FINDING OF NO SIGNIFICANT IMPACT

TRENCH 33 WIDENING IN 218-W-5 LOW-LEVEL BURIAL GROUND

HANFORD SITE, RICHLAND, WASHINGTON

U.S. DEPARTMENT OF ENERGY

July 1997

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-1203, for widening unused Trench 33 in the 218-W-5 low-level burial ground, Hanford Site, Richland, Washington. Based on the evaluation in the EA, and considering comments from the State of 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:

Single Copies of the EA and further information about the proposed action are available from:

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For further information regarding the DOE NEPA Process, contact:

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

BACKGROUND: LLW is currently disposed in the Hanford Site's active Low-Level Burial Grounds (LLBG), which are located in the 200 West and 200 East Areas. Current waste forms typically consist of paper, plastic, rubber, wood, glass, dirt, metal, and other types of approved waste. The 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 wood, concrete, metal, fiber-reinforced plastic boxes and other approved containers. Boxes are made in various sizes to accommodate the waste items, with some waste wrapped in plastic. Large-package LLW shipments are received periodically at the LLBG. These packages include items such as intact rail cars, tanker trucks, cover blocks, cranes, and failed equipment.

Typical operations in the LLBG include receipt of LLW from certified generators. The vehicle carrying the LLW, such as a standard semi-truck trailer or flatbed truck, is positioned within or beside the receiving trench and 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 occurs before final closure. Operating burial grounds that comprise the LLBG are as follows:

200 West Area:

- 218-W-3A
- 218-W-3AE
- 218-W-4B
- 218-W-4C
- 218-W-5
- 218-W-6

200 East Area:

- 218-E-10
- 218-E-12B

The existing trench designated to receive Category 1 LLW only trench is being rapidly filled. Low to medium activity LLW is considered Category 1 LLW, while Category 3 LLW has higher radioactive concentrations. When Category 1 LLW is commingled with Category 3 waste, interim waste form stabilization to support the soil cover overburden would be in accordance with Category 3 conditions. Current waste form stabilization costs for Category 3 LLW is estimated to be more than for Category 1 LLW stabilization. Full stabilization and final cover design are expected to be substantially less expensive for Category 1 waste.

Current waste projections identify a need for burial ground space to cost-effectively dispose of large-package LLW. The last trench used for disposal of large-package LLW is full. Existing narrow Category 1 trenches

are not suitable for receipt and disposal of large-package LLW. The current disposal practice for large packages is to dispose of them in a current Category 3 trench, which is the only remaining wide bottom trench in the LLBG. 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.

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* examining the DOE complex-wide management of current and anticipated volumes of various waste, including LLW. DOE is considering preparation of a "Hanford Site Solid Waste Environmental Impact Statement" (HSW-EIS) that would examine the Hanford Site management of various waste volumes subject to the alternatives evaluated in the programmatic EIS, including, but not limited to the disposal of LLW and closure of LLBG. Final closure of trenches in the LLBG would be addressed in the planned HSW-EIS.

PROPOSED ACTION: The DOE proposes to widen and operate the existing and unused disposal Trench 33 within the 218-W-5 Burial Ground in the 200 West Area for disposal of LLW. Existing capacity would be expanded from approximately 12,000 cubic meters (428,000 cubic feet) to 20,300 cubic meters (717,000 cubic feet). Bulldozers using standard construction practices would move soil to the south side of the length of the current trench configuration to be used as backfill during disposal operations. Backfilling operations would cover the appropriately packaged LLW with a minimum of 2.4 meters (8 feet) of soil. The proposed action would begin during the summer of 1997.

Widening Trench 33 would allow for disposal of both boxed and large-packaged Category 1 LLW. The waste packages would be unloaded into the disposal trench by forklift, crane, or other approved method. Typical LLW operations on the Hanford Site would not change as a result of the proposed action. Cost of widening Trench 33 would be approximately $50,000. This 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. Specific closure issues for Trench 33 would be evaluated in the planned HSW-EIS.

ALTERNATIVES CONSIDERED: No-Action: The No-Action Alternative, DOE would continue to dispose of LLW in existing trench space. However, use of existing trenches likely would not provide the capability to prevent or minimize future commingling of Category 1 with Category 3 LLW. 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 36 in the 218-E-12B Burial Ground: This alternative would widen existing, unused trench 36 in the 218-E-12B Burial Ground in the 200 East Area for disposal of LLW. However, Waste Management Operations has only surveillance activities in the 200 East Area LLBG. Operational costs would be higher for disposal of LLW in the 200 East Area because equipment would have to be procured, or diverted from use in the 200 West Area.

Alternative to Widen Trench 37 in the 218-W-4C Burial Ground: This alternative would widen and deepen the existing and unused Trench 37 in the 218-W-4C Burial Ground. However, since Trench 37 is not as long and is more shallow than Trench 33, this alternative would not provide equivalent capacity for LLW disposal. If Trench 37 was to be deepened and widened to provide equivalent capacity, costs would be greater than to merely widen Trench 33.

Alternative to Dig a New Trench: An alternative to dig a new trench to the size of the proposed action was considered. However, the new trench would cost approximately $127,000, which is $77,000 more than the proposed action.

Alternative for OffSite Disposal: The alternative of offsite disposal was considered. If this alternative was taken, the excavation may be similar to the proposed action. However, additional transportation would be required, which would increase safety hazards and the cost for disposal of LLW.

ENVIRONMENTAL IMPACTS: All soil disturbances would occur on previously disturbed soil within the 218-W-5 Burial Ground. Because Trench 33 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 33 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 vehicle accident with fire involving 66 drums. It is postulated that a bulldozer catches on fire while covering the drums with soil and rolls onto uncovered waste containers. The potential for such a rollover is very low as a result of the bulldozer's low center of gravity. As many as 66 drums could be breached by the rolling bulldozer, based on the cross-sectional area of the bulldozer. Assuming that all of the contents of the breached drums are consumed by fire and that the drums contained the highest allowable quantities of radionuclides, the consequences of this accident would still be well below radiological risk comparison guidelines. The estimated frequency of occurrence for this accident is 5.3×10^{-4} per year. The respective maximum onsite and offsite dose consequences for this accident scenario are 0.94 rem EDE and 5.96×10^{-4} rem EDE.

Socioeconomic Impacts: Only small numbers of workers would be involved at any one time. 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. With respect to Executive Order 12898 regarding environmental justice, distributions of minority and low income population groups have been identified for 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 after considering the preapproval comments from the State of Washington, I conclude that the proposed action to widen Trench 33 in the 218-W-5 burial ground 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 28th day of July, 1997.

John D. Wagoner for
Manager
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