



**Department of Energy**  
**National Nuclear Security Administration**  
 Washington, DC 20585

October 17, 2003

RECEIVED  
 2003 OCT 21 PM 3:58  
 DEFENSE SAFETY BOARD

The Honorable John T. Conway  
 Chairman  
 Defense Nuclear Facilities Safety Board  
 625 Indiana Avenue, N.W.  
 Suite 700  
 Washington, D.C. 20004

Dear Mr. Chairman:

In your August 14, 2003, letter you requested clarification of the July 11, 2003, report from the Secretary of Energy on High-Efficiency Particulate Air (HEPA) filters. Specifically you asked for "... a clarification of the EM and NNSA responses for habitability-related High Efficiency Particulate (HEPA) filters within the next 60 days. For each EM and NNSA site, please identify whether any HEPA filtered ventilation systems exist for the protection of personnel who must shelter or continue operations in nuclear or non-nuclear facilities (including emergency operations centers) following an accident in a nearby nuclear facility. For those sites where such ventilation systems exist, please identify the QA testing program for HEPA filters used in those ventilation systems."

The clarifications provided by each NNSA site are attached. In summary, the Sandia Site Office, Kansas City Site Office, Livermore Site Office, and Nevada Site Office, as well as the NNSA portions of the Savannah River Site Office, do not currently have habitability-related HEPA filters. The Pantex site has identified three facilities whose HEPA filters serve limited habitability functions. The Y-12 site has such filters only in its Emergency Operations Center (EOC). The Los Alamos Site Office has these filters in its EOC and three other facilities and is taking steps to implement fully the Secretary's June 4, 2001, direction concerning HEPA filters in habitability applications. The enclosed site reports provide additional details about the facilities and the associated Quality Assurance Testing Programs.

If you have any questions, please contact me or have your staff contact Jeff Underwood of my staff at (301) 903-8303 or have your staff contact the points of contact indicated in each site letter.

Sincerely,

Everet H. Beckner  
 Deputy Administrator  
 for Defense Programs

Enclosures



cc w/enclosures:

M. Whitaker, DR-1

J. Mangeno, NA-3.6

Manager, Sandia Site Office

Manager, Kansas City Site Office

Manager, Pantex Site Office

Manager, Livermore Site Office

Manager, Nevada Site Office

Manager, Y-12 Site Office

Manager, Savannah River Site Office

Manager, Los Alamos Site Office

**Summary of Site Responses Concerning High Efficiency Particulate Air (HEPA) Filters**RECEIVED  
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DNFSB SAFETY BOARD**1. Sandia Site Office.**

Sandia National Laboratory (SNL) doesn't have HEPA filtered habitability ventilation at either the primary or alternate Emergency Operations Centers (EOC), or any mobile Incident Command. Moreover, SNL doesn't have locations with requirements for habitability in emergency situations. SNL is working on plans for a new EOC that would include habitability ventilation in the event of an accident or sabotage involving a radiological, chemical or biological release.

**2. Kansas City Site Office.**

The Kansas City Plant has no HEPA filters as described in the August 14, 2003, correspondence from the Defense Nuclear Facilities Safety Board (DNFSB).

**3. Pantex Site Office.**

There are no Safety Class or Safety Significant HEPA filters credited at the Pantex Plant. "Shelter-in-place" procedures require securing ventilation in the building, hence any HEPA filters in the ventilation system, for whatever intended purpose, will provide no protection to the sheltered persons. Additionally, automatic shutdowns of the ventilation systems occur in response to a Radiation Alarm Monitoring System alarm, hence the HEPA filters in the ventilation systems are not relied upon during an emergency. Filters are tested to industrial standards consistent with their design use for Quality Assurance purposes. The Pantex site has identified three EOC and security facilities with filters serving habitability functions. BXWT Pantex is evaluating the costs of a test program.

**4. Livermore Site Office.**

No habitability-related HEPA filters exist at Lawrence Livermore National Laboratory. The laboratory does, however, recognize the need for its EOC to have a HEPA filtered habitability system and has requested FY 2004 funding for such a system. Interim protective measures include the identification of two alternate EOC locations on site and a facility based "Shelter-in-place" program that includes disabling of unfiltered air intake systems during airborne release incidents.

**5. Nevada Site Office.**

No Nevada Test Site facility currently has HEPA filtered ventilation systems used for the protection of personnel who must "shelter in place" following an accident in a nearby nuclear facility.

**6. Y12 Site Office.**

No facilities at the Y12 National Security Complex (NSC) have areas where personnel must shelter for the purpose of continuing operations, and the Y12 NSC does not have HEPA filters for the protection of personnel who must "shelter in place" following an event. The EOC is located off site in Building K-1650 of the East Tennessee Technology Park (ETTP), former K-25 site) The HEPA filters supporting this facility were installed in 1993 following a successful test at the Filter Test Facility (FTF). Replacement filters are tested at the FTF.

**7. Savannah River Site Office.**

The Savannah River Site Office has no HEPA filtered ventilation systems installed for any habitability areas or process systems. The Tritium Extraction Facility (under construction) will use HEPA filters in the area associated with the extraction furnaces. These filters will be tested in accordance with the prescribed requirements.

**8. Los Alamos Site Office.**

The new EOC and TA-55 have HEPA filtration systems. And the Central Alarm Station/Security Alarm System and TA-3/44 have air intakes that are designed for habitability as specified in DOE G 151.1. LANL conducts 100% filter testing on HEPA filters for habitability. In addition, nuclear facilities test their filters as per their authorization basis. LANL follow the minimum requirements for the Institute for Environmental Sciences and Technology. The Laboratory has not established a policy or procedure for tailored quality testing.

