

# START

CHRISTINE O. GREGOIRE  
Director



0008808 9001619

STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

Mail Stop PV-11 • Olympia, Washington 98504-8711 • (206) 454-5000

October 25, 1989

Mr. Mike Lawrence, Manager  
U.S. Department of Energy  
Richland Operations Office  
P.O. Box 550  
Richland, Washington 99352



Dear Mr. Lawrence:

**RE: Single-Shell Tank Investigations**

This letter follows our receipt of Governor Gardner's October 23, 1989 memorandum directing us to undertake an independent investigation of potentially explosive conditions which may exist within Hanford's single-shell tanks.

In response to the Governor's request, we are acting now to form an investigative team and to begin assembling relevant documentation. Don Provost has been asked to serve as the Department of Ecology's team leader for this effort. Terry Strong will serve as team leader for the Department of Health.

Our goal is to complete our investigation in approximately three months. We have asked Don and Terry to consider universities and other independent sources as they assemble an investigative team. We have suggested the team leaders schedule an early meeting with a USDOE contact person to develop a schedule for document review. We would appreciate you identifying a contact person on your staff for this purpose.

In beginning this effort we are also enclosing:

- 1) the recommendations resulting from Ecology's initial investigations on October 17 and 18; and
- 2) an initial list of USDOE and Westinghouse documents we would like to review.

90117891425

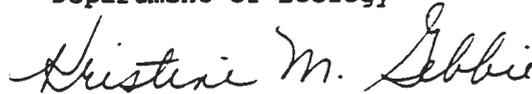
Mr. Mike Lawrence  
October 25, 1989  
Page 2

Your personal attention will allow us to complete this investigation in a timely manner. We believe we are all working toward the common goal of the safe operation of the tank farms and look forward to working closely with you.

Sincerely,



Christine O. Gregoire  
Director  
Department of Ecology



Kristine Gebbie  
Secretary  
Department of Health

COG/KG:lm  
Enclosure

cc: Booth Gardner  
Dan Silver

October 25, 1989

Basic Recommendations Following Ecology's Initial Review

1. Wherever possible, temperature probes in all tanks containing ferrocyanide should be repaired or replaced. Complete monitoring is especially important in light of the fact that tank chemical constituents, concentrations, and degree of stratification are not fully known. Safety should, of course, be considered in determining repair or replacement methods, and in reviewing alternative means of measuring tank temperatures.
2. Further larger-scale tests of conditions of reactivity of ferrocyanide bearing tank waste should be conducted.
3. The feasibility of other methods to detect tank chemical reactions should be assessed. This is especially true of the four "hot" tanks.
4. A detailed review of the effects of organic materials decomposition, and the potential for gas pocket generation, and associated pressure and temperature increases should be fully investigated.

\*Initial Listing of Requested Documents

1. Plan for SST ferrocyanide work - January 1989.
2. Letter report summarizing past research on potential exothermic reactions - April, 1989.
3. Thermal data from each single-shell tank.
4. Scope of work for LANL work.
5. QA audit reports on tank farm surveillance.
6. Safety Analysis Report and unusual occurrence reports concerning single-shell tanks.
7. D. Nguyen 1988 report concerning tank status and options.

\* The above titles have been discussed in meetings. We do not have exact titles. We would appreciate receiving these, as well as any other relevant reports which would assist us in conducting this investigation.

## DISTRIBUTION COVERSHEET

<b>Author</b> C. O. Gregoire, Ecology K. Gebbi, Dept. of Health	<b>Addressee</b> M. J. Lawrence, DOE-RL	<b>Correspondence No.</b> 9001619
<b>Subject</b> Single-Shell Tank Investigations		

Internal Distribution				
-----------------------	--	--	--	--

Approval	Date	Name	Location	w/att
		Correspondence Control	A3-01	X
		J. L. Waite	B2-35	X
		TPAI&C (DH)	B2-35	X
		EDMC	H4-22	X
		HE McGuire (Assignee)		
		RE Lerch		

