



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

700 W. Clearwater, Suite 102 • Kennewick, Washington 99336



July 16, 1992

CERTIFIED MAIL

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R. J. BLISS

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Mr. Jon P. Hamric
U. S. Department of Energy
Richland Operations Office
P.O. Box 550
Richland, WA 99352

ID Number: (WA7890008967)

Date and Time of Inspection:
(March 5, 1992, 9:50 - 12:00)

Mr. Ronald J. Bliss
Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Messrs. Hamric and Bliss:

RE: Dangerous Waste Compliance Inspection for PUREX Tank F-18

Thank you for the assistance of United States Department of Energy-Richland Office (USDOE-RL) and Westinghouse Hanford Company (WHC) personnel during the inspection of the PUREX facility on March 5, 1992. During this inspection my staff documented several areas of non-compliance by WHC with the Washington State Dangerous Waste Regulations (Chapter 173-303 WAC) at the 200 East PUREX facility. Responsibility for corrective actions for these items of none compliance is being directed to the operator (WHC) and verification of completion of actions is directed to the owner (USDOE-RL). Violations noted include the following:

Class I Violations

WAC 173-303-320 - General Inspection

Failure to adequately inspect monitoring equipment, maintain inspection logs, and remedy problems per subsection (2) and 40 CFR section 265.195(a)(3)



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- o **WAC 173-303-390 - Facility Reporting**
Failure to prepare and submit a report for the PUREX canyon Tank F-18 spill per subsection (3)

- o **WAC 173-303-400 - Interim Status Facility Standards**

Failure to provide adequate overflow prevention controls per 40 CFR section 265.194(b)(2)

Failure to provide adequate secondary containment per 40 CFR section 265.193(a), (b)(1), and (d)(2)(iv)

- o **WAC 173-303-960 - Denial of Access**

Failure to allow Ecology inspectors access to training records

Class II Violations

- o **WAC 173-303-145 - Spills and Discharges**

Failure to notify Ecology of a 260 gallon spill per subsection (2)(c)(ii)

Failure to notify Ecology of additional materials spilled on January 7, 1992 per subsection (2)(c)(ii)

My staff is available to assist USDOE-RL and/or WHC in completing these compliance items within the time specified. Failure to correct these items may result in the issuance of an administrative order and/or penalty as authorized under RCW 70.105.095 (Hazardous Waste Management).

1. Within thirty (30) days of receipt of this letter WHC shall identify all leak detection systems, overflow prevention controls and alarm systems related to the monitoring of Tank F-18. WHC shall also identify any discrepancies found with any of the above equipment including but not limited to, sump controls, high level alarms, alarm lights, level sensing devices, automatic feed cutoff or bypass to a standby tank and the Computer Automated Surveillance System (CASS) if applicable.

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2. Within forty-five (45) days of receipt of this letter WHC shall provide Ecology with the results of the investigation required by item 1 and a schedule for correcting any deficiencies found.
3. Within forty-five (45) days of receipt of this letter WHC shall provide Ecology with a schedule for an investigation, similar to that conducted for item 1, for all tank systems within the PUREX Canyon.
4. Within sixty (60) days of receipt of this letter WHC shall provide Ecology with a schedule for the correction of any discrepancies found during the investigation for item 3.
5. Immediately upon receipt of this letter WHC shall comply with the requirement to remedy problems revealed by WHC/USDOE-RL inspections as set forth in WAC 173-303 Section 320, paragraph (3). Provide Ecology, within 30 days, a list of the actions taken to correct any deficiencies found with the management systems used to identify and correct problems identified during inspections.
6. Within thirty (30) days of receipt of this letter WHC shall investigate to determine any discrepancies in the inspection (calibration system) for Tank F-18. Within the 30 days, WHC shall provide to Ecology the results of the investigation and a schedule for correcting any problems found.
7. Within thirty (30) days of receipt of this letter WHC shall provide Ecology with a schedule for investigating the calibration system for other tank systems within the PUREX canyon. Within 60 days of this Order, provide Ecology with the results of the investigation and a schedule of correcting any problems found.
8. Within twenty-one (21) days of receipt of this letter WHC shall provide Ecology with access to inspect, and copies of the previously requested training records for Nuclear Operators and Shift Supervisors as set forth in WAC 173-303 Section 960.
9. Within twenty-one (21) days of receipt of this letter WHC shall take the necessary action to assure WHC training records as set forth in WAC 173-303 Section 330 are immediately accessible to Ecology inspectors. Within the 21 days, WHC shall provide Ecology a copy of the documented action taken to resolve this violation.
10. Within twenty-one (21) days of receipt of this letter WHC shall take the necessary action to assure Ecology notification as set forth in WAC 173-303 Section 145 immediately transpires. Within the 21 days, WHC shall provide Ecology a copy of the documented action taken to resolve this violation.