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SAR SITE BOARD

**National Nuclear Security Administration**

Sandia Site Office  
P.O. Box 5400  
Albuquerque, New Mexico 87185-5400



AUG 27 2003

MEMORANDUM FOR: Samuel D. Johnson, Deputy Director, Office of Operations  
and Readiness, NA-124

FROM: Karen L. Boardman, Manager

SUBJECT: Clarifying Information Regarding HEPA Filters

The Sandia Site Office memo to C. Przybylek (NA-1)/E. Beckner (NA-10), dated May 19, 2003, provided our response to the memo from Przybylek/Beckner to the Site Offices on the subject of "Request for Status of Quality Assurance Testing of High-Efficiency Particulate Air (HEPA) Filters at National Nuclear Security Administration Sites," dated April 11, 2003.

In response to the email request of Tuesday, August 5, 2003, from X. Ascanio (NA-124) to Site Office Managers, on the subject of Clarification of HEPA Filter Questionnaire [question #2 of the April 11, 2003 memo], the following information is provided. Sandia National Laboratories (SNL) does not have HEPA filtered habitability ventilation at either the primary or alternate EOC, or any mobile Incident Command. Moreover, SNL has no locations with requirements for habitability in emergency situations. SNL is working on plans for a new EOC that would include habitability ventilation in the event of an accident or sabotage involving a radiological, chemical, or biological release.

If you have any questions regarding this matter, please feel free to contact Mark Hamilton of my staff at (505) 845-4045.

cc:

D. Nichols, DNFSB  
J. Loye, SNL, MS1145  
J. Hanks, SNL, MS0177  
S. Yesner, SNL, MS0891  
M. Hamilton, SSO  
R. Wright, SSO

United States Government

**memorandum****Department of Energy  
National Nuclear Security Administration  
Kansas City Site Office  
Kansas City, Missouri 64141-0202**DATE: **OCT 03 2003**

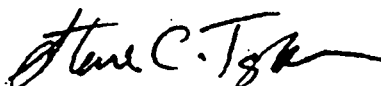
REPLY TO: OSS: David M. Caughey (816) 997-3449

SUBJECT: High Efficiency Particulate Air (HEPA) Filters

TO: Everet H. Beckner, Deputy Administrator for Defense Programs, NA-10, HQ

Your memorandum of September 12, 2003, requested each site to provide a response regarding the Defense Nuclear Facilities Safety Board's (DNFSB) letter of August 14, 2003, concerning HEPA filters. Honeywell FM&T has researched this issue and has concluded that the habitability related HEPA filters referenced in your memorandum and the DNFSB letter do not exist at any of the facilities they currently manage. The Kansas City Site Office concurs with this conclusion.

If you have any questions regarding this matter, please feel free to contact David M. Caughey of my staff at (816) 997-3449.



Steve C. Taylor  
Acting Manager

cc: P.T. Hoopes, KCSO/OSS

United States Government

Department of Energy

# memorandum

National Nuclear Security Administration  
Pantex Site Office

DATE: SEP 30 2003

REPLY TO  
ATTN OF: PXSO:NE:TJZ

SUBJECT: High Efficiency Particulate Air (HEPA) Filters

TO: Everet H. Beckner, Deputy Administrator for Defense Programs, NA-10

## Reference:

- 1) NNSA letter, Beckner/Glenn, dated September 12, 2003 requesting the site to identify HEPA filtered ventilation systems that exist for the protection of personnel who must shelter or continue operations in nuclear or non-nuclear facilities following an accident.
- 2) DNFSB letter, Conway/Abraham, dated August 14, 2003 requesting additional information about High Efficiency Particulate (HEPA) filter testing.

Attached is the site's updated response to the Board's August 14, 2003 letter regarding the installation, use, and testing performed on HEPA filters at Pantex.

The following clarifications are provided as additional information in regard to the attached letter:

- The number of filters listed in Attachment 1 identifies the number of "filter assemblies" and not the "physical" number of filters (which is a considerably higher number).
- The reference to Building 12-75 and 12-75A can be used interchangeably in the context of this letter.

If you have any questions, please contact Terry Zimmerman of my staff at (806) 477-4906.



Daniel E. Glenn  
Manager

Attachment  
See Page 2 for ccs

03-13769-NE

SEP 30 2003

Beckner

2

cc w/attachment:

Steve Erhart, PXSO, 12-36  
Don Brunell, PXSO, 12-036  
Jerry Johnson, PXSO, 12-036  
John Kirby, PXSO, 12-036  
Karl Waltzer, PXSO, 12-036  
Robin Madison, BWXT  
Cherri Moore, 12-5G, BWXT  
Carl Durham, 12-6, BWXT  
Gerald Armentrout, 12-6G, BWXT  
Joe Papp, 12-5D, BWXT  
Jeff Underwood, NA-124  
Xavier Ascanio, NA-124

03-13769-NE





P.O. Box 30020 Amarillo, Texas 79120 806/477-3000

---

SEP 30 2003

Mr. Donald G. White, PXSO Contracting Officer  
U.S. Department of Energy  
National Nuclear Security Administration  
Pantex Site Office  
P.O. Box 30030  
Amarillo, TX 79120-0030

**Subject:** Response to Directions Transmitted Regarding HEPA Filters at Pantex

**Reference:** (1) DOE Memo to BWXT Pantex dated September 18, 2003 concerning  
HEPA filters 03-13393-NE  
(2) BWXT Pantex Letter dated September 26, 2003 replying to Reference (1)

Dear Mr. White:

A response to your memorandum of September 18, 2003 directing High Efficiency Particulate Air (HEPA) QA filter testing at the Filter Test Facility (FTF) and requesting information regarding the quality assurance steps undertaken for High-Efficiency Particulate Air (HEPA) filters at Pantex, was provided by Reference (2). This letter revises information provided under Question 1 of Reference (2) regarding Building 12-116.

