DRAFT MEETING SUMMARY

Fouth Meeting of the Health Expert Advisory Committee (HEAC) for Permissible Exposure Limits for Airborne Contaminants in the Workplace California Code of Regulations, Title 8, Section 5155

April 29, 2008
Elihu Harris State Building
1515 Clay Street
Oakland, California

HEAC Members in attendance

Will Forest, Santa Cruz County Public Health Department
Bob Ku, SafeBridge Consultants
Linda Morse, Independent
Patrick Owens, Shell Oil Martinez Refinery
Patty Quinlan, UCSF Occupational Health
Julia Quint, Independent
Susan Ripple, Dow Chemical
Howard Spielman, CIHC
James Unmack, Unmack Corporation

Public and Interested Party attendees

Heather Borman, State Compensation Insurance Fund
Craig Bressan, Dynegy
Juli Broyles, California Advocates
Marcia Dunham, Pacific Gas & Electric
Sara Hoover, OEHHA
Barbara Kanegsberg, BFK Solutions
Dan Leacox, Greenberg Traurig law firm
Tina Ling, Asian Law Caucus
Jane Murphy, Phylmar Regulatory Roundtable
John Sacco, CalPASC, CCMCA, AGC of CA, MIA, CCNSIG
Michael Smith, WorkSafe
Dennis Shusterman, HESIS

Cal/OSHA Staff

DOSH Research & Standards Unit: Bob Barish (meeting chair), Steve Smith, Bob Nakamura, Mike Horowitz

Administrative Discussion Items

HEAC Process Items

Two HEAC process items discussed at the January 29, 2008 meeting were revisited to discuss the consensus proposed in the summary for that meeting.

Document distribution lead time. There was general agreement with the approach of a six week lead time for the posting of health assessment documents prior to a meeting at which a decision would be made on a recommended PEL and document ratification (except for substances with no apparent stakeholder interest, other than the meeting at which a substance is initially presented).

Participation by interested parties: There was general agreement with the concept of strongly encouraging primarily written comments by interested parties, and requiring those to be submitted sufficiently in advance of the meeting to allow for review by HEAC members. Rather than the two weeks ahead of the meeting suggested in the January 29

meeting summary, three weeks ahead of the meeting where they were planned for discussion was agreed upon as the minimum lead time for submission of written comments by interested parties. It was also agreed that interested party presentations in support of written comments submitted three weeks ahead of the meeting would be limited to five minutes (not including questions and answers) and a maximum of 4 PowerPoint-type slides to be provided only in paper copy (no PowerPoint-type slide shows would be taken). Where an interested party for a particular substance attends a meeting but has not submitted written comments the agreed upon three weeks ahead of the meeting, they would be provided a very brief period to introduce themselves and their relevant organizational affiliations, and briefly note any position or concern with respect to the substance under discussion.

Additional HEAC process items agreed to:

1. At the beginning of the initial presentation of a substance the meeting chair would ask that all HEAC members present disclose the presence of any actual or potential conflict of interest they may have with a substance.

2. It was generally agreed that more frequent meetings, while reducing the time available for coordination of presentations and other staff work, had the advantages of putting pressure on completion of draft assessment documents and allowing for less time between meetings over which previous meetings' discussions would fade in recollection. To facilitate more meetings, it was agreed that the meeting summary prepared by DOSH could be abbreviated to consist just of major points of discussion, and "action items" for originators of draft health assessment documents for individual substances discussed. It was noted that more detailed and standardized health assessment documents including a summary narrative detailing the rationale for the HEAC recommendation proposed would serve in part to take the place of detailed meeting minutes.

It was also agreed that another HEAC member should take notes for each substance when it is initially presented to facilitate generation of the list of "action items" for the draft document.

Status of revised list of substances for PEL work

Steve Smith said he was working on a revised list based on the discussion at the April 4 special meeting on selection and prioritization of substances for PEL work. He said he planned to merge the August 2007 list of substances based primarily on revised TLVs with the list of substances from the OEHHA report on PELs which were the focus of the April 4 meeting. As with the August 2007 list he said he planned to separate substances into proposed priority groups. He said that as before the list will be flexible to accommodate changing concerns and information.

Julia Quint asked if sensitizing substances would be part of the list and addressed by HEAC, or if there will be a separate process for them. Steve Smith said that the process on the idea of a footnote for sensitizers first discussed at a meeting in June 2005 needs to be started again. Susan Ripple said HEAC should be involved in deciding if a substance is a respiratory sensitizer.

Presentation on RD50

There was discussion of the idea of the committee receiving a presentation on the RD50 to assist with deliberations on hydrogen chloride and other substances where respiratory irritation may be the critical endpoint determining the recommended PEL. It was agreed that the paper of Kuwibara on the RD50 would be distributed and if there were questions or committee members felt a need for a presentation it could be requested.

Other discussion items

There was discussion of the numbers of rounds of questions on health assessment documents that would be entertained from interested parties by the HEAC. Concern was expressed by some committee members that multiple rounds of questions could be employed by interested parties to slow the reaching of a PEL recommendation. Bob Barish said he did not support adopting a set number of rounds of questions that would be allowed from interested parties. He said he would be mindful of the concern and would work to see that questions from interested parties are appropriately focused and not repetitive.

