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

From: Sell, Robert [Robert.Sell@draeger.com]
Sent: Tuesday, November 17, 2009 4:32 PM
To: NIOSH Docket Office (CDC)
Cc: Drews, Wolfgang; Rueck, Klaus-Michael; Ammann, Klaus; Bahr, Axel; Hodson, David
Subject: NIOSH Docket No. 148A
Attachments: Draeger Comments - Air Fed Suit Dev Plan - NIOSH Docket No 148A - Nov 2009.doc

Hello:

Enclosed please find Draeger Safety's comments for the Draft Concept Paper: Air-Fed Suit Ensembles dated August 25, 2009.

If there should be any questions, please do not hesitate to contact me.

Regards

Bob Sell

Sr. Project Engineer - Protection

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November 17, 2009

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Reference: DOCKET NUMBER NIOSH 148A
Draft Concept Paper: Air-Fed Ensembles; August 25, 2009

Dear Sir / Madam:

Draeger Safety manufactures respirators for various markets and applications therefore we offer the following comments in response to the presentations and request for comments on the Draft Concept Paper: Air-Fed Ensembles; August 25, 2009.

The following Draeger Safety comments are being submitted for consideration:

General Comments:

1. The European approach classifies six different types of Chemical Protection Suits which range from Gas Tight, Non Gas Tight, Liquid Tight, Liquid Spray Tight to Dust/Spray Tight, Limited Spray Tight or Dust Tight, and Dust Tight only. The materials for the suits also range from spun bound or woven materials to laminates and gas tight rubber coated fabrics.

   All of the above mentioned suits can be combined with Air Supplying Respirators or PAPR Respirators. The Air Supplying Respirators are required to meet the performance criteria identified in EN 14593-2 and PAPRs are required to meet the performance criteria identified in EN 12491 or EN 12492 but there is no standard that provide the performance criteria for the suit and respirator combinations.

   The current approach of the proposed concept document seems to be combining all of these requirements into one standard and we feel that this will create a very cumbersome document. We therefore propose the following:

   - Define the possible combinations
   - Define the intended use for the complete ensemble; i.e.: Selection Guide (See example below)
   - Define the expected TIL for each ensemble combination

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- Define the minimum chemical, physical, and mechanical requirements for the ensemble combinations

Selection Guide Example

Suit Type	Respiratory Protection	Intended Use	Total Inward Leakage
Heavy Duty Gas Tight Suit (Encapsulated)	Combination SCBA/SAR w/Automatic Switch-Over Valve	Hazardous Materials Incidents Confined Space Entry	0.005 – 0.01% Or Pressure Decay Test
Gas Tight Suit w/integrated Tight Fitting Full Facepiece	Combination SCBA/SAR or SAR w/Automatic Switch-Over Valve	Biological Labs Decontamination	0.01% Or Pressure Decay Test
Gas Tight Suit	SAR	Biological Labs Nuclear Power Plants	0.05% Or Pressure Decay Test
Non-Gas Tight Suit	SAR	Biological Labs Nuclear Power Plants	0.05% Value could be increased with higher airflow permitted into the suit
Non-Gas Tight Suit w/Integrated Full Facepiece	SAR	Biological Labs Nuclear Power Plants	0.05% Value could be increased with higher airflow permitted into the suit
Non-Gas Tight Suit	SAR w/Half Mask	Asbestos Clean-up Spray Painting	0.2%
Non-Gas Tight Suit	SAR w/Hood	Asbestos Clean-up Spray Painting	0.2% - 10%
Non-Gas Tight Suit	PAPR w/Full Facepeice	Asbestos Clean-up Spray Painting	0.05%
Non-Gas Tight Suit	PAPR w/Half Mask	Asbestos Clean-up Spray Painting	0.2%
Non-Gas Tight Suit	PAPR w/Hood	Asbestos Clean-up Spray Painting	0.2% - 10%

Note: Not all of the above table may be within the purpose of the proposed concept but it can serve as a guide.

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2. The referenced standard EN 1073-1 describes a suit with an air supply to protect against radioactive particles and it is required to maintain positive pressure while performing any task (including squatting, climbing, crawling, etc). This requirement was based upon the design of the non-gas tight suits but these suits can be designed without exhaust valves but with air outlets that would relieve the pressure down the sleeves or the legs of the suit. For gas tight suit designs with exhaust valves only a low flow is needed to maintain positive pressure but squatting and standing up would first create a positive pressure peak and then a negative pressure peak would be experienced because the exhaust valves would close. We believe that this is a design restrictive requirement in EN 1073-1 and would prefer that this is not included in this concept. We would like to propose that the following wording be incorporated into the appropriate location in the document:

   Non-Gas Tight Ensembles shall be designed in such a way that the pressure inside the suit remains positive during any task and must fulfil the Total Inward Leakage requirements

   Gas Tight suit Ensembles with exhaust valves may be allowed to show negative pressure peaks while and task is being performed and must fulfil the Total Inward Leakage requirements.

3. We believe that the internal pressure for any ensemble should be no greater than 5 mbar and pressure higher than are uncomfortable when the ensemble is worn for a long period of time. We would like for this to be considered as a requirement for this concept.

Section 2.1

We looked at the availability of the reference standards identified in this section and found that we could not locate the first document referenced: Certification Criteria and Test Result Documents for the Propellant Handler's Ensemble, KSC-TA-9557, National Aeronautics Space Administration (NASA), October 21, 2008.

Section 2.5 Carbon Dioxide Machine Test

The current concept identifies that a CO_2 is to be performed but sampling location is not identified. We would like to suggest that this test is only performed in the oral/nasal region of the suit because it is not feasible to sample from the extremities; i.e.: arms and legs.

Draeger Safety thanks NIOSH for the opportunity to provide comments. Please consider our comments concerning the ongoing development of this standard.

If there should be any questions concerning this matter, please do not hesitate to contact me at 412-788-5685 or via e-mail at Robert.Sell@Draeger.com.

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Respectfully,

Robert Sell

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cc: W. Drews – DST
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