COMMENTS FORWARDED TO NIOSH DOCKET OFFICE FOLLOWING PUBLIC MEETING OCTOBER 16 & 17 2002 ON CBRN APR STANDARD

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These comments are related to the wording in the standard:

4.3.1 Mechanical Connector

Suggested word change:

Line 3: Amend the second sentence to read "For respirators where the filter is attached directly to the facepiece (i.e., mask mounted), a single interface connector thread shall be located on the facepiece."
Line 10: Add an additional sentence at the end of the paragraph: "For respirator systems where the filter is not mask mounted, multiple filter assemblies are permitted, so long as each filter is rated at least CBRN 15."

Rationale for word changes: In response to questions raised at the public meeting it was made clear that where the filter was not intended to be mask-mounted, there was no mandatory requirement for a threaded connector on the facepiece. Also in this situation, the use of multiple filters was not ruled out, since it is a means of reducing airflow resistance and hence physioligacal burden to the wearer.

4.3.2 Gasket, Mechanical Connector

Suggested word change:

Line 2: Amend second sentence: " The gasket shall have a shore hardness of value of 65+/- 10 and the material shall be either EPDM or a material with agent permeation resistance properties equal to, or better than EPDM, such as butyl. Where the gasket material is not EPDM, the applicant shall provide evidence of its resistance to agent permeation.

Rationale for word change: At the public meeting it was recognised that the gasket formed an essential part of the interoperability strategy. There was a desire to provide a gasket material with a proven track record, and so the material in the current US M40 Mil Spec was chosen. However, the choice of one material is unnecessarily design restrictive where the need is to provide resistance to agent permeation as well as a defined resilience. The NIOSH presentation given on agent simulants for materials selection stated that butyl, EPDM and silicone were ranked, high, medium and low with regards to agent resistanc. Therefore NIOSH have only chosen a medium –ranked material for the gasket. Thus there is no credible rationale for excluding materials that are ranked higher than EPDM, but have the correct shore hardness.

4.3.6 Field of View

Suggested word change:

"The full face piece shall be designed so that the effective field of vision shall be not less 70% related to the natural field of vision of facepeces containing a single ocular and not less than 50% related to the natural field of vision of facepieces containing twin oculars and the overlapped field of vision related to the natural overlapped field of vision, shall not be less than 20% for any face piece."

Rationale for words: The public meeting heard many comments concerning the adoption of the EN136 test, including the adoption of the test method using the EN 136 test head. It was pointed out that the test head was large and was not suited to multi-sized masks (particularly the small mask sizes), as it was designed nearly fifty years ago for industrial masks generally manufactured in one size. NIOSH was urged to conduct baseline testing of masks, particularly the field-proven twin ocular military style masks to establish whether or not the values chosen in the draft standard would eliminate field-proven twin ocular military-style masks. The baseline tests of US (M40) and UK (S10 and FM12) masks conducted by Avon in conjunction with 3M on behalf of SBCCOM have shown that the effective field of view of these masks when tested on the EN 136 head is less than 70%. In view if the shot time frame before the standard is to be published, there is little time to develop a test head that relates to modern day masks suitable for the CBRN activities (that have aspects in common with military activities), we propose that the % effective field of view requirements in the standard be amended to accommodate the inadequacies of the chosen test method and apparatus.

4.3.11 Practical Performance

Suggested word change:

Line 3: Add new sentence. "Where the respirator system is designed with filters that are not mask-mounted, the weighted filter(s) shall be attached to the threaded connector on the hose/harness system".

Rationale for words: If the comments related to clause 4.3.1 are accepted, then the case where a mask containing a hose and harness system in which the facepiece itself does not contain the threaded connector, must be tested for PF with the maximum weight filters attached to the harness system.

GENERAL COMMENT

Cost of Submission.

Avon were concerned, along with many others, about the $88,000 submission cost that was provided as a guide at the meeting. However a second hidden cost is that associated with obtaining pre-submittal data, which, if it were required in multiple filter tests for each of the ten gases, could add significant sums to the overall certification cost. Avon request that NIOSH give serious consideration as to how the pre-submittal data requirements can be minimised, to reduce overall certification costs.

A suggestion would be to see how pre-submittal data could be used in lieu of re-tests by NIOSH for those gases where the filter had an obvious over-capacity. For example a filter might be rated 15 minute because one gas (e.g., NO_2) gave a time of 20 minutes, whereas most other gases gave data in excess of 45 minutes. There seems little value in repeating the tests (particularly in the "as received" state) where excess capacity has been demonstrated in pre-testing for a given gas.

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