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STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

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June 1, 1995

Mr. Cliff Clark, Unit Manager
U.S. Department of Energy
P.O. Box 550
Richland, WA 99352

Dear Mr. Clark:

Re: Five Remaining LLBG Notices of Deficiency

In the next two months, the Washington State Department of Ecology (Ecology) would like to resolve the outstanding Notice of Deficiency comments for the Low-Level Burial Grounds (LLBG) permit application, Part B. The following five issues need to be resolved:

- 1) Waste acceptance criteria,
- 2) Use of unlined trenches,
- 3) Vadose zone monitoring,
- 4) Trench closure timing, design, and integration, and
- 5) A Submarine Reactor Compartment Performance Plan.

The attached narrative describes Ecology's current understanding of the unresolved issues. Ecology would like to have meetings during July and August to resolve our concerns to support the U. S. Department of Energy's (USDOE) submittal of the LLBG permit application for inclusion in Modification C (January 1997) of the Hanford RCRA Facility Wide Permit.

If you have any questions, please contact me at 736-3048. I look forward to working with you.

Sincerely,

Norman T. Hepner, P.E.
Nuclear Waste Program

NH: mf
Enclosure

cc: Admin Record (D-2-9)



ISSUES REMAINING FOR THE LOW-LEVEL BURIAL GROUNDS

1. Waste Acceptance Criteria

In the response to Notice of Deficiency (NOD) #14, Ecology was informed there is a new, state-of-the-art, portable high energy radiography unit which was to be tested early in 1994 for its capability to detect liquids in lead-shielded waste packages. A report and current status of this technology should be provided. Additionally, provide an estimate of the number of packages containing lead as shielding and the percentage of these packages which will be assessed for presence of liquids.

Although NOD #14 was originally limited to detecting liquids which may inadvertently get into the trenches, it is applicable to all packages. In the Hanford RCRA Permit, we are requiring the 305-B and 616 Storage units to perform limited waste verification on 5 % of shipments generated on-site. (See Conditions III.1.B.f., III.1.B.n., III.2.B.d., and III.2.B.f.). It is proposed on-site waste received at the LLBG also be subject to 5 % verification, and off-site waste be subject to 10 % verification. It is also proposed that the submarine reactor compartments (SRCs) be exempt from physical verification at the Hanford Site since USDOE performs verification at the storage units.

2. Use of Unlined Trenches

There is a need to discuss the continued use of the unlined trenches in the LLBG for mixed waste disposal. USDOE has used unlined trenches to dispose of mixed waste consistent with a January 26, 1988, strategy letter (see Appendix 4D of LLBG Permit Application). However, since that letter, more options have become available for mixed waste storage and disposal, such as the lined LLBG trenches, grout vaults, and the Central Waste Complex.

Furthermore, USDOE is assessing other disposal needs and options through a "Direct Disposal Options" team. Ecology proposes the 1988 strategy be revised to reflect the approved final product of the Direct Disposal Options team. Since an agreed plan for using unlined trenches will probably not be attained by October 1995, we propose that the text of the permit application be modified to state that the use of unlined trenches will be based upon the strategy in Appendix 4D. This will allow an extra year to resolve this issue, as a new strategy can be inserted into Appendix 4D just prior to USDOE resubmitting the application in October 1996.

The following issues were raised through previous NODs and should be considered in developing the new strategy.

- Quantities and descriptions of mixed waste packages currently disposed in the trenches
- Intent and need for using existing remote handled mixed waste trenches
- Need for liner and leachate collection systems

In the past, Ecology has stated that a single liner and leachate collection for "drag off" and other existing trenches be used for mixed waste disposal after permitting (Federal Register 50, page 28708, column 3). Ecology understands only one existing "drag-off" trench has previously accepted mixed waste (trench 9 of 218-E-10). Additionally, Ecology also requested USDOE identify which trenches received mixed waste after November 23, 1987. Ecology now proposes not attempting to establish the date of waste placement for each trench, but instead, focus on if, when, and how we will allow the continued use of unlined trenches (based on NOD Comments 1, 15, 16, and 122). The strategy developed will be the key element in addressing these questions.

3. Vadose Zone Monitoring

A vadose zone monitoring program should be included in the permit application. WAC 173-303-645 (9) (a) (ii) specifies evaluating the existence of waste constituents in the unsaturated zone beneath the waste management area. The appropriate approach includes characterizing the unsaturated zone, then modeling the migration of identified constituents (based on NOD Comment 179).

We anticipate a vadose zone monitoring plan could not be prepared by October 1995. Therefore, we recommend our discussions focus on the need, both regulatorily and technically, for such a plan. If Ecology determines such a need exists, the application need only state a vadose zone monitoring plan be developed and commit to a compliance schedule for developing and implementing such a plan.

4. Trench Closure Timing, Design, and Integration

Ecology is primarily concerned that there is unnecessary delay in covering unlined trenches containing mixed waste until USDOE fills unused portions of unlined trenches with radioactive wastes. Closure schedule, interim covers, order of filling trenches, covering units with unfilled trenches, delayed covering because of waste retrieval needs, difficulty in covering because of overlap onto existing structures, etc., need to be fully identified, examined, and finalized where possible for the permit application.

We propose USDOE funding be aimed at expediting the covering of unlined trenches. Additionally, a thorough review should be completed of the filling sequence to assess the possibility of eliminating non-mixed waste areas from the application by altering the trench filling sequence (based on NOD Comments 210 and 225). It is anticipated that some of these issues can be resolved by October 1995.

5. Submarine Reactor Compartment (SRC) Performance Plan

Ecology will be meeting with USDOE and the U.S. Navy to discuss the need for the SRC Performance Plan. At this time, the SRC Performance Plan should be finalized. Ecology proposes exploring alternative actions (e.g., interim cover, etc.) in lieu of a performance demonstration. It is expected this issue can be resolved with USDOE prior to October 1995, for incorporation into the application.

Additionally, Ecology maintains the liner exemption request for the SRC trench should be a part of the application and not a "supplement" to the application. Approval of the liner exemption request would then be obtained concurrently with permit issuance. This issue can be resolved prior to October 1995.