

**Miller, Diane M. (CDC/NIOSH/EID)**

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**From:** cecolton@mmm.com  
**Sent:** Thursday, January 15, 2009 5:39 PM  
**To:** NIOSH Docket Office (CDC)  
**Cc:** Szalajda, Jonathan V. (CDC/NIOSH/NPPTL)  
**Subject:** Docket #148 – Air-Fed Suit

**Attachments:** Written comments for Supplied Air Suits Jan 15 2009.pdf



Written comments  
for Supplied ...

Please find attached comments for the docket on air fed suits.

(See attached file: Written comments for Supplied Air Suits Jan 15 2009.pdf)

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January 15, 2009

NIOSH Docket Officer, REFERENCE: NIOSH DOCKET-148  
Robert A. Taft Laboratories MS-C34  
Docket #148 – Air-Fed Suit  
4676 Columbia Parkway  
Cincinnati, OH 45226  
[NIOCINDOCKET@CDC.GOV](mailto:NIOCINDOCKET@CDC.GOV).

**RE: Development Plan for Air-Fed Suit Respirator Performance  
Requirements NIOSH Docket 148**

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. 3M has invented, developed, manufactured and sold approved respirators since 1972. We have developed numerous training programs, videos, computer programs and technical literature to help our customers develop and run effective respirator programs. 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 participated in the development of the ANSI Z88 standards on respiratory protection. In sum, we have substantial experience in all phases and applications of respiratory protection. We are pleased to offer the following comments and recommendations regarding the Development Plan for Air-Fed Suit Respirator Performance Requirements.

3M supports NIOSH in its effort to develop updated standards for evaluating the effectiveness of supplied air suits for use in a variety of industrial environments.

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We appreciate the opportunity to add our comments and knowledge to the docket and look forward to the development of a protective and useful concept.

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

## Development Plan for Air-Fed Suit Respirator Performance Requirements NIOSH Docket 148

In evaluating the effectiveness of standards and test procedures for respiratory devices used to help protect workers in hazardous environments, NIOSH has initiated a program to update portions of Title 42 Code of Federal Regulations Part 84 (42 CFR Part 84) to promote improved performance and reliability of Air-Fed Suit Respirators. Because this program is in the early stages of development, agreeing on basic terminology describing these devices is appropriate. Clarity on proper terminology that accurately describes the respiratory protective devices will help reduce confusion in the workplace with respect to product selection and its potential applications.

NIOSH has previously stated that "Air-Fed suit respirators" are chemical protective suits with a breathable air supply that may or may not be independent of the ambient atmosphere. The suit may include:

1. an air purifying respirator (APR),
2. a powered air purifying respirator (PAPR),
3. a supplied air respirator (SAR), or
4. a self-contained breathing apparatus (SCBA).

3M submits that while the term air fed suit respirators has been utilized by other standard writing organizations, it is not the best descriptor and should not be adopted by NIOSH. Rather, we suggest that the name should reflect the type of respirator being incorporated into the system and that the overall system should be designated as "supplied-air suits."

In addition to being technically correct, it also uses the similar term from supplied air respirators which is a legally defined class of device. These suits are identical in operation to those of the respirators with the only difference being the respiratory inlet covering: a suit in the first case and a half or full facepiece or a loose fitting hood, helmet or facepiece in the latter case. This also makes technical and practical sense because the issues and limitations for selecting these devices will be similar except for the respiratory inlet covering.

Finally, the American Industrial Hygiene Association (AIHA) has used the term "supplied air suits" in its publications for years.<sup>1</sup> The term has also been used by Los Alamos National Laboratory for many years.

With respect to the proposed respiratory protective devices to be used with these suits, we do not believe it is acceptable to allow the use of an air purifying respirator due to the potential size of the respiratory inlet covering and potential sources of leakage on a negative pressure device.

A suit utilizing the PAPR could be called a "powered air-purifying suit." Again the similarities and parallelism between terms will greatly benefit the user.

The device using the SCBA should only apply to the SCBA known as the combination. The strict SCBA is nothing more than a level A suit with an SCBA. The combination device should be called a "combination SCBA/ supplied air suit," having similarities of the combination SCBA/supplied air respirator.

Essentially the NIOSH plan uses existing respirator designs with a new respiratory inlet covering: a full body suit. The goal for this plan states that this program will develop one respirator certification standard for "air fed suits. We respectfully disagree that there should only be one standard. We believe each subpart in 42 CFR 84 for the various devices should have requirements for use with a full body suit. This ensures that the approval number and hence selection limitations and restrictions correspond to the respiratory protective device and will better address the potential uses of these suits in atmospheres such as IDLH.

As stated above, we do not agree that all of the categories of respirators with suits proposed by NIOSH be included. However, following the original NIOSH plan, we recommend the following new terms for the proposed respiratory protective devices with full body suits:

1. an air purifying respirator with suit (approval TC-84A),
2. powered air purifying suit (approval under new subpart, today it would be either a 21C, 23C or 14G,)
3. a supplied air suit (approval TC-19C),or
4. a self-contained breathing apparatus with suit (approval 13F and would include combination supplied air suit/SCBA. This approval would clearly indicate there use for IDLH environments).

In essence, these are respirators with a chemical protective suit as the respiratory inlet covering.

## References

1. Colton C. E. and L. M. Brosseau, ed.: *Respiratory Protection: A Manual and Guideline* 3<sup>rd</sup> Edition. Fairfax, VA: American Industrial Hygiene Association 2001.