

Christine O. Gregoire

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Director



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STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

Mail Stop PV-11 • Olympia, Washington 98504-8711 • (206) 459-6000

May 18, 1988



Mr. Kirk Owens
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Re: Request for Information by Washington Department of Ecology

Dear Mr. Owens:

This letter follows our phone conversation of April 15 with a request for additional information on the single-shell tank waste characterization program.

Five enclosures are included with this letter. The first is an outline of single-shell tank characterization issues. This is intended to focus attention on areas where Ecology, EPA and USDOE/WHC need to begin a coordination of efforts to ensure that the SST characterization program meets the requirements of all parties.

The second enclosure is a list of specific questions relating to the SST characterization program. The next is a list of documents. If you know of more current or more easily cleared documents (dealing with the same subjects as the ones I have requested) please send those instead.

The fourth and fifth enclosures are copies of the state chemical and biological testing methods. Waste analysis in the SST characterization program should conform to these state methods whenever possible.

Please call me if you have any questions. Thank you.

Sincerely,

Michael T. Gordon

Michael T. Gordon
Hanford Section
Hazardous Waste
Cleanup Program

XC EDMC



RECEIVED
R.E. LERCH

MAY 24 1988

XEM. July 06/13/88

ACTION _____
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MG:kc
Enclosures

cc: R. E. Lerch (WHC)
R. Stanley

*CCH
NEM*

START

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Enclosure 1

SINGLE-SHELL TANK WASTE CHARACTERIZATION:

1. Parameters of Interest

- a. USDOE/WHC will designate all tank waste DW or EHW according to WAC-173-303-070.
- b. Ecology may require additional waste analysis for chemicals on any of the following lists:
 - o Appendix IX of 40 CFR 264
 - o National priority pollutants
 - o CERCLA reportable quantities of 40 CFR 302.4
- c. USDOE/WHC may use process knowledge, TRAC, and the results of previous testing to identify the chemicals likely to be found in tank waste. The Westinghouse lab will send a list of these chemicals to Ecology.

Issues:

Ecology, EPA, USDOE, and WHC should agree on a universe of constituents of interest before testing resumes in October 1988.

Ecology and EPA should determine the level of characterization needed for deciding whether to allow in-place disposal of tank waste. This determination could reduce the need for full characterization of tank waste slated for retrieval, and should consider an assessment of risks associated with the retrieval and disposal options. Although the final decision belongs to the two regulatory agencies, the burden of proof is on USDOE/WHC to demonstrate that in-place disposal of tank wastes is both a safe and necessary option.

2. Procedures for Waste Analysis

- a. USDOE/WHC will follow testing and sampling procedures required by WAC-173-303-110 whenever possible.
- b. As a result of the radiological hazards to sampling and testing personnel, some of these procedures will need to be modified. Among the testing requirements in question are:
 - o Temperature control of samples
 - o Minimum sample volume
 - o Maximum holding time
 - o Organic analysis
 - o Biological testing (bioassay)
- c. The Westinghouse lab will prepare a formal assessment of its ability to perform full RCRA testing. This will consider the need for procedure modifications and for additional lab capabilities. This report was due in March 1988.

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Issues:

Ecology, EPA, USDOE, and WHC should agree on procedure modifications before sampling and testing resume in October 1988.

USDOE/WHC may be required to perform bioassays on SST waste. If the waste is not designated extremely hazardous waste (EHW) by other designation methods, the state may ask for fish or rat acute toxicity data. Separation of the waste into a non-radioactive fraction for the purpose of these tests may be impractical.

3. Status of Sampling and Testing Programs

- a. Nine tanks were sampled with good recovery in 1986. These cores were analyzed for concentrations of six key radionuclides. Results from analysis of the non-radioactive chemicals are not yet available.
- b. No characterization work in 1987.
- c. Assessment of TRAC as a predictor of radionuclide and hazardous chemicals show the model to be a poor substitute for direct waste analysis. All tanks will be sampled and tested.
- d. Technology development of sampling equipment resumed in March 1988.
- e. Waste from 10-12 tanks will be sampled and analyzed in FY 1989. Budget: \$2 million committed.
- f. Characterizing the remaining tanks at the present throughput rate (10-12 tanks/yr and 2 cores/tank) will be complete by FY 2002. Budget: \$50 million planned.
- g. Liquids pumped from single-shell tanks are not sampled and analyzed for hazardous and radioactive constituents. Nor are they reported on the annual generator or TSD reports.

