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STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

7601 W. Clearwater, Suite 102 • Kennewick, Washington 99336 • (509) 546-2990

October 1, 1993

Mr. John Erickson  
Department of Health  
P. O. Box 47827  
Seattle, WA 98504-7827



Dear Mr. Erickson:

Re: 100 Area Excavation Treatability Test Plan *28272*

The Washington State Department of Ecology appreciates the letter you sent on July 7, 1993, regarding the 100 Area Excavation Treatability Test Plan. The comments, questions, and concerns identified in the letter are appreciated, and will be addressed in the following paragraphs. Please note that the planned field activities have begun and will continue into October 1993.

General Comments (cover letter):

Regarding data acquisition; the Washington State Department of Health (DOH) has *standard public access* to data as defined in the Hanford Federal Facility Agreement and Consent Order (TPA). The Washington State Department of Ecology (Ecology) will provide any data stipulated by the TPA as being public accessible.

Regarding observation of testing operations; any site access or observation is up to the U. S. Department of Energy (DOE). I am assuming that DOH employees have the necessary clearance, and therefore site access to the testing area would not be a problem. This request should be taken up directly with DOE. I can provide you with the necessary contacts, if you need them.

Specific Comments:

COMMENT: "Section 1.3.2 states . . ."

RESPONSE: The estimated 280 pCi of fission products is taken from the 100-FR-1 reactor logs that were updated as cladding failures occurred (during the operating years,

9413289.2182

START

Mr. John Erickson  
October 1, 1993  
Page 2

1950-52) by the reactor operator. The following inventory is provided in the 100-FR-1 work plan, and is the result of soil sampling of the 116-F crib by Dorian and Richards, performed in 1975.

| Isotope                 | Half-Life Years   | Maximum Soil conc.<br>pCi/g |
|-------------------------|-------------------|-----------------------------|
| 137 CS.                 | 30                | 5,400                       |
| 134 CS.                 | 2.1               | 420                         |
| 155 EU.                 | 4.68              | 350                         |
| 154 EU.                 | 8.59              | 130                         |
| 152 EU.                 | 13.5              | 21                          |
| U (isotope unspecified) | between 33 and 52 | 1.3                         |
| 240 PU.                 | 6,563             | 290                         |
| 239 PU.                 | 24,119            | 290                         |
| 238 PU.                 | 87.7              | 1.5                         |
| 60 Co.                  | 5.27              | 1.4                         |
| 90 Sr.                  | 29.1              | 3,000                       |
| 3H                      | 12.3              | 140                         |

The actual amount of activity left in the soil to date can be easily calculated by using the following equation:

$$\text{Current activity left in the soil (pCi/gram)} = \text{Initial concentration} \times E^{-(\text{decay constant} \times \text{time})}$$

Initial concentration equals the detected amounts of activity from the 1975 soil sampling (e.g., pCi/gram listed above). E equals the natural exponential. The decay constant of each isotope can be calculated by dividing the natural log of 2 by the half-life of the isotope. Time equals the amount of time that has passed since the results of the soil sampling were determined (approximately 18 years).

COMMENT: Section 2.1.1, page 10, mentions "Allowable exposure rates per day . . ."

9413289.2183

Mr. John Erickson  
October 1, 1993  
Page 3

RESPONSE: Curies per day technically is not an exposure rate. The table and supporting text will be revised so that exposure rates will be properly represented.

COMMENT: Section 2.1.1, second paragraph, ". . . discusses background radiation . . ."

RESPONSE: Surveillance of surface background radiation is standard operating procedure and is done prior to any field work performed at Hanford, especially intrusive field work. It is true that fallout components are common to sites where nuclear weapons are produced. There are some areas of Hanford that have considerable background radiation levels. Typically, the 100 Areas do not have this problem (with the exception being some areas associated with N reactor), and that is one reason why the 100 Areas are being considered for remediated strategies that would allow for unrestricted land use. It was standard procedure when abandoning cribs that a clean layer of soil was placed over the top of the contaminated soil column. This feature of a crib in part helps delineate fallout/cosmic radiation components from the radiation at below ground surface that was placed there as a result of cladding failures. A sentence will be added indicating that fallout/cosmic components are not significant in this case.

COMMENT: Section 2.2.1, page 14, ". . . first paragraph states . . ."

RESPONSE: The assumption is made solely for the purpose of calculations. As the paragraph states, this assumption allows the generation of two bounding errors. Different possible scenarios must be taken into consideration when one evaluates a realistic energy distribution. No changes to the document will be made.

COMMENT: ". . . masks or respirators will be very uncomfortable in the summer at Hanford, they may be appropriate during the Baseline portion of the dust control test."

RESPONSE: Ecology does not have the regulatory authority to implement Chapter 296-62 WAC (Washington Industrial Safety and Health Act). We cannot require the use of respirators for workers. Worker safety concerns must be addressed to the Department of Labor and Industries. However, DOE does prepare an internal Radiation Work Permit (RWP). The RWP addresses situations that could occur necessitating the use of respirators. The RWP however, is not available for public comment.

COMMENT: Under State regulations, DOE Air Emissions regulations should be cited.

RESPONSE: State ARARs must be met for "on-site" actions only when they are more stringent than federal ARARs (CERCLA, Section 121). The current version of Chapter 246-247 WAC has been determined to be equivalent to 40 CFR Part 191. After the

9413289.2184  
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Mr. John Erickson  
October 1, 1993  
Page 4

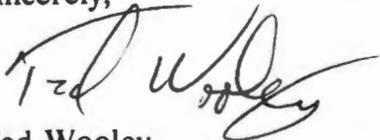
revised regulation is promulgated, this determination issue will be revisited. Numerous other state ARARs are not listed. It is, therefore, not necessary to list this state regulation.

COMMENT: DOH should be added as a primary data user.

RESPONSE: Primary data users at Hanford are agencies that make remedial action decisions. For Hanford, those decisions are made by the Environmental Protection Agency (EPA) and Ecology. Ecology does recognize the importance of DOH's role at Hanford, and has agreed to make all data available to DOH, but DOH does not have the status of a primary data user.

Thank you for your participation and Ecology looks forward to working with you and your staff in the future. If you have any questions or concerns, please contact me at 736-3012.

Sincerely,



Ted Wooley  
Unit Manager  
Nuclear & Mixed Waste Management Program

TW:mf

cc: Eric Goller, DOE  
Dennis Faulk, EPA  
Administrative Record

9413289.2185

Mr. Gerald Pollet  
October 4, 1993  
Page 5

bcc: Jack Donnelly  
Mary Getchell  
Mark Wallace

9413289.2186

# CORRESPONDENCE DISTRIBUTION COVERSHEET

Author

Addressee

Correspondence No.

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Waste Management Program

Admin. Record, WHC

Incoming: 94063048 *9*

Subject: 100 AREA EXCAVATION TREATABILITY TEST PLAN

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