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DEPARTMENT OF
ENERGY

February 12, 1992

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David Jensen
Hanford Project Manager
Washington Dept. of Ecology
Nuclear and Mixed Waste
Olympia, WA 98504



Dear Mr. Jensen:

Oregon appreciates the opportunity to review the Draft Treatment, Storage and Disposal Permit for the Hanford Facility. The February 6 Permit briefing in Salem by Toby Michelina, Joe Stohr, Mary Getchell and Dave Nylander was very helpful. Your Department's continued cooperation with Oregon on Hanford issues is valued.

We have a good working relationship with Washington Ecology. That relationship is productive for both states. Oregon is eager to continue work with Washington, USDOE and Native American tribes to assure Hanford cleanup.

We commend Washington Ecology on the innovative approach to Hanford cleanup via this Permit. Cleanup of hazardous wastes at Hanford is a formidable problem. The Federal hazardous waste regulations did not foresee such a large, diverse and complex cleanup. It is critical that Ecology, US Department of Energy and US Environmental Protection Agency be flexible and creative with the Permit process. That is the only way the complex issues at Hanford can be resolved.

Our technical comments, primarily on vadose zone monitoring and leak detection, are attached. The comments also include editorial remarks, and a note about public access to this document. Several other issues concern us.

The Permit is difficult to read. Efforts should be made to make the document more "reader friendly." Summaries of attachments would support this effort. The document also needs clarification in several areas. Of grave concern to Oregon are:

- the Hanford Waste Vitrification Project
- (HWVP) construction schedule, and
- adequate funding for Tri-Party Agreement milestones.

BARBARA ROBERTS
Governor



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The Tri-Party Agreement calls for HWVP construction start by April 1992. A Subpart X must be issued before construction begins. Washington Ecology does not now have the authority to issue the Subpart X Permit. USEPA will not issue the Permit because they intend to delegate the authority to Washington. USEPA must give priority to the Subpart X authority transfer. They must resolve the permit issue to support the HWVP schedule.

Paragraph 139 of the Hanford Federal Facility Agreement and Consent Order requires DOE-RL, with the assistance of Ecology and EPA, to determine funding levels needed to support each fiscal year's work. USDOE Headquarters has not given Washington or Oregon timely Activity Data Sheets which show the actual level of spending for critical cleanup activities. USDOE must provide this information to allow meaningful states' input into the formulation of USDOE's budget.

Sincerely,



David A. Stewart-Smith, Administrator
Nuclear Safety & Energy Facilities Division

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COMMENT: 8.7

The General Inspection Plan specifies that area inspections shall take place every six months or yearly, according to the schedule in II.O.2.a. of the Permit. The Permit also states that Ecology and EPA shall be notified in advance. USDOE and its contractors should expect that the regulators will continue to make random inspections. Ecology needs free access to areas on the Site for compliance oversight.

Sub

COMMENT: 8.8

Acronyms are used often after their initial introduction in the text. It would be helpful to place them in the definitions section for quick reference.

Refer to the definitions section

COMMENT: 8.9

Include a list of facilities covered by the Permit. Indicate their status, i.e., interim, closure, etc.

COMMENT: 8.10

Copies of the Attachments are currently available by request. Brief summaries of the Attachments, included in the main document, would help people select the Attachments they want. Individuals could also choose to receive only the summaries.

Refer to the main document

COMMENT: 8.11

Page 3, I.A.2: "...These units/areas are identified in attachment xx of the Permit." From the list of Attachments, it appears that 3 and 4 should replace "xx".

dit.

COMMENT: 8.12

Documents sent to Portland State University library for public comment were hard to find. Documents need to be clearly marked to alert library staff. You should direct the librarians to display documents in clear view. Title strips on the spine of the binders would also help people locate documents on the shelves.

P.R. May

...Only recently has the tank farm surveillance group recognized that "the neutron probe is not effective in determining the moisture content of the vadose zone..." and "there is overwhelming evidence that the neutron probe design may not be correct for boreholes that have been constructed in the Tank Farm area" (TT 03769). Apparently, the neutron probe is still being used in external drywells as in situ moisture analysis, but for "investigative purposes" only. Borehole effects totally mask any in-situ measurements from the vadose zone. In fact, WHC Geosciences officially recommended the tool be discontinued....(I-GW-43).

...The prototype system is reported to be scheduled for SST use to provide baseline information during FY 1991; however, funding has not yet been allocated. Further efforts to improve the vadose zone logging program have been delayed by resource limitations...

...It was found that "for WHC to meet Federal and State environmental regulations and DOE orders, a viable vadose zone surveillance program must be implemented" (TT 03769)...

These issues raise concerns about ultimate leaked waste disposal:

- the outdated vadose monitoring system in the SST farms
- the lack of funding for a workable geophysical logging system
- the failure of USDOE to aggressively pursue a comprehensive site-wide vadose monitoring plan.

