably stored TRU waste activity destined for disposal at the Waste Isolation Pilot Plant (WIPP) and is higher than claimed by DOE in a 1987 congressional report on the buried waste problem. Note, however, that a specific percentage was never the primary basis for past management strategies for these wastes.

- Due to the lack of adequate records on, and the lack of formal waste characterization of, the buried TRU wastes, staff at field sites by necessity used back-extrapolations from process knowledge and facility accountability records to derive estimates of the buried TRU inventories. These types of information bases lead to generally low confidence in the reported numbers.

- There is little or no information on volumes of soil potentially contaminated by leaching of buried solid wastes, nor is there information on the hazardous waste components known to have been co-mingled with the radioactive components at the buried TRU waste sites. These are important uncertainties that must be weighed by DOE and the regulatory authorities in making remedial action decisions on these sites, decisions which are largely yet to be made because characterization of most buried TRU sites is not yet complete.

- For those buried TRU sites where characterization is complete enough to satisfy the regulatory authorities and, thus, remedial alternatives can be identified, a mix of remedial alternatives is being considered, including in situ containment and exhumation.

- Even though a small fraction of the universe of TRU activity contained in all types of DOE radioactive waste is projected to remain in shallow land burial, this activity is potentially available for environmental transport and will need to be carefully monitored over the long term.

- The current approach for managing the buried TRU sites--in the same manner as other environmental restoration issues, under the applicable environmental cleanup statutes, regulations, and negotiated compliance agreements--is still appropriate. Even if DOE believed significant policy changes for dealing with the buried TRU sites were in order, DOE could not unilaterally implement them due, in part, to the decentralized nature of remedial-action decision making. DOE believes that the current policy of addressing the buried TRU sites locally under existing environmental regulations should continue.

The information on buried TRU-contaminated waste summarized in the report was collected from technical staff at local field offices, such as Hanford and the Idaho National Engineering and Environmental Laboratory. This information will support remedial action planning at the local level (where exhaustively detailed reviews and reconciliations of past inventories have and will be done as needed) and will support WIPP disposal-capacity evaluations. The information in the report will be provided to the Central Internet Database in the near future and, thus, will be made publically available (www.em.doe.gov/cid).

We appreciate the constructive effort by the Institute of Energy and Environmental Research in its analysis and recommendations regarding buried TRU-contaminated waste. Although we may not always agree on the methods, I believe we agree on the goal of protecting human health and the environment. We look forward to continued technical exchanges with you in this challenging process of cleaning up the DOE nuclear weapons complex.

If you have any questions, please contact me, Mr. James Werner at 202-586-9280, or Mr. Thomas Longo at 301-903-8120.

Sincerely,

Carolyn L. Huntoon
Assistant Secretary for
Environmental Management

Enclosure