FINDING OF NO SIGNIFICANT IMPACT

WIDENING TRENCH 36 OF THE 218-E-12B LOW-LEVEL BURIAL GROUND

HANFORD SITE, RICHLAND, WASHINGTON

U.S. DEPARTMENT OF ENERGY

February 1999

AGENCY: U.S. Department of Energy

ACTION: Finding of No Significant Impact

SUMMARY: The U.S. Department of Energy (DOE) has prepared an Environmental Assessment (EA), DOE/EA-1276, for widening unused Trench 36 in the 218-E-12B Low-Level Burial Ground, Hanford Site, Richland, Washington. DOE has determined that the proposed action is not a major federal action significantly affecting the quality of the human environment, within the meaning of the *National Environmental Policy Act of 1969* (NEPA). Therefore, the preparation of an Environmental Impact Statement (EIS) is not required.

ADDRESSES AND FURTHER INFORMATION:

A single copy of the EA and further information about the proposed action is available from:

H. E. Bilson, Director
Waste Programs Division
U.S. Department of Energy
Richland Operations Office
P. O. Box 550 S7-41
Richland, Washington 99352
(509) 376-1366

For further information regarding the DOE NEPA Process, contact:

Carol M. Borgstrom, Director
Office of NEPA Oversight
U.S. Department of Energy
1000 Independence Avenue, S.W.
Washington, D.C. 20585
(202) 586-4600 or (800) 472-2756

PURPOSE AND NEED: The U.S. Department of Energy (DOE) needs cost-effective waste disposal capacity to accommodate bulk category 1 Low-Level Waste (LLW), and to facilitate segregation of LLW.

BACKGROUND: LLW is disposed in active Low-Level Burial Grounds (LLBG), which are located in the 200 East and 200 West Areas. Examples of waste disposed in the LLBG are process waste, laboratory waste, construction debris, containerized waste, and bulk waste. Typical containers used for disposal of LLW are metal drums from 3.8 liters (1 gallon) to 416.4 liters (108 gallons) in size, and boxes made of wood, concrete, metal, and fiber-reinforced plastic. Current bulk (uncontainerized) waste forms disposed in V-type LLW trenches typically consist of vegetation (e.g., tumbleweeds), wood scraps, soil, and other types of waste as stated in the *Low-Level Burial Grounds Disposal Plan*. In addition, large items are received periodically at the LLBG. These items include tanker trucks, cover blocks, cranes, and failed equipment, which also are disposed of as bulk waste.

Because the existing V-type LLW trenches were designed before 1976 and analyzed in ERDA-1538, the V-type trenches are insufficient for current disposal operations of bulk waste. The V-type trenches are narrow at the bottom and are generally less than about 5 meters (16 feet) deep. Current procedures require 2.44 meters (8 feet) of clean fill dirt over all waste disposed in the LLBG. The LLBG area can be more efficiently utilized by digging trenches as wide as possible. Given trenches of equivalent depth, the wider trenches would allow more waste to be placed per square feet of surface area. This not only saves on trench construction costs, but also decreases closure cover size and cost for a given volume of waste.

Typical operations in the LLBG include receipt of LLW from DOE approved generators. The vehicle carrying the LLW, such as a standard semi-trailer truck, flatbed truck, dump truck, or other conveyance, is positioned within or beside the receiving trench. The LLW is dumped directly or unloaded using forklifts, a crane, and/or an alternate approved method. Disposal documentation is completed, and the trench is backfilled to cover the LLW. Trench stabilization will occur before final closure.

The existing trench designated to receive only bulk LLW is being filled rapidly. LLW could be disposed in presently configured trenches; however, this would result in both higher short-term (stabilization) and long-term (final closure cover) expense. Any efforts taken to increase the waste capacity per unit surface area for the trenches receiving this waste type will reduce closure costs.

LLW generated onsite or by offsite generators is disposed in the 200 East and 200 West areas of the Hanford Site. An assessment is made by Operations to verify that generators have the appropriate procedures, systems, and operational capabilities to meet the LLBG waste acceptance criteria. The generators compile a waste profile sheet for a waste stream proposed for disposal.

Because of uncertainty associated with forecasting, emerging needs, and actual generation of waste, it is necessary to maintain a certain level of cushion to have the capacity to support all waste types. The latest available information for expected volumes of LLW bulk waste indicates that the baseline bulk LLW volumes forecasted for onsite and offsite would result in essentially filling the current bulk LLW Trench 42 by the end of fiscal year (FY) 1999. If the maximum projected volume of LLW were added, Trench 42 probably would be filled around midyear. In addition, acceptance of bulk shipments per year, which were not identified in the forecast, is required. These annual unforecasted volumes typically ranged from about 142 to 1,133 cubic meters (5,000 to 40,000 cubic feet). Therefore, to ensure that sufficient capacity is available to support generator requests, Trench 36 would need to be widened in FY 1999.

