

3M Occupational Health and
Environmental Safety Division

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St. Paul, MN 55144-1000
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07-08-09A07:43 RCVD

July 1, 2009

NIOSH Docket Officer
NIOSH Docket #005
Robert A. Taft Laboratories MS-C34
4676 Columbia Parkway
Cincinnati, OH 45226
NIOCINDOCKET@CDC.GOV

RE: RIN:0920-AA10, 42 CFR 84, approval Tests and Standards for Closed-Circuit Respirators; Notice of Proposed Rulemaking – NIOSH Docket #005

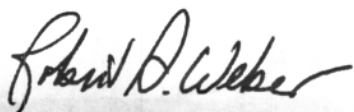
Dear Docket Officer:

3M Company (**3M**), through its Occupational Health and Environmental Safety (OH&ES) Division, is a major manufacturer and supplier of respiratory protective devices throughout the world and is very interested in commenting on the above mentioned proposed rule. 3M has invented, developed, manufactured, and sold approved respirators since 1972. 3M employs experienced engineers and technical professionals for the development of respirators. Our sales people have trained and fit tested hundreds of thousands of respirator wearers throughout the world. Our technical staff has performed basic research on the performance of respirators and their uses, presented and published these data in numerous forums and assisted customers with the development and administration of effective respirator programs. In sum, we have substantial experience in all phases and applications of respiratory protection. We are pleased to provide the National Institute for Occupational Health and Safety (NIOSH) with our comments on the proposed rule for Approval Tests and Standards for Closed-Circuit Respirators.

3M appreciates the opportunity to add our comments and knowledge to docket 005.

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Sincerely,

A handwritten signature in black ink, appearing to read "Robert A. Weber". The signature is written in a cursive style with a large initial "R".

Robert A. Weber
Laboratory Manager, Regulatory Affairs
3M Occupational Health & Environmental Safety Division

3M comments on 42 CFR 84, approval Tests and Standards for Closed-Circuit Respirators; Notice of Proposed Rulemaking – NIOSH Docket #005

The following comments are in response to the above mentioned proposed rule on closed-circuit escape respirators (CCER). Our comments address two requirements listed in the December 10, 2008 *Federal Register*.

84.304 Capacity Test Requirements

This paragraph describes capacity tests for the volume of oxygen stored in the units and allows for three sizes or capacities, designated as Caps 1, 2, or 3. We concur with NIOSH's position of not requiring a specified time duration or volume for each of the three sizes due to the numerous variables encountered in workplace use conditions that can affect how long one of these units will last. We suggest, however, that NIOSH consider capacity designations other than Cap 1, 2 or 3 for these units since these terms are already used in describing NIOSH certified CBRN canisters with varying capacities. Using the same terms for different purposes will at minimum cause confusion and at worst could result in respirator misuse or improper selection, which could have grave consequences.

84.307 Environmental Treatments

In this section NIOSH proposes the CCER be subjected to specific environmental treatments that cover storage temperature, shock, and vibration. NIOSH indicates that the purpose of these tests is to ensure that the unit is "reasonably" durable. The vibration test proposed is, according to NIOSH, a composite test based on vibration levels. The proposal relies on a Bureau of Mines report that identified five different vibration profiles based on the authors' analysis of mine conditions. The "composite" puts three vibration profiles into one test. We believe this proposed test is not appropriate for CCER products because its rigorous test conditions may cause manufacturers to design CCERs that are more complex and bulky than actual use conditions require in order to pass this test. The result could be CCERs that are not wearable, ready to deploy escape devices.

In addition to the effects the test might have on product design, there is the challenge of finding test equipment or test laboratories that can perform this test. Several test laboratories have indicated that the composite test takes in such a wide profile (frequency and displacement) there are very few places in the United States commercially available and capable of conducting this test.

Finally, the proposed test procedures are incomplete. There are critical testing details that were not included such as: test time; that the vibration profile is sinusoidal; cycle sweep time; the actual vibration profile (frequency vs. displacement); and how it should be mounted (in packaging, vibration isolation mounting, etc.).

We recommend that the vibration protocol should be tailored to CCERs and be performed on test equipment that can be obtained by or is readily available to respirator manufacturers, uses a realistic vibration exposure and with the relevant test details specified. In addition, because NIOSH indicated in the background section to the proposed rule that CCERs are commonly worn on workers' belts or stored in close proximity to be accessible in an emergency and because of the inadequacies of the "composite" proposal, we suggest that NIOSH consider adopting the test from the 1981 Bureau of Mines report, "Environmental Test Criteria for the Acceptability of Mine Instrumentation" using the vibration profile (Procedure I) for personal/portable/wall mounted equipment.