**Question 1: Describe the existing Category 1 and Category 2 nuclear facilities where HEPA filters are used or relied on to perform a safety function in an accident situation or are designated as important to safety (i.e., safety class or safety significant equipment per DOE-STD-3009-94). Identify the number and facility where these are installed if any (e.g., 12-116).**

Answer:

There are no safety class or safety significant HEPA filters credited at Pantex.

HEPA filter systems at Pantex are used in numerous facilities including bays and cells. Since March 2001 (Attachment 2), the HEPA filters have been used, tested, and serviced as industrial grade (90-95%) without consideration to nuclear quality assurance. The presently installed systems do not meet the QA requirements for

Donald G. White  
September 30, 2003

confinement ventilation systems and none of the HEPA systems have undergone testing at the FTF at Oak Ridge. The latest versions (approved but not implemented) of the Safety Analysis Reports (SARs) do not credit any of the HEPA or HVAC systems as the confinement boundaries for accident mitigation.

The current 12-116 SAR documents that HEPA filters provide a defense in depth function. The 12-116 HEPA filters rely on in-place testing and maintenance as routine planned maintenance activities including recording the differential pressure across the filter quarterly. Section 2.4.17.3 of the Site SAR documents that HEPA filters in 12-116 are installed in the exhaust ducts of the ventilation and contaminated vacuum systems and the inlets to the ventilation system. These filters are over 99.7% efficient based on the Dioctyl phalate (DOP) test method. The purpose of the filters is to minimize the exhausting of plutonium or intaking of plutonium or uranium in the event of accidents either internal or external to 12-116.

Although HEPA filters are not credited with a safety class or safety significant function in the updated Authorization Basis documents, Chapter 2 of the Site SAR needs to be updated to be more consistent with the criteria of industrial grade HEPA filters. The downgrading of HEPA filters for 12-116 in Chapter 2 of the Site SAR will be incorporated in the next annual update of that document.

The downgrading of the HEPA filters is supported by the protection of the worker provided by the policy of sheltering-in-place as described in Question #2.

**Question #2: Identify the number of filters and associated facilities where any HEPA filtered ventilation systems exist for the protection of personnel who must shelter or continue operations in nuclear or non-nuclear facilities (including emergency operations centers) following an accident in a nearby nuclear facility. The BWXT response should consider HEPA filters utilized in Bays and Cells. For systems determined to be required for the protection of personnel and who must shelter or continue operations, evaluate cost and resources required to conduct 100 percent HEPA Filter QA testing at the FTF. Also, identify the existing Quality Assurance (QA) testing program at Pantex for HEPA filters used in these ventilation systems.**

Answer:

The attached list identifies about 160 industrial grade filters used in bays and cells and other facilities including the operations center, 12-130, and security stations, 12-126 and 12-75 to provide some measure that could reduce potential contamination to personnel in a "shelter-in-place" response. Shelter-in-place is controlled by emergency planning and was instituted to reduce potential contamination to employees. The shelter-in-place actions include securing ventilation in the building. This step would preclude the use of HEPA filters as a

Donald G. White  
September 30, 2003

safety function or confinement system. Additionally, automatic shutdowns of the ventilation systems occur in case of a Radiation Alarm Monitoring System (RAMS) alarm. These filters may act to keep exposures ALARA if they continue to operate, but they are not relied upon during an emergency.

None of these filters are presently tested to the rigors of 100% HEPA filter QA testing at present. These systems are considered industrial grade. They have been used to maintain cleanliness and reduce dust to the work areas. Because the systems have not been maintained as safety class systems, the filter medium has been replaced in most cases with industrial grade filters, significantly less than 99.97% efficient, as DOE Standard 3020, *Specifications for HEPA Filters Used by DOE Contractors* would require. The media will have to be replaced and systems retested. Additionally, the system leakage may be unacceptable in most systems. Previous history indicates long-standing problems with maintaining leak-tightness. Expansion joints and ducting will have to be resealed, modified, and/or replaced to upgrade the systems to behave as regulated confinement systems for worker protection. With the installation of higher efficiencies in filter housings, the fans will have to be adjusted or replaced to accommodate the additional head loss associated with higher efficiencies of the filters. A cost estimate for this case has been performed for a typical system refurbishment. Each system, depending on the extent of degradation will cost approximately \$28,000. This does not include the cost of establishing an FTF testing program.

Specifically, the HEPA filters in 12-130, 12-126, and 12-75 in light of the new interpretation of habitability, will have to be upgraded and inserted in a QA FTF testing program. It is our intention to develop this program and further details of a plan and cost estimate will be submitted by October 20, 2003.

**Question #3: For all other applications where HEPA filters are used in ventilation systems for the control of radioactive airborne particulate, describe the tailored filter QA testing program if it exists. It doesn't exist, evaluate the cost to develop and document a program for implementation that achieves a high degree of fitness for service. The program should include the testing of a sample of filters at the FTF. The size of the sample to be tested should be large enough to provide sufficient statistical confidence to assure the required level of performance.**

Answer:

The only other application of HEPA filters to consider are in the environmental compliance area; specifically Building 16-10. This filter complies with the commitments made in the safety basis document (December 2001). The filter has been tested annually per TP-MN-00845 in place, and reliance of filter integrity is placed on the manufacturers QA program.