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11. Within twenty-one (21) days of receipt of this letter WHC shall take the necessary action to assure reporting to Ecology as set forth in WAC 173-303 Section 390 and as specified in WAC 173-303-360 are achieved. Within the 21 days, WHC shall provide Ecology a copy of the documented action taken to resolve this violation.

If you have any questions or technical inquiries concerning this matter, please contact me at (509) 546-2990, or G. Thomas Tebb of my staff at (509) 546-4302. Please complete the enclosed certificate of compliance and submit to this Department by September 14, 1992.

Sincerely,



Dave Nylander
Office Manager
Nuclear and Mixed Waste Management Program/Kennewick
Washington State Department of Ecology

DN:gd
Enclosure

cc: Roger Stanley, Ecology
Paul Day, EPA
Dave Jansen, Ecology
Toby Michelena, Ecology
G. Thomas Tebb, Ecology
Ron Izatt, DOE
Bob Holt, DOE
Steve Wisness, DOE
Administrative Record

FACT SHEET

Owner U. S. Department of Energy
Richland Operations Office
P.O. Box 550
Richland, WA 99352

Operator Westinghouse Hanford Company
P.O. Box 1970
Richland, WA 99352

Facility/Location PUREX, Tank 18-F, 200 East Area

Contact Charles H. Merry, WHC/OPS/PRX
(509) 373-1547

Activity Overflow of Radioactive Mixed Waste from Tank F-18 into Sump
SPB

Background

Tank F-18 is at the PUREX facility, located inside a concrete containment area known as the canyon. The canyon area is sectioned into different cells. The canyon contains a concentrator which separates waste. As the waste flows through the system, it is divided and sent to different holding tanks according to its properties. The canyon area is maintained totally by mechanical devices as Westinghouse Hanford Company (WHC) has determined the radiation level to be too high to meet worker exposure limits. Tank F-18 is in F-Cell along with sump SPB. Tank F-18 has a capacity of 5,000 gallons and is used to collect radioactive mixed wastes from all sections of the plant (E-Cell, F-11 Concentrator bottoms, sumps, sinks, drains, overflows, laboratory waste, etc.) and treated with sodium hydroxide (NaOH) and sodium nitrate (NaNO₂) before going to double-shell underground storage tanks. On January 3, 1992 Tank F-18 was being used as an intermediate transfer tank for a Uranyl Nitrate Hexahydrate (UNH) solution being transferred between Tank U-3 and the tank farm. The UNH properties are yellow crystals, and it is soluble in water, alcohol, and ether. The UNH is a dangerous waste because of its corrosive hazard. During this transfer Tank F-18 was overfilled which caused the spill to sump SPB.

Finding #1 FAILURE TO NOTIFY

WAC 173-303-145 states in part, "Spills and discharges. (2) Notification. Any person who is responsible for a nonpermitted spill or discharge shall immediately notify the . . . authorities described for the following situations: . . . (c) Notify the . . . department of ecology in the following circumstances: . . . (ii) For spills or discharges occurring and contained in secondary containment meeting the requirements of this chapter, if the quantity of dangerous waste or hazardous substance meets or exceeds ten gallons. . . ."