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Enclosure 2

REQUEST FOR INFORMATION:

- o Explain how SST waste was designated EHW by toxicity criteria in the Part A (RCRA) dangerous waste permit application. The description reads: "The waste codes listed under the description of dangerous waste are based on a computer model and past process knowledge ...". Please show how the waste codes were determined.
- o Send a list of chemicals known or expected to be stored in single-shell tanks. This should include the original compounds as well as potential breakdown products for both organic and inorganic chemicals.
- o Send a summary of hazardous waste inventories determined by waste analysis performed to date. This should include data from the TY farm and from the nine tanks sampled for comparison to TRAC in 1986. This information was said to be forthcoming in the Preliminary Assessment of the TRAC Model (Adams, et. al. September 1986).
- o Send report on laboratory capabilities for SST waste analysis and a summary of proposed modifications to standard sampling and testing procedures. Include a description of the capability (or lack thereof) to perform bioassay testing with SST waste. I need this information before I can get commitments from EPA and Ecology lab personnel to discuss modifications to the procedures required by state and federal regulations.
- o Is there any data on Ruthenium-106 concentrations in the single and double shell tanks? This isotope has been used as a tracer for detecting leaks from the single-shell tanks.
- o Are there any changes in the Single-Shell Tank Waste Characterization Plan as a result of decisions on N-reactor? Please send updates on schedules and activities.
- o Send a summary of progress made on SST waste removal technology development.
- o Why isn't salt-well liquor routinely analyzed for hazardous and radioactive constituents? This pumpable liquid seems more representative of past and future tank leaks than the core samples taken in the SST characterization program. Perhaps the two sampling methods should be combined.
- o Is USDOE/WHC prepared to sample and analyze contaminated soil from around single-shell tanks classified as confirmed and potential leakers?
- o Summarize the assumptions behind the "control case" operating scenario in the DST waste volume projections. How does N Reactor status affect these projections.

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Enclosure 3

REQUEST FOR DOCUMENTS:

Tank Farm Surveillance Report, WHC-EG-0061-4,5,... (monthly?)

Waste Status Summary, WHC-SP-0038-7... (monthly?)

Tank Farm Waste Characterization TPP. SD-WM-TPP-033

TPP for Interim Stabilization of Single-Shell Tanks. SD-WM-TPP-031

Grout Disposal Program Waste Analysis. SD-WM-TI-271

(This information may be available in an already cleared form)

Analytic Considerations for Hazardous Waste Characterization of Hanford Site Tank Waste. 9/13/86 ITC

Bowers, D. E., et al. 1982. Jet Pumping Review. RHO-WM-EV-1

Brown, D. J. 1960. Geology Underlying 200 Area Tank Farms. HW-67729, General Electric Company

Egger, J. V. 1981. Description of Potential Failure Modes for Single-Shell Waste Tanks. RHO-CD-1485

Isaacson, R. E. 1981. Tables of Monitoring Frequencies for 200 East and West Area Single-Shell Waste Tank Dry Wells and Laterals. RHO-CD-1580

Isaacson, R. E. and K. A. Gasper. 1981. A Scientific Basis for Establishing Dry Well Monitoring Frequencies. RHO-ST-34

Jensen and Liebetrau. 1985. Ideal Tank Sampling Scheme

Price, W. H. and K. R. Fecht. 1976h. Geology of the 241-SX Tank Farm. ARH-LD-134

Quinn, D. J., et al. 1980. An Assessment of the Risk Associated with Continued Storage of High-Level Waste in Single-Shell Tanks at Hanford. RHO-LD-55

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