EIS PROJECT - AR PF
Control # DC-22
HLW & FD

Feb. 13, 2000
Box 293
Ketchum, Id.
83340

Dear Mr. Wichmann,

22-1
II A(2)

I am opposed to the draft plan for treating & disposing of radioactive waste at sites throughout the west, including the INEEL in Idaho Falls.

I am concerned about the safety of workers who could be exposed to these toxic wastes as well as the possible contamination of the Snake River Plain Aquifer.

Impacts to Idaho depend on which waste processing & facilities disposition alternatives DOE selects.

22-2
X1(5)

The Advanced Mixed Waste Treatment Facility has not been proven to protect our scenic environment and human health.

22-3
VIII.B(4)

Please consider the sanctity of all living beings when determining disposal & treatment of Poisons. Char Roth



DEPARTMENT OF HEALTH & HUMAN SERVICES
Public Health Service

HLW & FD

EIS PROJECT - AR PF
Control # DC-23

Centers for Disease Control
and Prevention (CDC)
Atlanta GA 30341-3724
February 7, 2000

RECEIVED
FEB 16 2000

Thomas L. Wichmann, Document Manager
U.S. Department of Energy, Idaho Operations Office
850 Energy Drive, MS 1108
Idaho Falls, Idaho 83401-1563
Attention: Public Comment: Idaho HLW & FD EIS

Dear Mr. Wichmann:

We have completed our review of the Draft Environmental Impact Statement (DEIS) for Idaho High-Level Waste and Facilities Disposition. We are responding on behalf of the U.S. Public Health Service, Department of Health and Human Services (DHHS). This letter serves as a response to your letters of request sent to Dr. Jeffery Koplan, Director, Centers for Disease Control and Prevention (CDC), to Mr. Richard Green , Environment and Safety Officer, (DHHS), and to Mr. Kenneth W. Holt, National Center for Environmental Health, CDC.

23-1
IX.B(2)

We request that future correspondence related to the National Environmental Policy Act (NEPA), specifically requests for review of environmental impact statements, be sent only to Mr. Holt for coordination at the following address:

Kenneth W. Holt, MSEH
Centers for Disease Control & Prevention
National Center for Environmental Health
Emergency & Environmental Health Services Division (F16)
4770 Buford Hwy. NE
Atlanta, GA 30341-3724

Technical assistance for this review was provided by Mr. Charles M. Wood, Radiation Studies Branch, Division of Environmental Hazards and Health Effects, National Center for Environmental Health, CDC. Please consider the following comment provided by Mr. Wood:

23-2
VIII.B(1)

"The Defense Nuclear Facilities Safety Board audited the Department of Energy program for HEPA filters and cited several serious deficiencies. I have attached a copy of this audit for your information. One of the more serious deficiencies is that DOE has shut down its facility for quality assurance testing of new filters. All the machinery is now at Lawrence Livermore National Laboratory, but there is no funding to assemble the equipment and put it back into operation. The proposed facilities in the DEIS will depend on HEPA filters to meet emissions standards. For new facilities DOE should address the deficiencies cited in the DNFSB audit. How do they propose to do that?"

Thank you for the opportunity to review and comment on this DEIS. Please send us a copy of the Final DEIS, and any future environmental impact statements which may indicate potential public health impact and are developed under the National Environmental Policy Act (NEPA).

Sincerely,

Kenneth W. Holt

Kenneth W. Holt, MSEH
Emergency & Environmental Health Services Division
National Center for Environmental Health (F16)

enclosure

CDC:NCEH:EEHS:CDB:CMWOOD/KHolt;jm doc:idahowastes; 2/7/00
Necessary Action Folder ID: 11331



June 8, 1999

The Honorable Bill Richardson
Secretary of Energy
1000 Independence Avenue, SW
Washington, DC 20585-1000

Dear Secretary Richardson:

Since its inception, the Defense Nuclear Facilities Safety Board (Board) has provided its observations on a number of issues associated with confinement ventilation systems installed in the facilities under the Board's purview. In particular, issues involving high-efficiency particulate air (HEPA) filters identified by the Board's staff during its reviews of ventilation systems have been highlighted in the Board's correspondence. Many of these issues remain unresolved, as indicated in the enclosed report by our staff.

The report describes significant degradation of the infrastructure supporting the Department of Energy's (DOE) HEPA filter program. Confinement viability demands high dependability of these filters, yet beyond question their efficacy has deteriorated. The filters can be restored to an acceptable level of reliability only if the robust infrastructure required to support continued assurance of their performance is restored. The Board's staff has identified a number of actions that could be taken to achieve that restoration and the Board believes that DOE should act promptly to initiate a definitive corrective action plan to address those issues.

Accordingly, pursuant to 42 U.S.C. § 2286b(d) the Board requests that DOE provide a report within 60 days outlining the steps it plans to resolve these issues in a manner that restores confidence that confinement ventilation systems using HEPA filters do, indeed, adequately protect workers, the public, and the environment.

In the future, the Board intends to closely examine operational and maintenance aspects of confinement ventilation systems in general, and will share our findings with you upon completion of that review.

Sincerely,

John T. Conway
Chairman

c: Mr. Mark B. Whitaker, Jr.

