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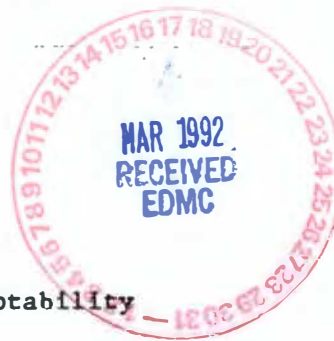


STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

Mail Stop PV-11 • Olympia, Washington 98504-8711 • (206) 459-6000

March 4, 1992

Mr. Steven H. Wisness  
Project Manager  
U.S. Department of Energy  
P.O. Box 550  
Richland, WA 99352



RE: Grout Vault 103 Liner Acceptability

Dear Mr. Wisness:

In a letter dated December 9, 1991, Ecology required that vault 103 be repaired and hydrostatically retested because of the vault's failure to pass the original hydrotest. Ecology also required a written summary of the hydrotest results for vaults 102 through 105. This summary was received by Mr. Joe Witczak at a meeting held December 23, 1991. Your response to the additional work on the vault was provided in a letter dated January 27, 1992, which indicated that the spray-on liner was repaired and retested with spark testing equipment. You also state in the letter that Energy does not intend to conduct a second hydrotest of vault 103. Although we agree with some of the points raised in your response, it is still Ecology's opinion that an additional hydrotest is required to confirm the integrity of vault 103. Two reasons for our position are as follows:

1. Hydrotesting of the first four vaults indicated that 33 feet of hydrostatic pressure may damage the spray-on liner. This was evidenced through your spark testing procedure.— This fact has raised concerns that the spray-on liner may also be damaged by the load imparted by the grout slurry. Although we agree that the liner system will probably not be subject to 33 feet of hydrostatic pressure during grouting operations, it remains unclear what amount of loading will damage the spray-on liner and what effect this damage may have on liner performance.
2. The adequacy of the repair work conducted on the spray-on liner was only verified through spark testing. However, we have based our acceptance of your alternative landfill design and the treatment of a radioactive, mixed waste slurry in a land-based unit on the fact that the vaults were designed to perform as liquid storage tanks which would be proven essentially leak-free (less than 0.1 gallons per day) through the hydrostatic test. At this time, there is no evidence that the spark testing of the liner provides equivalent assurance of the liner's integrity compared to a hydrostatic test.

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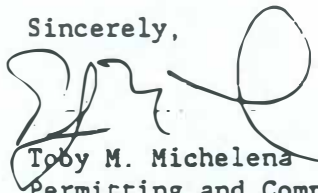
Mr. Wisness  
March 4, 1992  
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In order to gain Ecology's approval for the use of vault 103 for mixed waste activities, a confirmation hydrotest needs to be conducted. Considering that; 1) the vaults will be filled in lifts and therefore may not experience a full 33 feet of head, 2) no leaks were observed from the exterior vault 103 walls during the original hydrotest, and 3) only the bottom ten feet of the vault's spray-on liner required repair, Ecology will accept a hydrotest conducted on only the bottom ten feet of the vault. The test must be run for the original 48 hour duration and use the original leak acceptance criterion of 0.1 gallons per day. This hydrotest will; 1) provide a better understanding of the loading which the liner is capable of withstanding without damage, 2) verification that repair and re-sparking of the spray-on liner is adequate to ensure the integrity of the spray-on liner, and 3) provide Ecology the confidence to attest to the public that the integrity of each vault is unquestionable.

Assuming vault 103 passes the second hydrotest, the knowledge of acceptable loads on the liner and the confidence in spark testing procedures can be factored into the development of revised hydrotest procedures and acceptance criteria for future vaults.

Any questions regarding this issue may be directed to Ecology's Grout Unit Manager, Mr. Joe Witczak at (206) 438-7557.

Sincerely,



Toby M. Michelena  
Permitting and Compliance Unit Supervisor  
Nuclear and Mixed Waste Program

cc: Dan Duncan, EPA  
Dave Jansen, Ecology  
Dave Nylander, Ecology  
Sue Price, WHC  
Tim Veneziano, WHC/AR

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Addressee

Correspondence No.

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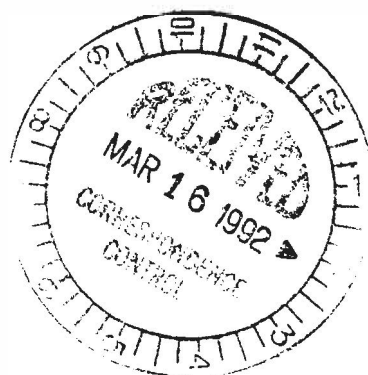
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SUBJECT: GROUT VAULT 103 LINER ACCEPTABILITY

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