On January 3, 1992 at approximately 2155 hours, Tank F-18 spilled into the SFB sump in F-Cell (secondary containment for Tank F-18). Operators noticed that the level in Tank F-18, as registered by the weight factor recorder (WFR-F18-1), had stopped increasing and the transfer was immediately terminated. Three minutes later, after the transfer was terminated, a sump alarm (WFR-F18-1) indicated that there were 4,560 gallons (87% of tank capacity) of liquid in the tank. The United States Department of Energy (USDOE-RL) and WHC did not report the spill to the Department of Ecology until February 26, 1992, 54 days after the spill occurred.

On January 6, 1992 between 1430 and 1500 hours, 100 gallons of caustic/nitrate was added to Tank F-18 to neutralize Tank F-18 solution. The additional 100 gallons of caustic/nitrate caused additional material to overflow from Tank F-18 into SFB sump. WHC did not report the additional spill to the Department of Ecology. The additional spill was confirmed after the Department of Ecology found evidence documenting that another spill had occurred.

The spill into F-Cell was considerably in excess of the ten gallon reporting limit. In addition, contrary to USDOE-RL Order 5000.3A and internal WHC procedure WHC-CM-1-3, Section MRP 5.14, Rev. 7, WHC reported the spill event as an Off-Normal Occurrence whereas it should have been reported as an Unusual Occurrence. The requirements for what constitutes an Unusual Occurrence state in part, "The types of occurrences that are to be categorized as unusual occurrences are those that: (a) Result in the release of radioactive or hazardous materials above limits established in, or violate safety, environment, or health requirements defined in, permits or regulations."

Finding #2 FAILURE TO REPORT

WAC 173-303-390 states in part, "Facility reporting. The owner or operator of a facility is responsible for preparing and submitting the reports described in this section. . . . (3) Additional reports. The owner or operator shall also report to the department releases of dangerous wastes . . . as specified in WAC 173-303-360 (2)(k). . ." This section states in part, "Within fifteen days after the incident, he must submit a written report on the incident to the department." This section goes on to describe specific report criteria.

The Department of Ecology received no report, as required by the above criteria, within the fifteen day time requirement. In addition, when the Occurrence Report Notification was received (54 days after the spill occurred), the reporting criteria outlined in WAC 173-303-360 (2)(k) had not been met.

Finding #3 INADEQUATE OVERFILL PREVENTION CONTROLS

WAC 173-303-400 states in part, "Interim status facility standards. (3) Standards. (a) Interim status standards shall be standards set forth by the Environmental Protection Agency in 40 CFR Part 265 Subparts F through R . . ."

40 CFR 265.194 (b) states in part, "The owner or operator must use appropriate controls and practices to prevent spills and overflows from tanks of secondary containment systems. These include at a minimum: . . . (2) Overfill prevention controls (e.g., level sensing devices, high level alarms, automatic feed cutoff, or bypass to a standby tank). . ."

Controls for the level sensing device and high level alarm for Tank F-18 appear to be inadequate. The problem is compounded by the fact that the high weight factor recorder was not designed or adjusted to prevent an overflow. WEC management chose to ignore the tank overflow features (high level alarm) by ordering Tank F-18 filled to capacity without procedural authorization to do so (U-Cell Process Transfers/and Procedural Change Authorization (PCA). Plant Operating Procedure, PO-240-200, Rev. C-23, which does not allow the transfer of waste from U-3/U-4 to F-18, was used for the transfer procedure.

Several factors of this incident allow us to conclude that adequate overflow prevention on Tank F-18 was not maintained:

1. Facility Operation management chose to override the alarm set point for Tank F-18. The deputy plant manager stated on March 5, 1992 that this decision was made to assure compliance with the 90-day storage requirement. Overriding the alarm set point in order to keep from violating a WAC requirement does not provide justification for inadequate overflow prevention measures.
2. The high weight factor recorder for Tank F-18 was not properly calibrated to prevent an overflow of the liquid waste. The Ten-Day Occurrence Report #RL-WEC-PUREX-1992-0016 Item 15 states in part, "At the time of the overflow, the Tank F18 level instrument (WFR-F18-1) indicated that there were 4,560 gallons (87% of tank capacity) of liquid in the tank." Actual tank capacity is 5,230 gallons.
3. Item 22 of the Ten-Day Occurrence Report states that the weight factor recorder "indicated a significant volume difference as the tank neared maximum capacity."

