

July 9, 2003

NIOSH Docket Officer
Robert Taft Laboratories, M/S C34
4676 Columbia Parkway
Cincinnati, OH 45226

Subject: Comments on June 30 NIOSH DRAFT "Concept for CBRN Air-Purifying Escape Respirator Standard"

Comments on the June 30, 2003 DRAFT NIOSH document titled **Part 1: Concept for CBRN Air-Purifying Escape Respirator Standard:**

Comments on Section **2(b) Escape respirator Multi gas/Vapor/Particulate Requirements GENERAL Category:**

The specified breakthrough level of 12.5 PPM for ammonia is illogical. The NIOSH REL for ammonia is 25 PPM and the STEL is 35 PPM. The OSHA PEL is 50 PPM. The breakthrough concentration in 42CFR84 for the approval of both gas masks and chemical cartridge respirators is 50 PPM. For gas filters approved to EN141 in Europe, the breakthrough concentration is 25 PPM. The 12.5-PPM breakthrough level will introduce unnecessary variability in the test method for approving these devices because the breakthrough curve slope (change in concentration divided by change in time) is shallow at this concentration. This means that a small inaccuracy in the measurement of the breakthrough concentration can cause a large inaccuracy in the reported breakthrough time. At the higher concentrations normally used for ammonia service life (50 PPM, for example), the breakthrough curve is steeper and small inaccuracies in concentration measurement will have a very slight effect on the measured service time.

The breakthrough level for ammonia should be changed to 50 PPM to be consistent with the breakthrough level in 42CFR84 and avoid introducing unnecessary variability in the test method. This change will not compromise the protection level of escape devices approved under this standard since, according to OSHA, a person can safely work in 50 PPM ammonia for 8 hours a day.

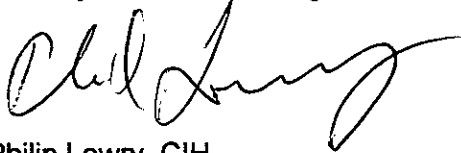
Comments on Section **6(d) Breathing Gas:**

Will NIOSH specify a NIOSH Standard Test Procedure for determining CO2 concentration with human test subjects? Will this method be validated to ensure that the level of CO2 determined is not unduly influenced by variability among test subjects, such as variability introduced by differences in metabolic rate and by food and beverage consumption.

Comments on Section 6(i) Laboratory Respirator Protection Level:

Will NIOSH specify a NIOSH STP for determining LRPL? In the standard for NIOSH CBRN approval for SCBA, a device (with a single size facepiece) meets the LRPL requirement if no more than one subject fails to achieve the specified LRPL level. How many subjects are allowed to fail the breathing zone LRPL and how many are allowed to fail the "under the hood, outside the breathing zone" LRPL?

Thank you for considering these comments,

A handwritten signature in black ink, appearing to read "Philip Lowry". The signature is fluid and cursive, with a large loop at the end.

Philip Lowry, CIH
Director of Engineering
Survivair, Bacou-Dalloz
714-427-5249