

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

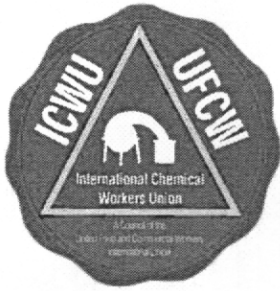
From: jmorawetz@icwuc.org
Sent: Monday, March 21, 2011 3:43 PM
To: NIOSH Docket Office (CDC)
Cc: Niemeier, Richard W. (CDC/NIOSH/EID); Dotson, G. Scott (CDC/NIOSH/EID); Frank Cyphers; Greg Villanova; Bill Kojola; Eric Frumin; Darrell Hornback
Subject: Docket number NIOSH-156: CIB on Derivation of Immediately Dangerous to Life and Health (IDLH) values
Attachments: IDLH CIB- ICWUC comments.pdf; NIOSH IDLH ICWUC comments.doc

Enclosed are the ICWUC comments on Docket number NIOSH-156: CIB on Derivation of Immediately Dangerous to Life and Health (IDLH) values. Please let me know if you have any questions.

I am including the pdf of our letter and the word version.

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March 21, 2011

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Robert Taft Laboratories, MS C-34
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Docket number NIOSH-156

CIB on Derivation of Immediately Dangerous to Life and Health (IDLH) values

I would like to raise concerns on the proposed CIB on IDLH values. My primary concern is the description and use of AEGL values as well as the application of AEGLs to a working population, individuals AEGLs were not intended for. AEGL values are derived for once in a lifetime or rare exposures to the general population. Although they are an excellent example of a starting point for the derivation of IDLH values, they must be examined on a case by case basis for use in any occupational setting. Specifically, in the occupational setting, there are a wide range of exposure scenarios that NIOSH needs to take into account, how IDLHs will be utilized in order to decide if AEGL values derived for a public single exposure are being properly used in a new occupational setting with multiple exposures.

With the growing concern about catastrophic chemical events, a number of community exposure limits have been derived over the last 15 years. The draft CIB accurately describes the ERPG values as "only a single exposure" (Section 2.2). The AEGL description only mentions "emergency exposures" but adds that they "are used in a variety of applications". We have seen, and attempted to correct, numerous examples where AEGLs are described as emergency response values with no mention that they were intended as a single (or rare) exposure to the public and this error is reflected in the description of AEGLs in section 2.1. Without a rigorous and clear definition of what AEGL values were intended for, it is all too easy to fail to see any problem with just applying them to a working population.

The foreword states that "The inclusion of the AEGL methodology has helped ensure that the IDLH values .. are based on validated scientific rationale" (page iii). Although the AEGL methodology is sound, simply transferring this methodology to a different use is not appropriate. In some cases the AEGL committee used occupational studies that either did not have appropriate exposure on health effects data (American Journal of Industrial Medicine; 47(4): 370-375; 2005). Especially in these cases, a chemical by chemical review by occupational health experts is critical before deriving IDLH values.

Further, in utilizing Uncertainty Factors, researchers should start with a factor of 10 when extrapolating from animal to human data and when extrapolating within the range of human reactions. The methodology should start with a high UF value that can legitimately be lowered only if there is sufficient evidence to do so. It is dangerous to use lower UF factors due to the belief of experts that they don't believe a larger value is necessary. One view could be that unless there is evidence to show that an uncertainty factor of 10 is required, a lower value is appropriate and is likely the reason 3 is listed as the

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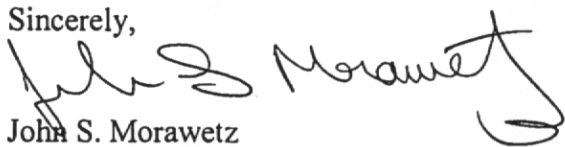
"Preferred UF" in Table 4.2.1. This inappropriately places the burden on others to prove that a large UF value is needed rather than the reverse; that one has to demonstrate that there is evidence to lower the UF from 10. Statements to this effect are found in the current draft document (UF of 10 is "often used if major uncertainties or additional significant concerns are identified"; page 69).

A methodology to derive IDLH values must evaluate the occupational exposure context that these values will be used and in particular what exposures may have existed before utilizing the IDLH values and possible exposures post use of the IDLH. It is well established that workers are exposed to dangerous levels of substances given the various estimates of occupational diseases and mortality. If workers who are exposed to significant levels are then exposed to IDLH values that do not take this previous exposure(s) into account, they likely will not be protective or the best estimate of a level that will not impair a worker's ability to escape. Similarly, if the studies used to set these values are single exposure studies where by definition there is no previous nor subsequent exposures (page 32), NIOSH needs to evaluate what would be their likely effect. The Executive Summary (page v) correctly points out that there are "a variety of non-routine workplace situations" that have high risk conditions such as confined spaces (which likely will be entered repeatedly). This is all the more critical for the emergency response community that may easily face these exposures as part of their job and the wide application of IDLH values "beyond their initial purpose" (page v). Although the draft document states that IDLH values "should be considered a once in a lifetime event" (page 9) there are other examples in the draft document that point to a wider application.

Lastly, we have questions on the use of the AEGL notation for IDLH values that are greater than 10% of the LEL. Given the occupational setting and use of IDLH's for respirator selection, I have a serious concern whether an IDLH should be set above 10% of the LEL since many confined space protocols and emergency responders would recommend evacuation at that level. For example, to list a value at 20% of the LEL would imply that a different respirator could be safely used at 19% of the LEL and that escape would not be impaired (pages ix, 10). This seriously undermines the OSHA Confined Space standard that considers concentrations in excess of 10% of the LEL to be a hazardous atmosphere in confined spaces [29 CFR 1910.146(b)] and workers cannot be in these atmospheres. In addition this questions management directives not to work in atmospheres above 10% of the LEL and any concerns workers appropriately express if directed to work in this environment. We would therefore urge NIOSH to set the IDLH value at 10% of the LEL and explain the danger of potentially explosive atmospheres. Once again, simply using AEGL methodology is not appropriate in an occupational setting.

This is not any easy task given the large variability in workers' previous and future exposures. These comments are mainly directed at NIOSH making reasonable assumptions, setting a methodology to take these factors into account and utilizing AEGL values and methodology appropriately.

Sincerely,



John S. Morawetz

c: Frank Cyphers
Greg Villanova
Darrell Hornback
Bill Kojola, AFL-CIO
Eric Frumin, Change to Win