

# START

0003130

Attachment 1

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## NOTICE OF INTENT

### HANFORD WASTE VITRIFICATION PLANT

The State of Washington Dangerous Waste Regulations, Chapter 173-303-281, Washington Administrative Code, require that hazardous waste owners/operators submit a Notice of Intent 150 days prior to the submittal of the permit application for new or expanded hazardous waste facilities. The information provided below is being filed with the State of Washington Department of Ecology to serve as notice of the intent by Department of Energy, Richland Operations Office, the facility owner and operator, and by Westinghouse Hanford Company, the facility co-operator, to construct and operate a hazardous waste treatment facility on the Hanford Site, Richland, Washington.

#### Facility Owner and Operator

Name: Department of Energy, Richland Operations Office (DOE-RL)

Manager, Richland Operations Office: Mr. Michael J. Lawrence

Richland Operations Office Contact: Ms. Elizabeth A. Bracken

Address: Department of Energy, Richland Operations Office  
P.O. Box 550  
Richland, Washington 99352

Telephone: 509-376-7277

#### Facility Co-Operator

Name: Westinghouse Hanford Company

President: Mr. John E. Nolan

Westinghouse Contact: Mr. Ronald E. Lerch

Address: Westinghouse Hanford Company  
P.O. Box 1970  
Richland, Washington 99352