Donald G. White  
September 30, 2003

**Question #4: Describe the graded formal self-assessment program to evaluate the above QA protocols and procedures on a periodic basis or evaluate the cost associated with developing one.**

Answer:

Because the filters have not been categorized or treated as nuclear grade quality tested installations, there is not a program addressing these issues. If it is concluded that one such program must be implemented, appropriate roles and responsibilities will have to be established with procedural controls and budgets. In the interest of rapidly responding to this request, we have not as yet laid out an estimate of this type of program that would be compliant with DOE Standards and requirements.

If the decision is made to go forward with this work, we will have to assemble a team and an implementation plan will be required to undertake a HEPA filter-testing program. These efforts have not as yet been started and await further direction.

If you have any questions, please contact Joe Papp at 477-7259.

Very truly yours,



Carl R. Durham  
Engineering Division Manager

lab

Attachments:

1. HEPA Filter Location Table
2. Letter – C. J. Moore to Don Brunell dated 3-22-01

copies:

Cherri Moore, 12-5G  
104A Mike Knight, 12-122  
Don Brunell, 12-36A  
Steve Erhart, 12-36A

Jeff Yarborough, 12-6F  
Forrest McLaughlin, 12-130B  
Terry Zimmerman, 12-36A  
Bob Layton, 12-5D

Les Gipson, 12-  
Jim Elfelt, 12-6F  
Jeff Tedrow, 12-36A  
Joe Papp, 12-5D

ENG-03-20095-970-ENG

Donald G. White  
September 30, 2003

**Attachment 1  
HEPA Filter Location**

<b>Building</b>	<b>Cells or Bays</b>	<b>Number of Filters</b>	<b>Function</b>
12-44	2-6,8	10	Make-up & Return
12-63	3	1	Filter
12-84	1-20	40	Make-up & Return
12-85	1	4	Make-up & Return
12-86	1-12	2	Make-up & Return
12-94	1	4	Make-up & Return
12-96	1	2	Make-up & Return
12-98	1-4	16	Make-up & Return
12-99	1-9	18	Make-up & Return
12-104	1-16	34	Make-up & Return
12-104A	17-19	6	Make-up & Return
12-121		1	HVA
12-122		3	Make-up & Return
12-116		15	Make-up & Return
12-42		2	Make-up & Return
12-130		1	HVA
16-16		1	Filter
16-18		1	HVA
12-75A		1	HVA
12-26		1	HVA
12-126		1	Supply
12-42		1	HVA
<b>Total</b>		<b>165</b>	

# BWXT Pantex

P.O. Box 30020 Amarillo, Texas 79120 806/477-3000

---

MAR 22 2001

Mr. D. C. Brunell, Staff Manager  
for Authorization Basis Staff  
U. S. Department of Energy  
Amarillo Area Office  
Amarillo, Texas

Re: Department of Energy (DOE) Protocols and Procedures Concerning 100 Percent Quality Assurance (QA) Testing of High Efficiency Particulate Air (HEPA) Filters at the DOE Filter Test Facility (FTF)

Dear Mr. Brunell:

BWXT Pantex was asked to comment on the referenced document by the E-mail of March 5, 2001, from J. Conti (DOE/AAO) to C. Durham (BWXT Pantex).

Attachment A is a point paper on the rationale for continuing the practice at Pantex of not sending HEPA filters to an FTF because the HEPA filters in nuclear facilities at Pantex are not classified as safety class or safety significant and do not warrant the extra costs involved in using an FTF after manufacturer certifications.

Attachment B is a DOE comment and resolution sheet that recommends clarifying the first protocol in the reference to confine QA testing of HEPA filters at FTFs to only those that are used as safety class or safety significant components. HEPA filters used in non-nuclear facilities, such as Building 12-130 (Operations Center), and in weapons processes and radiological activities, such as glove boxes and clean rooms, are considered outside the intent of the protocols.

If you have any questions please contact Steve Young at extension 4434.

Sincerely,



C. J. Moore, Manager  
Infrastructure Division

lab

Attachments: As Stated

cc: C. R. Durham, BWXT, 12-6F  
A. G. Papp, NES, 12-101  
Steve Boone, NES, 12-101  
Art Spencer, Maintenance, 12-5

CJM01-1328-534

Attachment 2

ATTACHMENT A

**Quality Assurance Testing  
of  
HEPA Filters  
at  
DOE Filter Test Facility**

**Purpose:**

The purpose of this document is to evaluate the need for High Efficiency Particulate Air (HEPA) filters, which are installed in facility ventilation systems at the Pantex Plant, to be tested at the DOE Filter Test Facility (FTF).

**Discussion:**

HEPA filters in nuclear facilities in the Material Access Area (MAA) were classified in the Critical Safety System Manual (CSSM) as defense-in-depth items, not Safety Class or Safety Significant. Building 12-116 was not covered by the CSSM. The Technical Safety Requirements (TSRs), that replaced the CSSM and Building 12-116 TSR, also do not classify HEPA filters as Safety Class or Safety Significant. An E-mail of March 7, 2001, from L. L. Eppler states that HEPA filters are not credited in any Authorization Basis (AB) documents at Pantex.

The testing of HEPA filters in facility ventilation systems at Pantex complies with ASME N509 and N510. Task-PM-1593, *Cleaner Vacuum Asbestos*, is used for the testing, which basically consists of checks of pressure drops across the filters and an annual leakage DOP (dioctylphthalate) test.

DNFSE/Tech-23, *HEPA Filters Used in the Department of Energy's Hazardous Facilities*, issued in May 1999 by the Defense Nuclear Facilities Safety Board (DNFSB), states that confinement systems are expected to be documented in safety documents, such as TSRs. The TSRs at Pantex do not identify facility ventilation systems as confinement systems.

