

Dragon, Karen E. (CDC/NIOSH/EID)

From: Rusch, George [george.rusch@honeywell.com]
Sent: Thursday, February 17, 2011 9:48 AM
To: NIOSH Docket Office (CDC); Niemeier, Richard W. (CDC/NIOSH/EID)
Cc: sdripple@gmail.com; george.rusch9@gmail.com
Subject: Stakeholder Review of NIOSH CIB on IDLH derivation docket number NIOSH-156
Attachments: NIOSH rev.doc

Dear Review Coordinator,
Attached please find my comments on the draft Derivation of IDLH values document. If you have any questions, please contact me at your convenience. My telephone numbers are 973-455-3672 and 908-704-8590; email george.rusch9@gmail.com.

Best regards,
George M. Rusch

George M. Rusch, Ph.D.
870 Dow Road
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February 17, 2011

NIOSH Docket Office
Robert A. Taft Laboratories
4676 Columbia Parkway
MS C-34
Cincinnati, Ohio 45226

Re.: docket number NIOSH-156

Dear Sir or Madam:

Thank you for offering me the opportunity to review the Current Intelligence Bulletin: *Derivation of Immediately Dangerous to Life and Health (IDLH) Values*. In my opinion it is an excellent technical document and discusses this topic clearly and thoroughly. I would like to offer a few technical comments for your consideration:

1. In the glossary, it might be helpful to include the link for some of the programs described (i.e. Benchmark dose). This would expand the value of the document. This link is given on page 36, line 13.
2. On page 3, lines 4-7, there is a reference to HF exposure. It states that transient effects could pass unnoticed and be followed by a sudden possibly fatal collapse 12 to 72 hours later. This is not accurate. While some effects from HF exposure are delayed, they will manifest themselves 6 to 12 or possibly 24 hours later, not 72 hours later.
3. On page 5, lines 11-12 there is a reference to a 70 kg man breathing 10 m³ of air. It must be stated that this is in an 8-hr period.
4. In table 3.4.2.1.2, the uncertainty factor associated with the BMCL₁₀ is given as 10. It was my impression that given the robustness of this calculation, one could use a smaller UF e.g. 3.
5. On page 39 line 22, the reference for the cardiac sensitization protocol is Brock et. al., 2003. This is a good reference, however, recently a comprehensive review of this test has been published and you might consider adding that also. ECETOC (2009). Evaluation of Cardiac Sensitization Test Methods, Technical Report No. 105. European Centre for Ecotoxicology and Toxicology of Chemicals, Brussels, Belgium.
6. Probably this is an editorial comment but I offer it for your consideration. On page 48 line 7, I would change the term "indicate poor study quality" to "indicate uncertain study quality". As is noted in the review, the study could be of high quality, but the exposure atmospheres could be very unstable for many reasons not related to study quality.
7. Typo you may miss: page 50 line 21 "most" should be "moist".
8. I think it's bad science to use a number that is known to be wrong. On page 52 lines 1-15 there is a discussion on the calculation of an estimate for an inhalation level from oral or

dermal data. For a 30 minute exposure the volume of air inhaled is given as 10 m^3 and a statement is made that the real value is 1.5 m^3 , but this is precautionary. That approach weakens the credibility of the document. Instead, use 1.5 m^3 and an uncertainty factor of 3, 5, or 10 depending on the data. With this approach, no one will be able to say the document is wrong.

9. In Figure 3.5.1 on page 56, having initially recommended to my peers several years ago that for time extrapolations, they use a value of $n=2$ and then to be a part of a program that used $n=3$, it was good to see how close the two lines are. Thank you.
10. On page 65, lines 5-9, there is a discussion on Duration of Exposure. If the document is discussing length of exposure variations for IDLH conditions, I agree with the conclusions. If it is referring to the length of the experimental exposures, I feel that they must be taken into consideration. Using a 4 hr result for a POD will give a vastly different result than using a 30 min. POD. It would help to clarify this section in the document.
11. The section on ages 85-91 on Risk Priority Scoring is very well developed and useful.

As I stated above, this is a scholarly and comprehensive document. I enjoyed reading it. I hope you will find my comments helpful.

Sincerely,

George M. Rusch

George M. Rusch, Ph.D., DABT, ATS, ERT