In 1975, Hanford Site burial ground activities were evaluated in the *Final Environmental Impact Statement on Waste Management Operations, Hanford Reservation*. In May 1997, DOE issued the *Final Waste Management Programmatic Environmental Impact Statement* (WM-PEIS) examining the DOE complex-wide management of current and anticipated volumes of various waste, including LLW. DOE has begun preparation for a Hanford Site Solid (radioactive and hazardous) Waste Program EIS (HSW-EIS) that examines the management of various

waste volumes subject to the alternatives evaluated in the WM-PEIS, including, but not limited to, the disposal of LLW and closure of LLBG. The Record of Decision for the WM-PEIS for LLW is being prepared. This environmental assessment is an interim action to, and would not prejudice any alternatives or decisions that would be made in the HSW-EIS. Final closure and any monitoring issues of trenches in the LLBG would be addressed in future environmental documentation.

PROPOSED ACTION: The proposed action would widen Trench 36 within the 218-E-12B Low-Level Burial Ground for disposal of LLW. The base of this trench would be widened on the east side from approximately 1.5 meters (5 feet) to 9.1 meters (30 feet) with the same slope (1.5:1) along the entire 275 meter (900 foot) length of the trench. Existing bulk LLW disposal capacity in Trench 36 would increase almost six times from approximately 1,050 cubic meters (37,200 cubic feet) to 6,320 cubic meters (223,000 cubic feet). Bulldozers using standard construction practices would move soil to the east side of the length of the current trench configuration to be used as backfill during operations. Backfilling operations would cover the bulk LLW with a minimum of 2.4 meters (8 feet) of soil. The proposed action would begin in FY 1999.

The bulk LLW would be unloaded into the disposal trench by dumping off the back end of a dump truck, or by use of a forklift, crane, or other approved method. Typical LLW operations on the Hanford Site would not change as a result of the proposed action. Widening Trench 36 would provide for more cost-effective land use and would increase the capacity of the LLBG, without an increase to the footprint of the LLBG. The cost of widening Trench 36 would be approximately $29,000 based on excavation costs of $2.73 per cubic meter ($2.10 per cubic yard).

ALTERNATIVES CONSIDERED: No-Action: In the No Action alternative, DOE would continue to dispose of bulk LLW in existing trench space. Trench 42 would be used until full (by the end of FY 1999). Existing trenches designated for other waste types might be used for bulk LLW disposal. Additional V-type trenches might have to be added to the existing LLBG. This would result in less efficient use of trench space at a higher cost for eventual disposal of Category 1 LLW.

Alternative to Widen Trench 14 in the 218-E-10 Burial Ground: This alternative would extend and widen existing partially filled Trench 14 in the 218-E-10 Burial Ground for disposal of bulk LLW. However, because this trench is partially filled, this trench would provide less volume than the Proposed Action.

Alternative to Widen Trench 37 in the 218-W-4C Burial Ground: This alternative would widen the existing and unused Trench 37 in the 218-W-4C Burial Ground. Because Trench 37 is not as long and is more shallow than Trench 36, this alternative would not provide equivalent capacity for bulk LLW disposal.

Alternative to Dig a New Trench: An alternative to dig a new trench to the size of the proposed action was considered. However, at a cost of about $2.73 per cubic meter ($2.10 per cubic yard) to excavate soil and dig a trench in an

existing LLBG of similar size to the Proposed Action, the new trench would cost approximately $60,000, more than twice the cost for the Proposed Action.

Alternative for OffSite Disposal: An alternative for offsite disposal was considered. If this alternative was taken, the excavation might be similar to the proposed action. However, this alternative would not take advantage of the using the existing LLBG and related infrastructure owned and operated by DOE. Thus, the cost for disposal of bulk LLW may be more expensive. In addition, there would be increased transportation risk of sending Hanford LLW offsite.

ENVIRONMENTAL IMPACTS: All soil disturbances would occur on previously disturbed soil within the 218-E-12B Burial Ground. Because Trench 36 is an unused trench, the associated soils are free of pre-existing radioactive or hazardous material. Soil movement during backfilling activities would be accompanied by watering down, or other dust suppression methods. Small gaseous, particulate, or thermal discharges from trucks, fork lifts, and other equipment would be generated during routine operations. No hazardous or dangerous waste is expected to be present or generated. Therefore, it is anticipated that impacts to the environment would not be consequential.