The DOE draft reply to DNFSB concerning action items associated with DNFSB/Tech-23 contains protocols and procedures that address confinement ventilation systems. TSRs at Pantex do not address facility ventilation systems. Therefore, these protocols/procedures are not applicable to Pantex.



**Conclusions:**

The DOE draft protocols and procedures do not apply to facility ventilation systems at Pantex because such systems are neither Safety Class nor Safety Significant systems. Therefore, the use of the DOE FTF is not required for testing HEPA filters in facility ventilation systems at Pantex. However, the protocols and procedures should be clarified to address this exception.

The HEPA filters at Pantex are tested in place in accordance with ASME N509 and N510.

**Recommendation:**

Recommend to DOE that applicable protocols and procedures be clarified to exempt HEPA filters in non-Safety Class/Safety Significant systems from being sent to the DOE FTF.

**ATTACHMENT B**

COMMENT AND RESOLUTION SHEET

1. Document Title Department of Energy Protocols and Procedures Concerning 100 Percent Quality Assurance Testing of HEPA Filters at The DOE Filter Test Facility	2. Document Number Draft for FMC Review Only	3. Document Date NA Draft	4. Date Comments Sent 3/9/01
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5. Commenting Individual (Office/Name/Signature) DMXT/Engineering/ Nuclear Explosive Safety Department/ Steve Boone	6. Phone 806/477-4420	7. Resolution By (Office/Name)	8. Phone
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Index			12. Type*	13. Comment, Suggested Solution	14. Resolution of Comment
9. Number	10. Page	11. Section/ Paragraph			
		(1) protocol / procedure	S	Comment: Revise the first protocol to limit its scope to conduct 100 percent QA testing at FTF of HEPA filters that are designated as Safety Class or Safety Significant equipment in Category 1, 2 and 3 Nuclear Facilities. Basis: 1) Safety Class/Significant is a unique designation defining equipment importance to facility safety which in and of itself warrants 100 percent QA testing at an FTF of HEPAs. 2) Category 3 Nuclear Facilities can have Safety Significant equipment/filters. 3) The discussion/direction on confinement ventilation systems is duplicated in the third protocol, breaking the discussion into distinct protocols supports more consistent implementation of the guidance.	

Type - Essential or Suggested (E or S)	Use additional sheets as necessary	15. Sheet <u>1</u> of <u>1</u>
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Department of Energy  
National Nuclear Security Administration  
Livermore Site Office  
PO Box 808, L-293  
7000 East Avenue  
Livermore, California 94551-0808



SEP 26 2003

MEMORANDUM FOR DR. EVERET H. BECKNER  
DEPUTY DIRECTOR FOR DEFENSE PROGRAMS

FROM:  CAMILLE YUAN-SOO HOO  
MANAGER

SUBJECT: NNSA Memorandum, Subject: "Action: High Efficiency Particulate Air (HEPA) Filters," dated September 12, 2003, from Everet H. Beckner

In response to the subject memorandum, the Livermore Site Office with the Assistance of Lawrence Livermore National Laboratory (LLNL) reviewed LLNL High Efficiency Particulate Arrestor (HEPA) filtered ventilation systems to identify "HEPA filtered ventilation systems for the protection of personnel who must shelter or continue operations in nuclear or non-nuclear facilities (including emergency operations centers) following an accident in a nearby nuclear facility." The review concluded that no habitability-related HEPA filters exist at LLNL.

LLNL reviews have however recognized the need for its Emergency Operations Center (EOC) to have a HEPA filtered habitability system. Proposed improvements to the EOC include a HEPA Filtered habitability system for which FY 2004 funding is requested. Interim protective measures include the identification of two alternate EOC locations on site and a facility based "Shelter-In-Place" program that includes the disabling of unfiltered air intake systems during airborne release incidents.

Please contact Mr. Ed Ballard at (925) 423-3030 if further clarification is necessary.

Dr. Everett H. Beckner

2

bcc:

Phil Hill, DMSEP

Rich Mortensen, DMNSO

Ralph Kopenhaver, LSO

Sarah Spagnolo, Acting AM LSOD

Lois Marik, LSOD

Harvey Grasso, LSOD

Shaun Kesterson, LSOD

Ed Ballard, LSOD

LSO Rdg. File

LSOD Rdg. File



**Department of Energy**  
 National Nuclear Security Administration  
 Nevada Site Office  
 P.O. Box 98518  
 Las Vegas, NV 89193-8518  
 SEP 30 2003

Everet H. Beckner, Deputy Administrator for Defense Programs, NNSA/HQ (NA-10) FORS

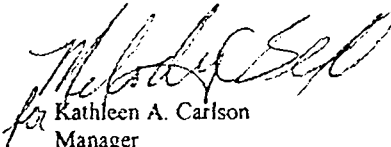
**RESPONSE TO INFORMATION REQUEST ON HIGH EFFICIENCY PARTICULATE AIR (HEPA) FILTERS AT NTS NUCLEAR FACILITIES**

References: (1) Memo, Beckner to Distribution, dtd 9/12/2003  
 (2) Ltr, Conway to Abraham, dtd 8/14/2003

The first above referenced memorandum (Attachment A) directs National Nuclear Security Administration (NNSA) site offices to prepare a report that responds to the second referenced letter's (Attachment B) request for HEPA filter data. Specifically, it was requested that sites identify whether any HEPA filtered ventilation system exists for the protection of personnel who must shelter or continue operations in nuclear and nonnuclear facilities (including emergency operations centers) following an accident in a nearby nuclear facility. Additionally, for those facilities where such ventilation systems exist, identify the quality assurance testing program for the HEPA filters used in those ventilation systems.