Finding #4 DENIAL OF ACCESS TO INSPECT TRAINING RECORDS

WAC 173-303-960 (2)(a) states that the department may "Authorize an agency inspector to enter at reasonable times establishments

regulated under this chapter for the purposes of inspection, monitoring, and sampling . . ."

WEC refused to allow the inspection team to review or copy pertinent training records, stating that the records are protected under the federal Privacy Act.

On March 18, 1992, Washington Department of Ecology requested the training records for:

Dickie Coates, Operator
Stuart W. Hildreth, Shift Manager
Ron W. Bailey, Facility Manager

To date, training documentation has not been provided.

Finding #5 INADEQUATE SECONDARY CONTAINMENT

WAC 173-303-400 states in part, "Interim status facility standards. (3) Standards. (a) Interim status standards shall be standards set forth by the Environmental Protection Agency in 40 CFR part 265 Subparts F through R . . . and, (vii) "Subpart J - tank systems" section 265.193(a) shall be modified so that the dates by which secondary containment (which meets the requirements of that section) must be provided are the same as the dates in WAC 173-303-640 (4)(a)."

WAC 173-303-640 (4)(a) states in part, "In order to prevent the release of dangerous waste or dangerous constituents to the environment, secondary containment that meets the requirements of this subsection must be provided . . . (iii) For those existing tank systems of known and documented age, within two years after January 12, 1989, or when the tank system has reached fifteen years of age, whichever comes later. . ."

40 CFR Part 265 Subpart: J, Section 265.193(a) refers to (b) which states in part, "Secondary containment systems must be: (1) Designed, installed, and operated to prevent any migration of wastes or accumulated liquid out of the system to the soil . . ." Section (d) states in part, "Secondary containment for tanks must include one or more of the following devices: . . . (2) A Vault." Section (e)(2) states, "Vault systems must be: . . . (iv) Provided with an impermeable interior coating or lining that is compatible with the stored waste and that will prevent migration of waste into the concrete . . ."

The F-Cell, including SFB sump, where the spill occurred, does not meet the requirements listed above and is not suitable secondary containment. In a May 31, 1991 letter to the Department of Ecology, USDOE recognized that the required impermeable lining does not exist as required.

Deadline dates to meet interim status requirements have not been

met. Upgrading the secondary containment to meet specifications by the required date of January 12, 1991 has not been accomplished.

Finding #6 INADEQUATE INSPECTION

WAC 173-303-320 states in part, "General inspection. (2) The owner or operator shall develop and follow a written schedule for inspecting all monitoring equipment . . . (a) He must keep the schedule at the facility; (b) The schedule must identify the types of problems which are to be looked for . . . (c) The schedule shall indicate the frequency of inspection . . . (d) The owner or operator shall keep an inspection log or summary . . . (3) The owner or operator shall remedy any problems. . ."

Contrary to Ecology's request, no written schedule for inspecting monitoring equipment, no inspection logs, and no remedial correction of identified problems were provided.

CORRESPONDENCE DISTRIBUTION COVERSHEET

Author	Addressee	Correspondence No.
Dave Nylander, Ecology	J. P. Hamric, RL R. J. Bliss, WHC	Incoming: 9205215B

Subject: DANGEROUS WASTE COMPLIANCE INSPECTION FOR PUREX TANK F-18

INTERNAL DISTRIBUTION

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		President's Office	B3-01	
		J. G. Adler	S6-19	X
		R. W. Bailey	S5-66	X
		R. J. Bliss (Level I/Assignee)	B3-04	X
		G. D. Carpenter	B2-16	X
		D. B. Cartmell	R3-56	X
		L. E. Clay	S6-19	X
		L. P. Diediker	T1-30	X
		C. K. DiSibio	B3-03	X
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