It is expected that there would be no adverse effects on cultural resources from the proposed action. In addition, no Federal or State-listed, proposed, candidate, threatened, or endangered species are expected to be affected.

Safety Impacts: No significant impacts are expected. Construction and operations will conform to recognized safety codes and regulations to ensure a safe working environment. Because the proposed action would take place in a clean area, no contamination, radionuclide releases, or direct radiation exposure during trench widening activities would occur. The potential radiation received by workers during the operations of the proposed action would be typical of exposure in other LLBG, and be administratively controlled below DOE limits of an annual effective dose equivalent (EDE) of 5 rem per year.

The reasonably-foreseeable accidents under the construction phase of the proposed action for widening Trench 36 would be typical construction accidents. All construction personnel would follow approved safety procedures for the trench-widening activities. Public health and safety would not be affected because the area is closed to the general public. Typical construction hazards would exist, however the risk of severe accidents would be small.

A reasonably foreseeable accident considered during operation would be a dispersal of contamination from breach of a waste bulk soil container [21 cubic meters (27 cubic yards)] (abnormal operation with stable meteorology), as analyzed in the "Solid Waste Burial Grounds Interim Safety Analysis." For this scenario, a waste bulk soil container is one typical dump truck load of bulk waste. It is postulated that a single container of waste bulk soil is spilled because of an operator error that results in an unplanned dumping or a vehicle accident that breaches the container. The contents of a breached container are assumed to be ejected from the container with sufficient force to create an amount of fugitive dust comparable to the amount released from dumping the contents of a container down the trench working

face. A plume would originate from the point of the release, which is presumed to occur on or adjacent to a facility road or transfer pad. Some additional fugitive dust would be created in the process of spill cleanup; this release is assumed to be comparable in magnitude to the release resulting from spreading one container of bulk waste soil in the disposal trench. Because waste handling would not occur at windspeeds of greater than 24 kilometers per hour (15 miles per hour), the contribution of wind suspension to the release is considered to be negligible. The consequences of this accident would still be well below radiological risk comparison guidelines.

The respective maximum onsite worker and offsite dose consequences for this accident scenario are 9.40×10^{-6} rem EDE and 4.95×10^{-9} rem EDE, respectively. This would result in 3.76×10^{-10} latent cancer fatalities (LCF) to the maximum onsite worker and 2.48×10^{-13} LCF to the offsite population. At a medium probability with a low consequence level, the onsite risk acceptance is low and would not be exceeded.

Hazards common to earth-moving and crane-operating projects would exist. Operations in Trench 36 would be typical of waste handling in the LLBG and would be conducted in conformance with recognized safety codes, regulations, and approved procedures. Administrative controls would reduce the chance of accidents.

Nonradiological risks to workers from occupational illness or injury are based on statistics for DOE and DOE contractor experience. The average 'total recordable case rate' for the years 1990-1994 was 4.1 per 200,000 worker hours. Using the standard assumption for DOE and contractors of 1,830 hours per year for a full-time equivalent (FTE) worker and DOE's total recordable cases in 1995; 0.06% were fatalities and 45% were lost workday cases. There has been one lost workday case reported in LLBG over the last 2 years. Because the average LLBG worker would not spend a full FTE actually working in the trenches of LLBG, it is expected that there would be less fatalities and lost workday cases.

Socioeconomic Impacts: Existing Hanford Site construction and operations personnel would be used during construction and operations, therefore no socioeconomic impacts are expected from the proposed action.

Environmental Justice: Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, requires that federal agencies identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of their programs and activities on minority and low-income populations. Minority and low income population groups are present near the Hanford Site. The analysis of the impacts in this EA indicates that there will be minimal impacts to both the offsite population and potential workforce by implementing the proposed action, because the proposed action will occur predominately on the Hanford Site and the offsite environmental impacts from the proposed action in this EA are expected to be minimal. Therefore, it is not expected that there will be any disproportionate impacts to any minority or low-income portion of the community.

Cumulative Impacts: Cumulative environmental impacts were considered but no significant cumulative impacts are expected from implementation of the proposed action.

DETERMINATION: Based on the analysis contained in the EA, and receiving no public comments, I conclude that the proposed action to widen Trench 36 in the 218-E-12B LLBG does not constitute a "major federal action significantly affecting the quality of the human environment" within the meaning of NEPA. Therefore, an EIS is not required.

Issued at Richland, Washington, this 11 day of February, 1999.

for Linda K. Bauer

James C. Hall
Acting Manager
Richland Operations Office