Based on our survey of NTS nuclear facilities and emergency operations programs, there is no NTS facility that currently has HEPA filtered ventilation systems used for the protection of personnel who must shelter in place following an accident in a nearby nuclear facility.

If you have any questions, please call me at (702) 295-3211 or my point of contacts: J. Nolan Bailey, 702-295-4601; James O. Low, 702-295-0975.

  
 Kathleen A. Carlson  
 Manager

PAD:JOL-3040  
 ENV 02-02

Attachments:  
 As stated

cc w/atchs:  
 A. J. Dionizio, BN, Mercury, NV  
 D. J. Kelly, LLNL, M/S 777, Mercury, NV  
 R. S. Ziegenbein, LANL, M/S 900, Mercury, NV

bcc w/atchs:

C. P. Gertz, AMEM, NNSA/NSO, Las Vegas, NV  
T. A. Lachman, EMD, NNSA/NSO, Las Vegas, NV  
S. J. Lawrence, DAMTS, NNSA/NSO, Las Vegas, NV  
T. J. McEvoy, DAMNS, NNSA/NSO, Las Vegas, NV  
S. A. Mellington, DAMEM, NNSA/NSO, Las Vegas, NV  
D. D. Monette, AMNS, NNSA/NSO, Las Vegas, NV  
L. M. Tomlinson, STD, NNSA/NSO, Las Vegas, NV  
T. L. Wallace, AMTS, NNSA/NSO, Las Vegas, NV




**Department of Energy**  
**National Nuclear Security Administration**  
 Washington, DC 20585

September 12, 2003

MEMORANDUM FOR MANAGER, SANDIA SITE OFFICE  
 MANAGER, KANSAS CITY SITE OFFICE  
 MANAGER, PANTEX SITE OFFICE  
 MANAGER, LIVERMORE SITE OFFICE  
 MANAGER, NEVADA SITE OFFICE  
 MANAGER, Y-12 SITE OFFICE  
 MANAGER, SAVANNAH RIVER SITE OFFICE  
 MANAGER, LOS ALAMOS SITE OFFICE

FROM:

Everet H. Beckner   
 Deputy Administrator  
 for Defense Programs

SUBJECT:

**ACTION: HIGH EFFICIENCY PARTICULATE AIR  
 (HEPA) FILTERS**

On July 11, 2003, the Secretary of Energy provided the Defense Nuclear Facilities Safety Board (Board) with a status report on measures related to High-Efficiency Particulate Air (HEPA) filters. On August 14, 2003, the Board requested "... a clarification of the EM and NNSA responses for habitability-related HEPA filters within the next 60 days. For each EM and NNSA site, please identify whether any HEPA filtered ventilation systems exist for the protection of personnel who must shelter or continue operations in nuclear or non-nuclear facilities (including emergency operations centers) following an accident in a nearby nuclear facility. For those sites where such ventilation systems exist, please identify the QA testing program for HEPA filters used in those ventilation systems."

Please provide a report for your site that responds to the Board's August 14, 2003, request. The National Nuclear Security Administration's response to the August 14, 2003, letter will be a single letter forwarding your site letters. Please provide your site responses by September 30, 2003, to allow timely review and routing of the final package prior to the October 14, 2003, deadline

Please have your lead contact Xavier Ascanio at (301) 903-9408 or Jeff Underwood at (301) 903-8303 to resolve any questions you may have.

ACTION	<u>PAD</u>
INFO	<u>STD 2/24/2002</u>
REQ MGR	<u>K</u>
SCISS	<u>_____</u>
OFFM	<u>_____</u>
AMTS	<u>K</u>
AMNS	<u>K</u>
AMEM	<u>_____</u>





John T. Conway, Chairman  
A.J. Eggenberger, Vice Chairman  
John E. Mansfield  
R. Bruce Matthews

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

625 Indiana Avenue, NW, Suite 700, Washington, D.C. 20004-2901  
(202) 694-7000



August 14, 2003

The Honorable Spencer Abraham  
Secretary of Energy  
1000 Independence Avenue, SW  
Washington, DC 20585-1000

Dear Secretary Abraham:

The Defense Nuclear Facilities Safety Board (Board) has received your letter dated July 11, 2003, enclosing the Department of Energy's (DOE) response to the Board's January 9, 2003, letter concerning testing of High-Efficiency Particulate Air (HEPA) filters. The Board has reviewed the response and is pleased to note your continued commitment to performing 100 percent testing at the Filter Testing Facility (FTF) of HEPA filters that will be used in safety-related applications.

However, the Board notes that, contrary to your previous direction, 11 percent of the HEPA filters recently installed in safety-significant systems in facilities at the Savannah River Site (SRS) did not go through the FTF. This situation is of particular concern considering that the FTF annually rejects for physical and performance-related defects a significant number of filters that have already passed the vendor's tests and inspections. While the majority of these defects are discovered by visual inspection, many defects are related to inadequate filter performance (e.g., failure to meet penetration and/or resistance requirements) and cannot be detected consistently and reliably by means of in-place testing.

While the in-place testing performed on site for newly installed and regularly maintained HEPA filters is necessary for ensuring general system leak-tightness, inherent limitations prevent use of such testing as a substitute for that performed at the FTF and by the vendors. Sample point location, flow rate, flow distribution, and particle size are but a few examples of test conditions that cannot be simulated or produced in the field to the degree of accuracy achieved at the FTF. Thus without FTF testing, defective filters may pass in-place testing and remain installed in safety systems—an unacceptable situation. Accordingly, the Board would like to be briefed by the Assistant Secretary, Environment, Safety and Health within the next 30 days on how DOE is assured that currently installed filters not tested at the FTF can adequately perform their safety function.

