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## Department of Energy

Richland Field Office

P.O. Box 550

Richland, Washington 99352

93-RPB-079

JAN 04 1993

Mr. David B. Jansen, P.E.  
Hanford Project Manager  
State of Washington  
Department of Ecology  
P.O. Box 47600  
Olympia, Washington 98504-7600

Dear Mr. Jansen:

REQUEST FOR CONFIRMATION THAT THE CANISTER STORAGE BUILDING IS NOT AN EMISSIONS SOURCE SUBJECT TO THE CLEAN AIR ACT

On October 13, 1992, a meeting was held in Richland to discuss technical issues associated with air emissions from the proposed Hanford Waste Vitrification Plant. The meeting was attended by the State of Washington Department of Health, State of Washington Department of Ecology (Ecology), U.S. Department of Energy (DOE), Richland Field Office (RL), and Westinghouse Hanford Company. As part of the discussion, Ecology expressed concern over the presence of more than 600 High-Efficiency Particulate Air (HEPA) filters in the design of the Canister Storage Building (CSB); a structure that RL has determined will not contain any sources of regulated air emissions.

Documentation clarifying the reasons for inclusion of HEPA filtration in the CSB is enclosed. As agreed at the October 13, 1993, meeting, RL hereby requests that Ecology confirm, in writing, the conclusion that, while HEPA filtration is required in the CSB design to comply with DOE orders, the CSB does not constitute a source of regulated emissions necessitating Ecology approval of construction under Washington Administrative Code Chapter 173-400.

Should you have any questions regarding this transmittal, please contact me or Mr. S. D. Stites of my staff on (509) 376-8566.

Sincerely,

*James D. Bauer*  
James D. Bauer, Acting Program Manager  
Office of Environmental Assurance,  
Permits, and Policy

EAP:SDS

Enclosure:  
Use of HEPA Filters in the HWVP CSB

cc: D. G. Baide, WHC  
A. W. Conklin, DOH  
G. W. Jackson, WHC  
R. W. Oldham, WHC



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Enclosure

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## Use of High-Efficiency Particulate Air Filters in the Hanford Waste Vitrification Plant Canister Storage Building

### Background:

The State of Washington Department of Ecology has raised questions concerning the use of High-Efficiency Particulate Air (HEPA) filtration in the Hanford Waste Vitrification Plant Canister Storage Building (CSB). If these filters represent normal use emission control devices, their presence in the building design would indicate that the CSB should be permitted under the Clean Air Act. In this document, the use of HEPA filters in the CSB is reviewed.

### Conclusion:

The HEPA filters included in the design of the CSB will not be used to control emissions of regulated pollutants. Instead, the HEPA filters will be a component of the secondary confinement system for the hazardous, vitrified material, as required by U.S. Department of Energy (DOE) orders. The CSB will not be a source of regulated emissions to the atmosphere. As a result, no requirement exists for permitting the CSB under the Clean Air Act.

### Evaluation:

The CSB will not use any HEPA filters in the heating, ventilation, and air conditioning (HVAC) or storage vault natural convection cooling systems. The CSB HVAC and natural convection-cooled storage vault systems are shown on Drawings H-2-129730 through H-2-129738. The only HEPA filters in the building will be located in the canister storage tube floor plugs and in the Health Protection (HP) vacuum pump system.

DOE Order 6430.1A requires that all new high-level radioactive waste storage facilities contain primary and secondary confinement systems. The DOE Order 6430.1A describes a "confinement system" as "the barrier and its associated systems (including ventilation) between areas containing hazardous materials and the environment or other areas in the facility that are normally expected to have levels of hazardous materials lower than allowable concentration limits." The sealed canisters will provide the primary confinement of the hazardous vitrified material. The vitrified material will be in a solid borosilicate glass form, and the filled canisters will have been evacuated, sealed, decontaminated, and surveyed before being placed in the CSB. No regulated pollutants will be released from the sealed canisters. The canisters will be stored within tubes under the CSB floor, and the tubes will be sealed with plugs. The canister storage tubes, in conjunction with floor plugs, will provide secondary confinement for the canistered hazardous material. Because the filled canisters will be thermally hot due to radioactive decay, the air within the storage tubes will expand. To allow this expansion and prevent pressurization in the storage tubes, and still maintain the storage tubes as secondary confinement, small breathing HEPA filters, about one inch in diameter, will be installed in the floor plugs. The HEPA filters will be used because they have been qualified and accepted for use in confinement systems. There will be 660 standard and 17 overpack floor plugs equipped with these filters in the CSB.

There will also be two HEPA filter systems placed on the intake side of the HP System vacuum pumps. The function of these filters will be to protect the vacuum pumps from dirt and/or other foreign particles in the intake air. These two filters are identified as FH-620-003A and -003B on Drawing H-2-123370, Sheet 5. The present designation of HEPA filters for this purpose may be changed in the future, because there is no requirement that these filters meet high-efficiency filtering standards of HEPA-type filters.

While not part of the CSB, a motorized vehicle called the Shielded Canister Transporter (SCT) will transport filled canisters from the Vitrification Building to the CSB for interim storage. The SCT will contain a two-stage HEPA filter system. During emplacement and retrieval operations, floor plugs in the CSB will be removed. The SCT HEPA-filtered exhaust system will maintain secondary confinement while the floor plugs are removed. This system will be operated only during canister exchange operations.

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| Subject: REQUEST FOR CONFIRMATION THAT THE CANISTER STORAGE BUILDING IS NOT AN EMISSIONS SOURCE SUBJECT TO THE CLEAN AIR ACT |                       |                                   |

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