A comprehensive vadose monitoring system is needed for these reasons:

1. A monitoring network will show the actual locations, rather than estimations, of the plumes caused by leaks. USDOE said that the plumes are not closer than 115 feet above the water table. These statements are based on data from the outdated well-logging systems used in the single-shell tank farms. In fact, the locations and movement of the waste plumes from as many as 66 leaking tanks are not known.

Appropriate geophysical logging equipment is commercially available. Combined with a comprehensive site-wide vadose monitoring plan, the right equipment could locate leaked waste. USDOE may be correct in their assumptions about plume locations. They must, however, demonstrate this conclusively with the best available technology. If they are incorrect, it could mean there is movement of high-level radioactive and chemical wastes to the Columbia River.

Delay of the vadose zone monitoring plan will seriously impede many areas of cleanup, such as of volatile organics. Without a comprehensive data base and an acceptable sampling record, "Leave or Retrieve" decisions will be difficult or impossible for scientists and the public to accept.

2. A comprehensive site-wide vadose monitoring plan could help determine the degree of mobility that cesium, strontium, and other radionuclides have in Hanford soils. This would add credible data to the theory that cesium and strontium adsorb onto the sands and clays of the Hanford soils, and would not reach the river. Once the high-level waste reaches the ground water, the time of travel to the Columbia River could be less than 100 years. This is a major concern for Washington and Oregon.

A weakness of ground water model predictions is the lack of credible retardation coefficients. A site-wide vadose monitoring system would give valuable data about retardation of hazardous constituents in the soils. This is an opportunity to get meaningful data on nuclear and chemical wastes movement.

3. Good data on the vadose zone characterization are essential to gain acceptance of the engineered barrier and in-place stabilization concepts being developed by USDOE.

4. Site-wide vadose zone monitoring combined with site-wide ground water monitoring is necessary for comprehensive cleanup.

COMMENT:

8.4

An estimated three thousand wells were drilled at Hanford before 1989. Most of these wells were drilled with technology that is unacceptable by present environment standards. Long-range plans for proper abandonment of these wells should be addressed in the site-wide ground water plan and permit process. These wells can allow interaquifer communication and transfer of contaminants. Improper sealing and deterioration of well seals can allow faster movement of contaminants from the vadose zone to the water table. Long-range plans should rank environmentally-sensitive areas.

COMMENT:

8.5

The Facility-Wide Waste Analysis Plan must be submitted by May 31, 1992. There should be staffing requirements for the low-level and mixed waste laboratories. These requirements should ensure that the right expertise will be available for the types and quantities of analyses needed for compliance.

COMMENT:

8.6

There are three emergency response plans in effect for the Site from Westinghouse, USDOE and Pacific Northwest Laboratory. This is a difficult and cumbersome arrangement for quality assurance and effectiveness. Problems will arise if responsibilities on-site shift or a company leaves. There should be only one emergency response plan for the Site.

OREGON DEPARTMENT OF ENERGY
COMMENTS ON DRAFT TREATMENT,
STORAGE AND DISPOSAL PERMIT

COMMENT:

8.1

Jeff B. We are concerned about funding for Hanford cleanup. USDOE must request the funds necessary to meet the milestones of the Tri-Party Agreement (and its revisions) on schedule. States must have timely access to activity data sheets for review and response. The data sheets must show the actual level of spending for critical cleanup activities. This should be stated in the Permit.

COMMENT:

8.2

The Permit Fact Sheet states that Ecology does not yet have authority to issue the Subpart X permit for the HWVP. EPA does not plan to issue a RCRA permit for the Site. While it is not certain if this will cause a delay in the construction start scheduled for April 1992, this problem should be resolved as quickly as possible. Construction of the HWVP must remain on schedule.

COMMENT:

8.3

Kryzger There is a vadose monitoring well system at the single shell tank farms in the 200 Areas of the Hanford Reservation. Its purpose is to help determine if leaks are occurring and to track the movement of previous leaks. These wells have monitored radioactivity levels of leaks that have occurred since 1956. From these data, the movement and location of the waste fluids are inferred.

The unsaturated (above the water table) "dry-well" monitors used around the underground high-level storage tanks differ from more common ground water monitoring wells. They do not sample fluids in the soils around the tanks. They measure moisture content and radioactivity levels of nuclear waste that has leaked into the soil.

The 1990 Tiger Team Assessment found that:

...The current system for vadose (unsaturated) surveillance around the single-shell tanks (SSTs) consists of outdated drywell logging techniques that are limited in their effectiveness...

**OREGON COMMENTS ON
DRAFT TREATMENT, STORAGE,
AND DISPOSAL PERMIT**

HANFORD FACILITY

FEBRUARY 1992