Your June 4, 2001, letter concerning HEPA filters requires 100 percent quality assurance (QA) testing at the FTF for habitability HEPA filters, "e.g., filters that protect workers who must not evacuate in emergency situations because of the necessity to shut down or control the situation." Your letter of July 11, 2003, however, notes that no such filters exist for any of the Environmental Management (EM) sites surveyed. The letter also notes that no such filters exist

at the Device Assembly Facility, the Pantex Plant, the Kansas City Plant, or the SRS Tritium Facilities. The response of the National Nuclear Security Administration (NNSA) for Lawrence Livermore National Laboratory, Los Alamos National Laboratory, and the Oak Ridge Y-12 Facility contains generic discussion of the site policy for HEPA filter testing at those sites, but does not specifically note whether habitability-related HEPA filters exist at those sites. The Board would appreciate a clarification of the EM and NNSA responses for habitability-related HEPA filters within the next 60 days. For each EM and NNSA site, please identify whether any HEPA-filtered ventilation systems exist for the protection of personnel who must shelter or continue operations in nuclear or non-nuclear facilities (including emergency operations centers) following an accident in a nearby nuclear facility. For those sites where such ventilation systems exist, please identify the QA testing program for HEPA filters used in those ventilation systems.

The Board also notes that DOE plans to fund the FTF only through 2005. As offered in your letter of July 11, 2003, the Board would like to be informed of DOE's plans for HEPA filter testing prior to any changes in HEPA filter testing protocols, including deactivation of the FTF.

Sincerely,

  
John T. Conway  
Chairman

c: The Honorable Linton Brooks  
The Honorable Jessie Hill Roberson  
The Honorable Beverly Ann Cook  
Mr. Jeffrey M. Allison  
Mr. Mark B. Whitaker, Jr.

United States Government

Department of Energy  
National Nuclear Security Administration

# memorandum

DATE: September 29, 2003

REPLY TO:

ATTN OF: Y12-50:Rhyne

SUBJECT: TESTING OF HIGH-EFFICIENCY PARTICULATE AIR (HEPA) FILTERS

TO: Dr. Everet H. Beckner, Administrator for Defense, NA-1, FORS

In its letter of August 14, 2003, the Defense Nuclear Facilities Safety Board (DNFSB) requested to be informed if the Y-12 National Security Complex (NSC) has HEPA filtered ventilation systems for the protection of personnel who must shelter or continue operations in nuclear or non-nuclear facilities (including the Emergency Operations Center) following an accident in a nearby nuclear facility. The DNFSB letter additionally requested that for sites where habitability ventilation systems exist that the QA testing program for HEPA filters in these systems be identified.

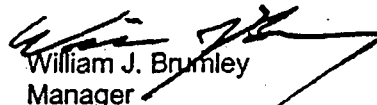
No facilities at the Y-12 NSC have areas where personnel must shelter for the purpose of continuing operations, and the Y-12 NSC does not have HEPA filters for the protection of personnel who must shelter in place following an event. However, a prototype system is in place for testing purposes and another will soon be in place that may provide certain staff with limited protection against some hazardous materials generated as part of a malevolent act. These systems are HEPA filtered, but are not presently relied upon for personnel protection during a shelter in place. The systems were built and supplied by an outside source, thus the filters were not tested at the Filter Test Facility. The Y-12 NSC Technical Support Center (TSC) does not have an accredited intake ventilation system, and will not support habitability under emergency scenarios. However, the Emergency Operations Center (EOC) does have intake HEPA filtration to support habitability in an emergency situation.

The EOC is located offsite in building K-1650 of the East Tennessee Technology Park (ETTP; former K-25 site). The purpose of the EOC is to allow the Y-12 NSC crisis management organization to evaluate, coordinate, and manage an emergency response, including communications with offsite response organizations and personnel. The HEPA filters supporting this facility were installed in 1993 following a successful test at the Filter Test Facility. They were in-place acceptance tested after installation, and were in-service tested annually until 1998. Preparations are underway to replace these filters in the last quarter of calendar year 2003. Presently, services to building K-1650 are provided by a subcontractor at the ETTP. A transition plan is being developed to transfer full responsibility (security, utilities, maintenance, testing, etc.) for this facility to BWXT Y-12. It should be noted that it is unlikely that an adverse event at Y-12 will affect building K-1650, and additionally unlikely, that a concurrent event at ETTP will occur while the EOC is staffed for a Y-12 event.

September 29, 2003

Through Standards/Requirements Identification Documents (S/RIDs), BWXT Y-12 is contractually required to meet the requirements of DOE-STD-3020-97, *Specifications for HEPA Filters Used By DOE Contractors*. Section 6.2 of this Standard requires HEPAs to be tested at a Filter Test Facility (FTF) before installation. The HEPA filters at the building K-1650 EOC, which at the present time are the only filters in place to protect personnel who must evaluate Y-12 NSC operations (albeit from a remote location), will continue to meet this requirement while the ETPP FTF is available. Additionally, BWXT Y-12 in-service testing requirements, which are documented in plant procedures, will be applied to these filters following transition of the facility. Lastly, should a decision be made to develop habitability systems based on the prototype systems discussed above, initial testing and in-service testing requirements will become applicable.

Please direct any questions to Ken Rhyme at (865) 576-9901 or Rick Swatzel at (865) 241-6446.

