Department of Energy

Oak Ridge Operations Office
P.O. Box 2001
Oak Ridge, Tennessee 37831—

Mr. Randall R. Gordon
3602 River Road
Ten Mile, Tennessee 37880

Dear Mr. Gordon:

RESPONSES TO SITE SPECIFIC ADVISORY BOARD COMMENTS ON GUNITE TANKS REMEDIATION FEASIBILITY STUDY/PROPOSED PLAN D2

Thank you for your comments on the subject document. Our response to your comments are enclosed. We appreciate your input on this important Comprehensive Environmental Response, Compensation, and Liability Act document to help ensure that the basis for our decisions is explained and understood. Many of the comments you raised will be addressed in the Record of Decision which is currently being prepared and in the Remedial Design Report/Remedial Action work plan which will be prepared later this Fiscal Year.

If you have any questions, please call Sandy Perkins at (423) 576-1590.

Sincerely,

Rodney R. Nelson
Assistant Manager for
Environmental Management

Enclosure

Responses to Site Specific Advisory Board Comments
On Gunite Tanks Remediation Feasibility Study/Proposed Plan D2

Comment 1. The document describes the removal of sludges as an interim action and states that it is expected that the removed sludges will be sent to the Waste Isolation Pilot Plant (WIPP). Since the WIPP facility is not yet an operational facility, there should be discussion about the safety of storing the Gunite tank waste in the Melton Valley Storage Tanks (MVST) for an unknown interim period. Either in this document or elsewhere, there should be contingency plans in case postponement of the WIPP continues indefinitely or WIPP does not open at all.

Response The consolidation of all Oak Ridge National Laboratory (ORNL) Transuranic sludges in the MVST for treatment and shipment to WIPP is a central component of the Site Treatment Plan submitted under the provisions of the Federal Facilities Compliance Agreement. The Plan calls for sludge transfers of 50,000 gallons from Gunite Tanks, 20,000 gallons from the Old Hydrofracture Facility, and 30,000 gallons from the Bethel Valley Evaporator Service Tanks to be consolidated with the 100,000 gallons of sludge currently located in the MVST. Specific contingency plans have not been developed for the possibility that WIPP may not open and that longer storage of the sludges in MVST might be required. The MVST are fully permitted, "state of the art," tanks which are expected to have continued service lives in excess of twenty five years. This would provide sufficient time for the development and implementation of an alternative approach to the long-term management of the sludges in the MVST should the need arise.

Comment 2. The document also discusses that remedial action on the contents of TH-4 is being deferred until a later date. However, the program under which TH-4 will be addressed is not identified. Similarly, the remedial actions to address the tank shells, appurtenances, surrounding soils, and groundwater have not been identified, although it is our understanding that these actions will be addressed in the Bethel Valley Record of Decision. The public needs to be informed as to when and how deferred actions will be addressed.

Response The Bethel Valley Watershed Record of Decision will include remedial action plans for TH-4, several other smaller Gunite tanks, the eight large tank shells, appurtenances, surrounding soils, and groundwater, in addition to the remainder of the Bethel Valley area. The current plans call for the D1 Remedial Investigation/Feasibility Study to be issued June, 1998, the D1 Proposed Plan to be issued November, 1998, and the D1 Record of Decision to be issued April, 1999.

Comment 3. We assume that the most efficient time to determine the post-transfer residual contamination of each tank is just after the sludge and liquids have been removed from the tank. The initial sampling plan outlined in the section describing alternatives (p. 11) will likely be too sparse unless video observations suggest that the tank inner surfaces appear to be uniform and clean. The Oak Ridge Reservation Environmental Management Sites Specific Advisory Board recommends that the Record of Decision explicitly outline a more comprehensive minimum sampling plan which will determine the nature of irregular features. This information will allow for dependable plans to be developed for the future tank closures.

Response The Department of Energy (DOE) plans to obtain the data to characterize the residual contamination in the tanks shells at the completion of the waste removal and wall cleaning activities. The details of the shell characterization are being developed as part of the on-going Treatability Study, and are planned to be reflected in the Remedial Design Report/Remedial Action Work Plan.

Based on information currently in hand, DOE expects that the sampling and analysis required for the tank shells will be generally as described in the Feasibility Study/Proposed Plan. Based on analyses performed in the "Risk Assessment Pathway/Transport Modeling for the Gunite and Associated Tanks (GAAT), ORNL" (DOE/OR/02-1454&D1, March 1996) there is no reasonable scenario that would result in the GAAT shells being a risk after sludge removal, a "washing" of the wall, and then filling the tank with grout/concrete. The controlling mechanism for any radionuclides to contact groundwater around the exterior of the tanks is by diffusion. The rate of diffusion for ^{90}Sr, coupled with the relatively short half-life of ^{90}Sr, is such that a remaining shell inventory after tank cleaning of billions of curies would be required for the ^{90}Sr levels at the exterior of the tank to approach any risk level for ^{90}Sr. The diffusion rates for other radionuclides are slower than for ^{90}Sr and these radionculides are not mobile in the environment. Even if the GAAT shell disintegrates in 300 years, these non-mobile radionuclides will be immediately captured by surrounding soil, 20 plus feet underground. The small ^{90}Sr inventory remaining after clean out would have decayed through ten half-lives during this 300 period. There is nothing in our experience or the literature to refute this logic. During the Treatability Study we will investigate the logic and provide data to confirm this conclusion.