

FINDING OF NO SIGNIFICANT IMPACT

**NON-THERMAL TREATMENT OF HANFORD SITE LOW-LEVEL
MIXED WASTE**

HANFORD SITE, RICHLAND, WASHINGTON

U.S. DEPARTMENT OF ENERGY

SEPTEMBER 1998

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-1189, for the offsite commercial treatment of low-level mixed waste. Based on the evaluation in the EA, and considering comments from the State of Oregon, 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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Waste Programs Division
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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 to demonstrate the feasibility of commercial treatment of contact- handled low-level mixed waste (LLMW) to meet regulatory standards for eventual land disposal.

BACKGROUND: Radioactive and hazardous waste stored at the Hanford Site includes contact handled low-level mixed waste (LLMW) which contains both radioactive and hazardous constituents. This LLMW is either generated onsite or received from other Department of Defense or DOE sites. Some of this LLMW contains dangerous waste constituents such as toxic metals that require treatment to meet regulatory standards for land disposal. Stabilization and encapsulation have been identified as relevant treatment technologies for these wastes.

Allied Technology Group, Inc. (ATG), a private company, was selected competitively from three proposals responding to a DOE Request for Proposals for commercial treatment of LLMW. Environmental consequences of siting, construction and operation of the proposed ATG treatment facility on private land in the City of Richland were considered in the City's State Environmental Policy Act (SEPA) Final Environmental Impact Statement (EIS) (EA6-97)-Allied Technology Group, Inc.-Treatment of Low Level Mixed Waste.

PROPOSED ACTION: The DOE proposes to retrieve, package and transport up to 2,600 cubic meters, (3,400 cubic yards) of contact-handled LLMW from the Hanford Site 200 West Area to the ATG gasification and vitrification facility in Richland, Washington, for treatment, and to return the treated waste to the Hanford Site for eventual land disposal. These activities would occur over a three-year period.

Untreated waste is and will be stored in the Hanford Site's 200 West Area, approximately 33km (20 mi) northwest of the ATG facility. Waste containers would be removed from storage in the 200 West Area, repackaged as necessary, and transported by truck to the ATG facility in conformance with all applicable requirements. Following acceptance and classification by ATG, wastes may be stored awaiting their turn in the treatment facility. Wastes may be pretreated before treatment.

Treatment in the ATG Mixed Waste Facility would be principally stabilization and macroencapsulation. The facility would meet regulatory treatment standard for debris. This draft EA was sent to tribes, states, etc, for a 30 day comment period. Comments were received from the State of Oregon. The resulting treated waste would be macro encapsulated with grout product consisting of inert wastes. Secondary wastes, including those arising from the packaging or pretreatment, would also be packaged, treated, and certified before returning to the 200 West Area.

All treated wastes, including secondary waste, would be packaged and transported from the ATG facility back to Hanford Site's 200 West Area. The treated waste would be either temporarily stored at the Central Waste Complex or placed in the 200 Area mixed waste disposal trenches. No waste disposal would take place at ATG.

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ALTERNATIVES CONSIDERED:

No-Action: Under the No-Action Alternative, LLMW would continue to accumulate at the 200 West Area pending future decisions. Life-Cycle costs for the long-term storage of the untreated waste would be greater than for near-term waste treatment and disposal.

Other Alternatives: The following alternatives were considered in the process of selecting the vendors for treating the LLMW and in preparation of this EA. These alternatives were not analyzed in detail.

- **Treatment at the Advanced Mixed Waste Treatment Project, Idaho:** Under this alternative DOE would send the waste for treatment to the proposed Advanced Waste Treatment Project at the Idaho National Environmental Engineering Laboratory (INEEL), Idaho Falls, Idaho, approximately 800 km (500mi) from the 200 West Area. The treated waste would be returned to the Hanford Site for eventual land disposal.
- **Treatment at EnviroCare, Utah:** Under this alternative DOE would send the waste for treatment at EnviroCare's Mixed Waste Treatment Facility in Clive, Utah, approximately 1040 km (650 mi) from the 200 West Area. The treated waste would be returned to Hanford for eventual land disposal.
- **Treatment at Nuclear Source and Services Inc. (NSSI), Texas:** Under this alternative DOE would send the waste for treatment to NSSI's facility in Houston, Texas, approximately 3,700 km (2300 mi) from the 200 West Area. The treated waste would be returned to the Hanford Site for eventual land disposal.