  
William J. Brumley  
Manager  
Y-12 Site Office

cc:

J. Underwood, NA-124, GTN  
X. Ascanio, NA-124, GTN  
J. Crociata, BWXT Y-12, MS 8213  
R. Phillips, 9733-1, MS 8029, BWXT Y-12  
R. Hamby, 9733-1, MS 8029, BWXT Y-12  
D. F. Owen, 9704-2 MS 8017, DNFSS  
S. L. Daly, Y12-20, YSO  
D. K. Hoag, Y12-30, YSO  
K. D. Ivey, Y12-40, YSOI  
J. R. Martin, Y12-10, YSO  
T. D. Sherry, Y12-01, YSO

United States GovernmentNational Nuclear Security Administration (NNSA)  
Savannah River Site Office (SRSO)

# Memorandum

DATE: SEP 23 2003

REPLY TO:  
ATTN OF: SV (McAlhany, 803-208-1750)

SUBJECT: High Efficiency Particulate Air (HEPA) Filters

TO: Everet H. Beckner, Deputy Administrator for Defense Programs (NA-10) HQ

Your letter of September 12, 2003, requested each site to provide a response to you relative to the Defense Nuclear Facilities Safety Board's letter of August 14, 2003, concerning HEPA filters. The SRSO has no HEPA filtered ventilation systems installed for any habitability areas or process systems under our cognizance. Once the Tritium Extraction Facility is operational in 2007, HEPA filters will be used in the area associated with the extraction furnaces. These filters will be installed and tested in accordance with prescribed requirements.

If you have any questions or comments, please contact me at (803) 208-3689.

*Original Signed by*  
*Edwin L. Wilmot*  
Edwin L. Wilmot  
Manager

SV:BKM:mp

RB-03-0116

cc : X. Ascanio, NA-124  
J. Underwood, NA-124

bc: SV Reading File  
SV Files

United States Government

Department of Energy

National Nuclear Security Administration

Los Alamos Site Office

Los Alamos, New Mexico 87544

# memorandum

DATE: SEP 29 2003  
REPLY TO: OFO:1DB-009  
ATTN OF: OFO:1DB-009  
SUBJECT: HEPA Filtration at Facilities

TO: Jefferson Underwood, Office of Operations and Readiness, NA-124, HQ/GTN


Referencing memorandum dated April 11, 2003; by the Acting Chief Operating Officer (Tyler Przybylek) and the Deputy Administrator for Defense Programs (Dr. Beckner) requested each Site Office provide a status on HEPA filter commitments made by DOE in response to Defense Nuclear Facilities Safety Board (DNFSB) concerns. The NNSA Site Offices have provided their responses to the Dr. Beckner memo and these responses were formally transmitted to the DNFSB. However, this memorandum provides clarification on the responses as listed in question 2 of that original memo as follows:

*"(2) Conduct 100 % QA testing at the FTF of HEPA filters necessary for habitability systems, e.g., filters that protect workers who must not evacuate in emergency situations because of the necessity to shutdown or control the situation. Your statement should identify those filter systems that are determined to be needed for habitability. Please include references to implementing procedures that establish this commitment at your site or facility."*

Our review and clarification of this concern found that:

1. The New Emergency Operations Center (ECC) and TA-55 have HEPA filtration systems.
2. In addition, the CAS/SAS system and TA-3-44 have air intakes, which are designed for habitability as specified in DOE G 151.1.

If there are any questions regarding this memorandum, please contact Dave Barber of my staff at (505) 667-3818.

  
Ralph E. Erickson  
Manager

# memorandum

DATE: OCT 07 2003  
REPLY TO: OFO:1DB-010  
ATTN OF: OFO:1DB-010  
SUBJECT: HEPA Filtration at Facilities - Update

TO: Everet H. Beckner, Deputy Administrator for Defense Programs, NA-10, HQ/FORS

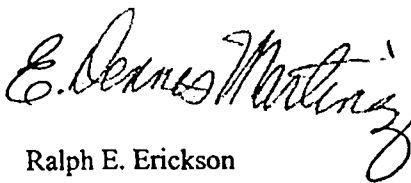
Reference:

Memorandum OFO:1DB-009, R. Erickson, LASO, to J. Underwood, NA-124,  
Subject: HEPA Filtration at Facilities, dated September 29, 2003.

The following information is to update the referenced memorandum:

- 1 There is no requirement for testing of HEPA filter systems at LANL.
- 2 LANL conducts 100% filter testing on HEPA filters for habitability. In addition, nuclear facilities test their filters on a routinely as per their authorization basis. TA-55 conducts internal subsequent testing after the initial tests. TA-3-44 and the new EOC have HEPA filters that are tested annually. The commitment is through DOE G 15 1. 1. LANL follows the minimum requirements for the institute for Environmental Sciences and Technology ("IEST-RP-CCOO1.3 and ULPA Filters".) The Laboratory has not established a policy or procedure for tailored quality testing.
- 3 CAS/SAS is Central Alarm Station and Security Alarm System.

If there are any questions regarding this memorandum, please contact Dave Barber of my staff at (505) 667-3818.

  
for: Ralph E. Erickson  
Manager

John T. Conway, Chairman  
 A.J. Eggenberger, Vice Chairman  
 John E. Mansfield  
 R. Bruce Matthews

## DEFENSE NUCLEAR FACILITIES SAFETY BOARD

625 Indiana Avenue, NW, Suite 700, Washington, D.C. 20004-2901  
 (202) 694-7000



August 14, 2003

The Honorable Spencer Abraham  
 Secretary of Energy  
 1000 Independence Avenue, SW  
 Washington, DC 20585-1000

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 311



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Sincerely,

  
John T. Conway  
Chairman

c: The Honorable Linton Brooks  
The Honorable Jessie Hill Roberson  
The Honorable Beverly Ann Cook  
Mr. Jeffrey M. Allison  
Mr. Mark B. Whitaker, Jr.