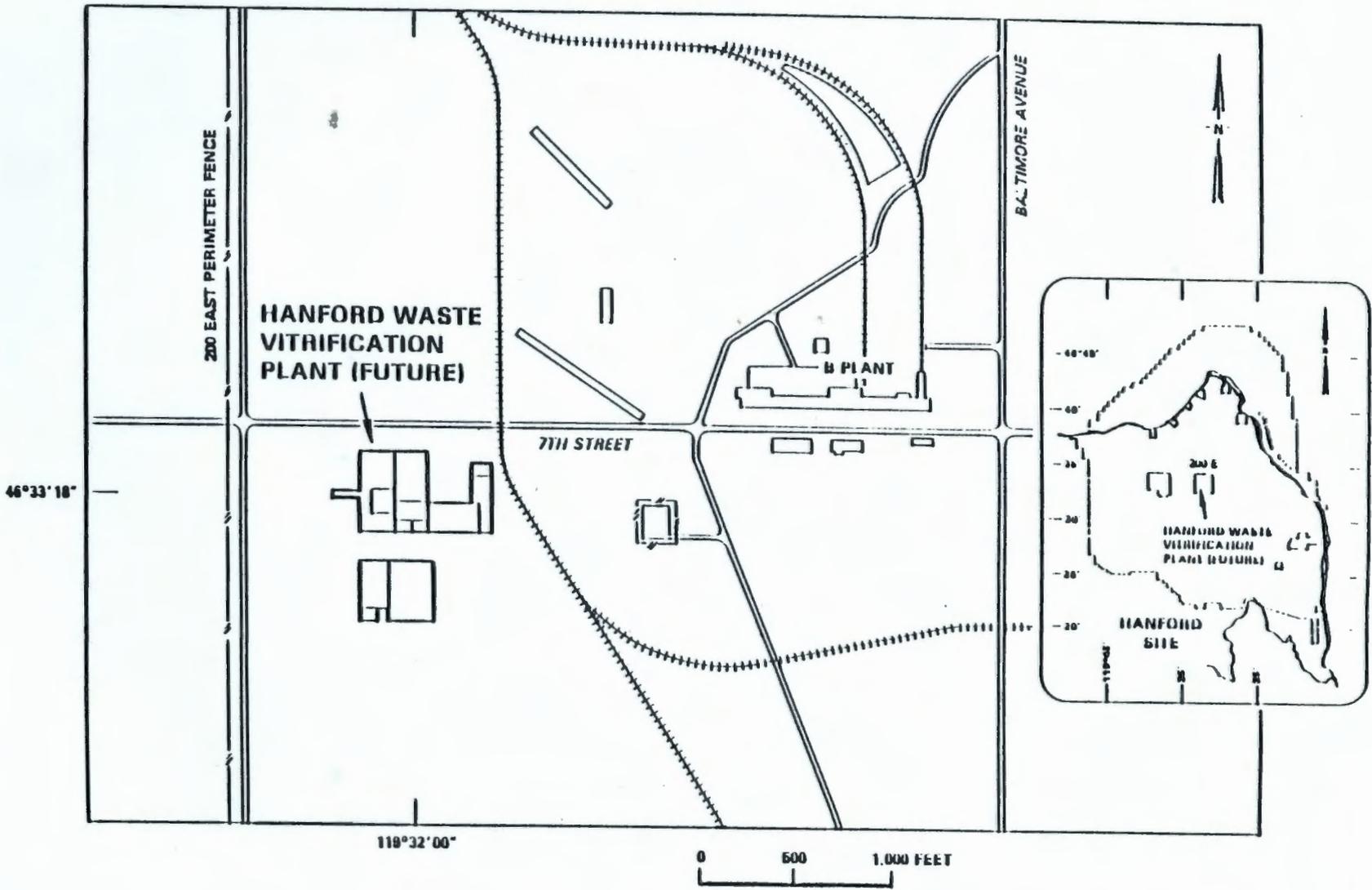
Telephone: 509-376-5556

#### Proposed Location of Hanford Waste Vitrification Plant

The Hanford Waste Vitrification Plant will be located within the 200 East Area of the Hanford Site, in Benton County, Washington. The location of the HWVP is illustrated on Figures 1 and 2 (attached).

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Figure 1. Hanford Waste Vitrification Plant future site plan.



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IS LOCATED AT 003129  
"HANFORD SITE MAP"

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Description of Types and Amounts of Waste to be Treated at HWVP

The HWVP will treat radioactive mixed waste consisting of existing and future high-level Hanford defense waste stored in double-shell tanks. This waste is expected to be designated as extremely hazardous waste (EHW) due to toxicity and designated as dangerous waste (DW) due to corrosivity and extraction procedure (EP) toxicity. The HWVP is designed to treat 3600 gallons of radioactive mixed waste per day. The HWVP will also have the capability to treat and/or store, prior to disposal, any residual wastes resulting from HWVP operations. Maximum storage capacity will be about 198,000 gallons of nonradioactive dangerous waste.

Description of Major Equipment and Waste Management Activities Subject to Dangerous Waste Permitting Requirements

The HWVP will consist of treatment tanks, piping, and related equipment and buildings to treat radioactive mixed waste. Pretreated radioactive mixed waste feed slurry will be received at HWVP from the underground double-shell tank farms, where it will be stored following pretreatment. The waste will then be treated in a series of tanks within HWVP. Treatment will include concentration by evaporation, adjustment with chemicals and glass-forming materials, and immobilization in borosilicate glass.

Residual radioactive mixed waste remaining after primary treatment by the HWVP will be collected and treated in a series of tanks. Treatment will include neutralization, filtration, absorption-molecular sieve, and evaporation.

Residual nonradioactive waste remaining from plant operation will be collected and treated in a series of tanks and stored at the HWVP pending disposal in appropriate facilities. Treatment will include neutralization, concentration by evaporation, and decomposition of hazardous constituents during storage.

Compliance with State Environmental Policy Act

The completion of the Final Hanford Defense Waste - Environmental Impact Statement (HDW-EIS) satisfied both the National Environmental Policy Act (NEPA) and the State Environmental Policy Act (SEPA) requirements for HWVP. A background of the HDW-EIS, including specific citations relating to HWVP, is provided in Attachment 2.

Compliance with Siting Standards

Seismic Considerations: The HWVP will be located in Benton County, Washington. It will not be located within one of the political jurisdictions identified in Appendix VI of 40 CFR 264 (EPA 1987) and in WAC 173-303-429(3)(c) (WAC 1987).