ENVIRONMENTAL IMPACTS: No soil or habitat disturbances would occur in the implementation of this proposed action. Small gaseous, particulate, or thermal discharges from trucks, fork lifts, and other equipment would be generated during routine operations. 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.

Radiation Impacts: No impacts from radiation are expected from normal safe operations. The radiological dose to workers from incident free transportation from the 200 West Area to ATG is calculated to be 0.025 person-rem/year, with an estimated 3 year cumulative radiological dose of 0.075 person-rem and a Latent Cancer Fatality (LCF) risk of 3.0×10^{-5} . The dose to the public from this transportation is calculated to be 0.029 person-rem, with 1.2×10^{-5} LCF. Transportation of the treated waste back to 200 West Area is calculated to result in 0.1 person-rem and 4.0×10^{-5} LCF to workers, with 0.039 person-rem and 1.6×10^{-5} to the general public. The three year cumulative radiological dose to the offsite population within 80 km (50 mi) of the ATG facility from normal operations is calculated to be 0.042 person-rem with 2.1×10^{-5} LCF. The collective dose to the work force from three years of operation would be 24.0 person-rem with an LCF risk of 0.0096.

Hazardous Material Impacts: Calculated health impacts from the hazardous constituents of the Hanford LLMW corresponded to excess cumulative cancer risks of less than 1.0×10^{-6} for both residential and workers scenarios. Therefore, the proposed action would be expected to result in no adverse health effects from routine air emissions.

Storage: The worst case credible accident was identified as a fire that involved the contents of the two waste containers. The annual frequency of such an accident that would release radionuclides is 1×10^{-4} . Doses and risks from this accident to the worker population at the ATG facility are calculated to be 0.024 person-rem with the number of excess LCFs predicted as 1.1×10^{-9} . Dose and risk to the general population within 80 km (50 mi.) of the ATG facility are calculated to be 0.018 person-rem with the number of excess LCF's predicted as 9.9×10^{-10} .

Socioeconomic Impacts: No additional employees would be required for the 200 West Area operations. Approximately 50 employees would be added by ATG to operate the treatment facility for all customers' wastes. Therefore, no significant socioeconomic impacts are expected from the proposed action.

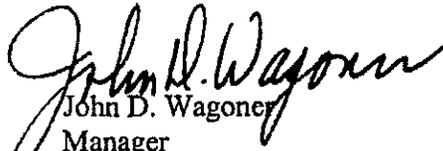
Environmental Justice: Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, requires that federal agencies identify and address, as appropriate, disproportionately high and adverse human health or environmental effects of their programs and activities on minority and low-income populations. With respect to Executive Order 12898 regarding environmental justice, distributions of minority and low-income populations groups have been identified for the Hanford Site. The analysis of the impacts in this EA indicates that the health 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: No significant cumulative environmental impacts are expected from implementation of the proposed action when taken in sum with other ATG, Siemens, Lamb-Weston, DOE and WPPSS actions.

Impacts from other Alternatives: Though not analyzed in detail, transport of the Hanford LLMW to the Idaho, Texas, and Utah sites would be expected to result in a greater risk from transportation due to the longer distances and travel times involved. Impacts from treatment were considered to be similar to those at ATG.

DETERMINATION: Based on the analysis contained in the EA, and after considering the preapproval comments received, I conclude that the proposed action to treat Hanford Site LLMW at the ATG facility 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 29th day of September 1998.


John D. Wagoner
Manager
Richland Operations Office

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