

226

RECORD #226

TITLE: Intent of the Q.A. Testing of Respirator HEPA Filters, as  
Discussed in NUREG 0041.

FICHE:



UNITED STATES  
NUCLEAR REGULATORY COMMISSION  
WASHINGTON, D. C. 20555

February 27, 1990

Ms. Sandra K. Herweyer  
Applications Engineer  
Industrial Test Instruments Group  
TSI Incorporated  
500 Cardigan Road  
P. O. Box 64394  
St. Paul, Minnesota 55164

Dear Ms. Herweyer:

I am responding to your letter of August 16, 1989, in which you asked me to confirm that the intent of the Quality Assurance Testing of respirator high efficiency particulate (HEPA) filters, discussed in NUREG 0041, is that they are tested to meet the NIOSH certification protocols. This is not the case. The NRC does not require the recertification of HEPA filters prior to use.

10 CFR 20.103(c) requires that "when respirator protective equipment is used to limit the inhalation of airborne radioactive material... the licensee shall use equipment that is certified or had certification extended by... NIOSH/MSHA." This position is echoed in Appendix A footnote (b) to 10 CFR 20 which indicates that the protection factors listed for air-purifying respirators are valid only when used with "high efficiency particulate filters (above 99.97% removal efficiency by thermally generated 0.3  $\mu$ m dioctyl phthalate (DOP) test)." Use of non HEPA filters would be outside the NIOSH/MSHA certification.

As you know, respirator filter manufacturers have quality assurance (QA) and quality control (QC) programs approved by NIOSH to ensure that their HEPA filters or cartridges meet the certification criteria which are referred to in our Appendix A footnote. The QA program discussed in NUREG 0041 is provided to assure that this certification has not been voided by deterioration or damage. Aerosol penetration testing of filters prior to their reuse is necessary to detect damage, incurred by prior use, that may not be evident with a visual or pressure drop test.

In 1983, responding to a question regarding the acceptance criteria for filter QA testing by our licensees, the NRC Office of Research took the position that respirator filters had to be tested with a 0.3 micron, thermally generated DOP aerosol. This defaulting to the HEPA filter certification criteria was a conservative position taken due to a lack of data on other test methods. Since that time, however, filter testing protocols with other aerosol media and/or generating techniques have been shown to provide adequate sensitivity to detect damage to a filter which would void its HEPA characteristics. Therefore, it is our current position that aerosol penetration testing of filters or canisters

by our licensees should be performed with a testing protocol that is capable of detecting significant filter damage or deterioration. It is unnecessary, nor is it required, to recertify the filter as HEPA prior to each use.

Sincerely,

Original signed by

LeMoine J. Cunningham, Chief  
Radiation Protection Branch  
Division of Radiation Protection and  
Emergency Preparedness  
Office of Nuclear Reactor Regulation  
U. S. Nuclear Regulatory Commission

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UNITED STATES  
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WASHINGTON, D. C. 20555

February 23, 1990

MEMORANDUM FOR: James H. Sniezek, Deputy Director  
Office of Nuclear Reactor Regulation

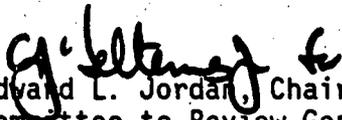
FROM: Edward L. Jordan, Chairman  
Committee to Review Generic Requirements

SUBJECT: CRGR REVIEW OF STAFF POSITION ON RESPIRATOR  
HEPA FILTER RETESTING

This is in response to your memorandum dated December 22, 1989, same subject, transmitting a draft letter to a respirator HEPA filter vendor (TSI) containing a proposed new staff position on HEPA filter retest requirements. NRR's view is that this item is of little safety significance; and the new position will provide relief to licensees from previous guidance that is now recognized as needlessly conservative.

After review by the CRGR staff and consideration by the Committee on a negative consent basis, I agree that this item does not require further formal review by the CRGR. On the basis of the CRGR staff interaction with the cognizant NRR staff on this item, I understand that the new staff position will be brought to the attention of other interested parties outside NRC first by placing a copy of the letter to TSI in the public document room and, subsequently, by incorporating the new position into a planned revision to existing generic guidance in this area.

If there are any questions regarding the disposition of this item by the CRGR, please contact me or Jim Conran of my staff (X29855).

  
Edward L. Jordan, Chairman  
Committee to Review Generic  
Requirements

cc: J. Taylor, EDO  
L. Cunningham, NRR

DEC 22 1983

MEMORANDUM FOR: Edward L. Jordan, Chairman  
 Committee to Review Generic Requirements

FROM: James H. Sniezek, Deputy Director  
 Office of Nuclear Reactor Regulation

SUBJECT: CRGR REVIEW OF STAFF POSITION ON RESPIRATOR HEPA FILTER  
 RETESTING

Quality assurance of high efficiency particulate (HEPA) filters used with respiratory protection equipment is addressed in NUREG 0041 "Manual of Respiratory Protection Against Airborne Radioactive Materials." This guidance does not, however, specify an appropriate aerosol penetration testing methodology. Recently we have received a request from a filter test equipment vendor (TSI) to clarify our position on filter testing methods.

The current HEPA filter testing position expressed in our response letter is contrary to a position taken by the Office of Research in an August 22, 1983 memo to Region I. Although this RES position was expressed in an internal memo, it has been quoted in the industry literature and has been accepted as the NRC's position. Our current position has been coordinated with, and concurred in by, RES. The confusion regarding QA testing of HEPA filters is one of the issues identified for correction in the revision to NUREG 0041 currently being prepared. However, the response to TSI is the first time this staff position has been documented and may be viewed as a change in position by our licensees.

While this response may constitute a change of staff position, we do not believe this issue constitutes a significant safety concern nor does it have a significant impact on licensees that would warrant formal CRGR review. However, I have enclosed the response letter and background materials for your consideration. Your comments will be appreciated.

Original signed by  
 James H. Sniezek

James H. Sniezek, Deputy Director  
 Office of Nuclear Reactor Regulation

Enclosure:  
 Response ltr and background materials

CONTACT: R. Pedersen, NRR  
 x21079

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