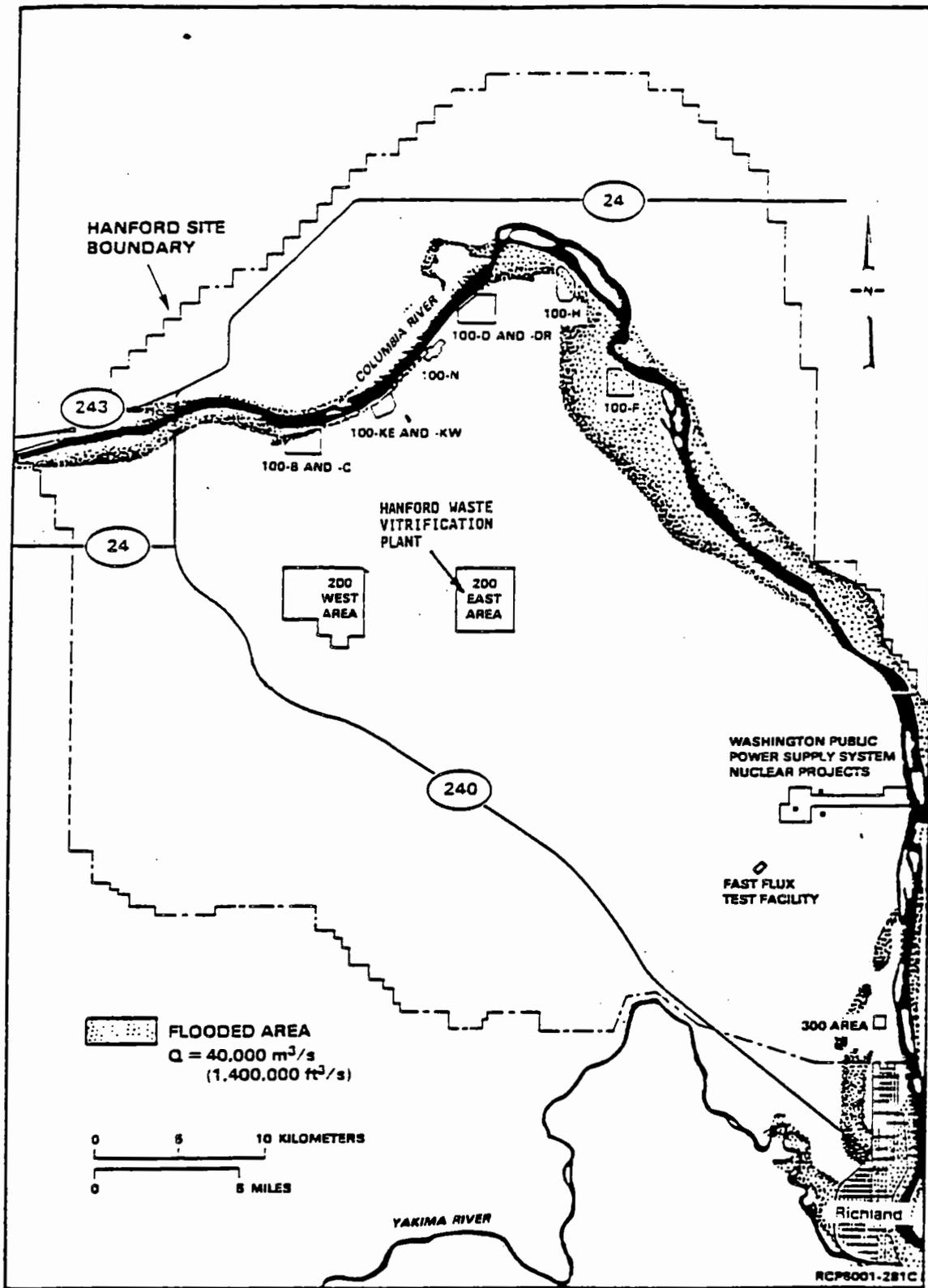


Figure 3. Flooded area for the probable maximum flood (after ERDA, Evaluation of Impact of Potential Flooding Criteria on the Hanford Project, RLO-76-4, U.S. Energy Research and Development Administration, Richland, WA, 1976).

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Floodplain Standard: The HWVP will not be located in the 100-year flood plain. The U.S. Army Corps of Engineers has calculated the probable maximum flood (ERDA, 1976) for the Columbia River. As shown in Figure 3, flood waters from such an event would not reach the HWVP.

Shoreline Standard: The HWVP is not located within "shorelines of the state" or "wetlands" as defined by the Shoreline Management Act (1971).