Enclosure

**HEPA Filters**

**Used in the**

**Department of Energy's Hazardous Facilities**

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**Defense Nuclear Facilities Safety Board**

**Technical Report**

**May 1999**



**HEPA Filters**

**Used in the**

**Department of Energy's Hazardous Facilities**

This technical report was prepared for the Defense Nuclear Facilities Safety Board by the following staff members:

Roger Zavadoski
Dudley Thompson

with assistance from:

Ronald Barton
J. Kent Fortenberry

## EXECUTIVE SUMMARY

Confinement ventilation systems are important safety features of Department of Energy (DOE) facilities in which hazardous materials are handled in dispersible form. High-efficiency particulate air (HEPA) filters are critical elements of these confinement systems. They are the final physical barrier to the release of material to the atmosphere and thereby serve to protect workers, the public, and the environment. For accident scenarios, HEPA filters are credited with reducing emissions by factors of thousands to billions.

Reviews of ventilation systems at DOE defense nuclear facilities conducted by the staff of the Defense Nuclear Facilities Safety Board (Board) during the early 1990s led to the Board's first report on this subject, *Overview of Ventilation Systems at Selected DOE Plutonium Processing and Handling Facilities* (DNFSB/TECH-3). More recent reviews have identified additional potentially significant weaknesses in the maintenance and operation of these systems, particularly in the procurement, testing, application, and use of HEPA filters. These weaknesses support the conclusion that confinement ventilation systems at some DOE facilities may be vulnerable to failure when most needed.

For many years, an informal but highly effective nationwide infrastructure supported production of and quality assurance for HEPA filters for safety-related service in a variety of hazardous operations, including those conducted in DOE facilities. Today there is convincing evidence that this infrastructure is failing; this report describes significant degradation of the infrastructure supporting DOE's HEPA filter program. Confinement viability demands that these filters be highly dependable, yet beyond question their efficacy has deteriorated. The filters can be restored to an acceptable level of reliability only if the robust infrastructure required to support continued assurance of their performance is restored. This report identifies a number of actions that could be taken to achieve that restoration.

The Board will continue to focus attention on deficiencies and weaknesses in confinement ventilation systems at DOE facilities. These efforts will be aimed at identifying situations in which DOE can act to improve protection of workers, the public, and the environment.





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## 1. INTRODUCTION

Confinement, the Department of Energy's (DOE) preferred method for protecting the public and workers from exposure to hazardous materials, encompasses both the physical structures in which the material resides and the associated ventilation systems. Before air from the confinement is released to the environment, it is filtered through high-efficiency particulate air (HEPA) filters to ensure that any residual contamination is well below acceptable, safe levels for public exposure (Burchsted et al., 1976). In such applications, HEPA filters can reduce emissions by factors of thousands to billions.

An acceptable confinement system starts with a robust and well-documented design—robust not only in the physical structures involved, but also in the attributes of defense in depth incorporated in the overall system design. Confinement systems are expected to be documented comprehensively in safety documents, such as Safety Analysis Reports (SARs), Technical Safety Requirements (TSRs), and Operational Safety Requirements (OSRs) (DiNunno, May 31, 1995). Typically, the strenuous demands imposed by the need for uninterrupted operation of confinement ventilation systems for extended periods of time—often decades—have led to the rugged designs often found in DOE facilities. Redundant filter banks and power supplies are common in modern applications (U.S. Department of Energy, April 6, 1989; October 24, 1996). Despite their otherwise robust construction, however, all confinement ventilation systems that use HEPA filters are vulnerable to failure of their most fragile component, the HEPA filter itself, which uses a medium no thicker than the typical desk blotter. Like paper, this medium becomes brittle with age and is significantly degraded by wetting. As a result, HEPA filters must be regarded as consumables that require replacement at defined intervals. However, DOE does not currently require replacement.

On March 20, 1995, the Defense Nuclear Facilities Safety Board (Board) issued a technical report entitled *Overview of Ventilation Systems at Selected DOE Plutonium Processing and Handling Facilities* (DNFSB/TECH-3) (Defense Nuclear Facilities Safety Board, March 20, 1995). This report identifies numerous instances of a lack of adequate accounting of how and whether facilities met and maintained compliance with specific requirements. The report concludes that as a result of these shortcomings, confinement systems at DOE's plutonium facilities might not perform as expected in the event of an accident.

In its letter forwarding this report (Conway, June 15, 1995) and in subsequent correspondence (Conway, July 21, 1995), the Board requested that DOE evaluate the design, construction, operation, and maintenance of ventilation systems at its plutonium processing and handling facilities and set forth a plan for corrective actions deemed necessary as a result of this evaluation. DOE formally responded to these requests in early spring 1996 (O'Leary, March 15, 1996). Approximately one-quarter of the 36 actions proposed by DOE in its corrective action plan still remain open.

Since the issuance of DNFSB/TECH-3, several related issues have been identified. These include (1) the need for pre-installation filter test facilities (Zavadoski, May 24–26, 1994; July 11–13, 1995); (2) the need for a Qualified Products List (QPL) test laboratory (Zavadoski,







August 4–8, 1997; Conway, October 30, 1997); (3) the problem of filter wetting (Zavadoski, August 4–8, 1997; Conway, October 30, 1997; Frethold et al., July 14, 1997); (4) the effects of aging on the integrity of filters (Zavadoski, August 4–8, 1997; Frethold et al., July 14, 1997); (5) by-pass leakage considerations (Frethold et al., July 14, 1997; Roberson, March 3, 1997); (6) radiation-induced degradation (Conway, May 9, 1996); and (7) issues involving the infrastructure associated with HEPA filters (Alm, January 15, 1998; Conway, February 9, 1998; March 26, 1998; Owendoff, April 27, 1998). In addition, relevant research results that raise questions about fundamental assumptions used in Safety Analysis Reports have been presented in national and international forums (Frethold et al., July 14, 1997; Bergman et al., 1994; Carbaugh, 1982; Johnson et al., 1988; Moeller, 1982; First, 1996; Robinson et al., 1985). These issues are explored in the following sections.