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From: cecolton@mmm.com
Sent: Monday, October 19, 2009 1:50 PM
To: NIOSH Docket Office (CDC)
Cc: Szalajda, Jonathan V. (CDC/NIOSH/NPPTL)
Subject: Docket #148A – Air-Fed Ensembles

Attachments: Written comments for AFEs Oct 19 2009.pdf

Written comments for AFEs Oct ...

(See attached file: Written comments for AFEs Oct 19 2009.pdf)

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October 19, 2009

NIOSH Docket Officer, REFERENCE: NIOSH DOCKET-148
Robert A. Taft Laboratories MS-C34
Docket #148A – Air-Fed Ensembles
4676 Columbia Parkway
Cincinnati, OH 45226
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RE: Proposed Concept: Air-Fed Ensembles (AFE) Standard. August 25, 2009, NIOSH Docket 148A

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 Proposed Concept: Air-Fed Ensembles (AFE) Standard.

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.

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,

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

Proposed Concept: Air-Fed Ensembles (AFE) Standard, August 25, 2009, NIOSH Docket 148A

General Comments

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 potential applications. While we have previously opined on this point, NIOSH is still using the same terminology as in the original document on this topic.

NIOSH states in the August 25, 2009 version of the concept that the air fed ensembles that are currently considered in this concept are either supplied air respirators (SAR), or powered air-purifying respirators (PAPR) where the respiratory protection is an integral part of the design, construction, and use of the ensemble.

3M submits that the term "air-fed" ensemble 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. In support of this position, it is noted that NIOSH itself describes the suit is an "integral part" of the construction. Similarly, respiratory inlet coverings such as hoods or helmets are also an integral part of the design, construction, and use of SARs and PAPRs. Moreover, even the presenters that were invited by NIOSH to attend the public meeting on September 17, 2009, referred to their devices as supplied air suits and not "air-fed". Finally, standards and respirator publications have referred to these devices as supplied air suits for years. NIOSH is also proposing in this concept that PAPRs would use suits which is even more reason why the suit should be considered as the respiratory inlet covering for the respiratory protective device.

In addition to being technically correct, supplied air respirator with suit or powered-air purifying respirators with suit use the similar term from "supplied air respirators" which is a legally defined class of devices. 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.

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 limitations for all PAPRs would apply to these devices as well.

NIOSH also talks about having a version of these systems approved for environments that are considered immediately dangerous to life or health (IDLH). This causes concern because the proposed concept as currently exists does not mention combination SAR/SCBA respirators with suits for this purpose. If they do not consider these devices separately, it will result in a lessening of protection for wearers of NIOSH approved devices for IDLH atmospheres.

Essentially the NIOSH plan uses existing respirator designs with a new respiratory inlet covering: a full body suit. NIOSH has stated that this program will develop one respirator certification standard for "air fed ensembles". 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 theses suits in atmospheres such as IDLH.

Perhaps NIOSH has not recognized one of the advantages of its current approval system. This advantage is that the current approval numbers act as a guide for proper selection of respirators. For example, 84A indicates that a device is approved as a particulate respirator. For 21C approved respirators, the description found in 42 CFR 84 indicates that a 21C respirator could not be used in IDLH or oxygen deficient atmospheres. They are not for gases and vapors. An SAR is marked with 19C and is not approved for IDLH or oxygen deficient atmospheres. The advantage of the system for combination SAR/SCBA respirators prevents confusion because a combination SAR/SCBA is not marked as an SAR (19C) but rather as SCBA (13F).

Given that NIOSH typically has given a specific numeric indicator to a complete subpart, approving all respirators with a suit under one standard (subpart) as proposed. This will result in some of these "ensembles" being restricted to particulate atmospheres, some to atmospheres with gases and vapors where there are effective cartridges, others for all gases and vapors, and then some for IDLH oxygen deficient atmospheres. Let us say for this purpose, this new subpart would be 84B. Unfortunately the approval number will be of no practical use. The user will know they have a NIOSH approved respirator but not necessarily its limitations. A user could not use the numeric designation to tell them the limitations or restrictions on this device. While the approval label will give all of the limitations for the device the simplicity of the numbering system is one of its current advantages. We believe this will result in people selecting the wrong device when they go to purchase a respirator resulting in potentially fatal mistakes.

We recommend the following designations for the proposed respiratory protective devices with full body suits:

1. powered air purifying respirator with a suit (or powered air purifying suit)(approval designation today would be either a 21C, 23C or 14G but after the new module on PAPRs it would use that number perhaps),
2. supplied air respirator with suit (or supplied air suit) suit (approval TC-19C or perhaps 19D after the SAR module is completed),or
3. combination SAR/SCBA (self-contained breathing apparatus) with suit (approval 13F includes 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.

The total inward leakage (TIL) requirements for respirators with suits need to be added to the TIL concept.

Specific Comments

2.5 Air-fed ensembles; respirator performance

The Compressed Gas Association publication cited in this concept needs a year stated so the edition is known. To leave it in the standard with out a year circumvents the notice and comment rulemaking procedures as the requirements for Grade D air could be changed by the actions of a few (the CGA committee) and circumvent the right to comment.

Panel Discussion Comments

At the September 17, 2009 public meeting, NIOSH posed the following questions for consideration and discussion and requested specific input. We have elected to respond to two of them.

Regarding classifications, NIOSH asked, "What works, is there a common language?

Yes, there has been a common language for supplied air respirators with suits for at least thirty years. These devices have been called supplied air suits. Given how long this name has been used, any new devices should be patterned after this.

Feasibility of including escape cylinders, APER.?

It is not clear what NIOSH is asking - does NIOSH consider escape cylinders and APER to be the same thing? In the past APER has referred to air purifying escape respirator and do not use a cylinder of air. Respirators with a cylinder should be considered a self-contained device unless NIOSH is meaning a combination of the two devices. In this case it should be approved as an air-purifying respirator.