Sole Source Aquifer Criteria: The HWVP is not located over one of the sole source aquifers of Washington as defined in Section 1424(e) of the Safe Drinking Water Act (1974, PL 93-523).

Preliminary Groundwater Data: The HWVP will not be operated as a disposal facility; therefore, groundwater monitoring is not required. The depth to groundwater in the unconfined (uppermost) aquifer beneath the HWVP site is approximately 300 feet. This aquifer consists of the fluvial and lacustrine sediments of the Hanford/Ringold Formations that lie atop the Columbia River Basalt Group.

#### Ten-Year Compliance History

DOE-RL has received four compliance orders or notices of violation related to hazardous waste management from the State of Washington Department of Ecology or EPA Region 10. These orders are summarized below. Copies of each of the orders and responses are provided in Attachment 3.

May 1984 Department of Ecology (Ecology) Order DE 84-267: Required DOE-RL to allow the state to access the Hanford Site for the purpose of conducting formal compliance assessments of nonradioactive hazardous waste facilities. DOE-RL was also ordered to take immediate action to ensure full compliance with the state dangerous waste regulations.

Response: Actions were taken in accordance with DOE's understanding of the Order. No written response was made.

December 1984 Ecology Order DE 84-720: Required DOE-RL to submit the design package for a new nonradioactive hazardous waste storage facility, submit a compliance plan for disposal of laboratory wastes, amend the Part A to include the 183-H Solar Evaporation Basins and chemical sewers, submit a site-wide groundwater monitoring plan for compliance with interim status requirements, and demonstrate compliance with waste analysis, personnel training, inspection, contingency plan, and closure plan requirements of WAC 173-303.

Response: DOE provided documents responsive to this Order.

February 1986 Ecology Order DE 86-133 combined with EPA Order 1085-10-07-3008: Orders required DOE-RL to take action to comply with 90-day storage requirements at waste accumulation areas and to install a groundwater monitoring system at RCRA land disposal units covered by the order. The order also required DOE-RL to modify or prepare interim status closure plans for the nonradioactive hazardous waste treatment, storage, and disposal facilities. Ecology Order DE 86-133 was superceded and resolved by a Consent Agreement and Compliance Order signed by Ecology and DOE executed October 1, 1986.

Response: DOE has taken all actions set forth in the agreement. The EPA Order was stayed as a result of the agreement between Ecology and DOE.

October 1987 Ecology Order DE 87-295: Required DOE-RL to immediately cease discharges of ammonium hydroxide-bearing wastes to the 216-A-36B Crib and to initiate actions to comply with state dangerous waste regulations (i.e., submit Part A and closure plan and install groundwater monitoring wells).

Response: DOE had already terminated discharges prior to receipt of the compliance order. Other actions were taken by DOE in accordance with the Order.

#### Justification of Need for Hanford Waste Vitrification Plant

The HWVP will treat liquid radioactive mixed waste by converting it to a stable borosilicate glass suitable for final disposal. The wastes to be treated in the HWVP contain high levels of radioactivity, including isotopes of cesium, strontium, and assorted fission products. There are no other treatment facilities on the Hanford Site which have the capacity to immobilize the large quantities of waste to be treated by HWVP (3600 gallons of waste per day). The HWVP treatment process is integral to the disposal of high-level wastes stored in double-shell tanks at Hanford.

#### Impact on Overall Capacity at Hanford and in Washington State

The current capacity for immobilizing high-level radioactive waste in a form suitable for long-term disposal is limited to extremely small quantities of a research and development scale. Approximately 1.9 million gallons of high-level waste currently stored at Hanford will require treatment prior to final disposal. The HWVP provides the necessary capacity to handle this waste load.

Nonradioactive hazardous wastes resulting from HWVP operations will be treated or reused within the plant; however, approximately 3000 gallons per year of sludge containing caustic and sand will result from the use of a solar evaporation tank. This sludge will be cleaned out of the solar evaporation tank approximately once every ten years. The sludge will be shipped to a permitted commercial waste management facility. Since the sludge will only be cleaned out once every ten years, the impact to overall state capacity is expected to be minimal.

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