Discussion of Specific Substances

Dichloroacetic acid

Susan Ripple presented a revised draft assessment document for dichloroacetic acid noting that the number 34 indicated in the previous draft was not an "uncertainty factor" for the TLV. In response to questions, she said she would change the wording from "not being an uncertainty factor" to 34 being a "margin of safety" in the TLV. This was considered a non-substantive change and the recommendation for a PEL and the draft assessment document were adopted without objection by a consensus of those HEAC members present.

Sulfuric acid

Bob Ku made the initial presentation of his assessment document for sulfuric acid. The document has been posted at the PEL project website since shortly before the January 29 meeting. Bob Barish asked if Bob or any other HEAC members had a potential conflict of interest to declare. Susan Ripple and Patrick Owens said that their employers may use sulfuric acid or it may occur in their workplaces as a byproduct but they do not manufacture or market it. No other potential conflicts were declared.

Bob Ku said he had reviewed over 50 papers including both animal and human studies, and had found highly variable results among them. He said he based his recommendation for a PEL of 100 ug/M^3 on the study of Alarie et al. (1973), reference 28 in the TLV Documentation. He said this was the same study on which OEHHA based its chronic REL value.

The current Cal/OSHA PEL for sulfuric acid is 1 mg/M3 (1,000 ug/M^3) with a STEL of 3 mg/M^3. The current TLV is 0.2 mg/M^3 (200 ug/M^3) TWA thoracic particulate fraction, and no STEL, adopted by ACGIH in 2004. Bob Ku said his recommended PEL did not address the risk of cancer that has been identified (including through Proposition 65) with strong inorganic acid mists containing sulfuric acid. However, he said he hoped it might be possible to provide a footnote or other note designating it as a cancer-causing agent in section 5155.

Julia Quint asked Bob Ku what health endpoint formed the basis for his PEL recommendation. Bob Ku responded that his recommendation was based on prevention of pulmonary function decline and impairment of mechanisms of lung clearance.

The following issues in Bob Ku's assessment were discussed:

Particulate fraction

The current Cal/OSHA PEL is expressed in terms of total particulate (mist) while the TLV is in terms of "thoracic particulate." John Sacco said he had done particulate sampling using the inhalable particulate sampler and it was difficult, very sensitive to orientation of the sampler and difficult to interpret the results. He recommended against adoption of a standard based on thoracic particulate. Bob Ku also said that since the studies that were reviewed on which he based his recommendation were not tied to the thoracic fraction he thought a total mist basis should be used as with the current PEL.

Sensitive populations

There was discussion of results of studies in humans, mostly those with mild asthma. Bob Ku said his conclusion was that a safety factor of 3 or 5 should be sufficient to protect such individuals that Dennis Shusterman termed "atopic" and Linda Morse termed as having "upper/lower inflammatory disease." Dennis Shusterman said that individuals with such conditions have been estimated to be 20% of the working population. Jane Murphy asked if this amounted to a broad policy decision generally to set PELs based on protection of sensitive groups. Bob Barish said that he viewed it as being specific to sulfuric acid, based on Bob Ku's conclusion of the relatively modest level of additional sensitivity in these individuals (for example compared to sensitization reactions) and the large percentage of the workforce that could be affected according to Dennis Shusterman. Susan Ripple said that since 2005 the ACGIH was taking into account in setting TLVs the protection of groups with such sensitive airways as was being discussed.

Dennis Shusterman said he thought a recommended PEL of 100 ug/M^3 could be based upon the studies in adult asthmatics of Koenig and colleagues which would have the advantage of not requiring an interspecies uncertainty factor, and would be supported by the study of Alarie in animals.

Action Items

Bob Ku said that for follow-on discussion at the September meeting he would:

1. Work on clarifying the draft assessment document with a narrative statement of the basis for the PEL he is recommending, and elaboration of items in the document that were discussed in the meeting.

2. As suggested by Will Forest, summarize sulfuric acid exposure data presented in the IARC monograph.

Carbon disulfide

HEAC member Patrick Owens made the initial presentation of his assessment document for carbon disulfide. The document is posted at the PEL project website. Bob Barish asked if Patrick or any other HEAC members had a potential conflict of interest to declare. Patrick Owens said that carbon disulfide can be a byproduct of petroleum refining as at the Shell Martinez refinery where he is employed, but that it is not a product manufactured or marketed by his employer. No potential conflicts were declared by any other HEAC members present.

Patrick Owens noted that carbon disulfide has a low odor threshold and that it is still frequently used as a laboratory solvent. He said the critical endpoint for the PEL is the effect on the peripheral nervous system, while at higher exposure levels there can be ocular and cardiovascular effects. He said there was no evidence of carcinogenicity and that acute high exposures can cause effects on the central nervous system. He noted that carbon disulfide is also on the Proposition 65 list as a developmental hazard and as a male and female reproductive hazard.

The current Cal/OSHA PEL for carbon disulfide is 4 ppm (8-hour TWA), 12 ppm (STEL), 30 ppm Ceiling. The PEL includes a Skin notation. The TLV, adopted by ACGIH in 2006, is 1 ppm (8-hour TWA), with a Skin notation.

Patrick Owens said his recommendation for a PEL of 1 ppm as an 8-hour TWA, is based primarily on an evaluation by the Agency for Toxic Substances and Disease Registry (ATSDR) and the EPA IRIS evaluation published in 2004 and NIOSH recommendations. Sara Hoover said that the OEHHA chronic REL should also be included in the evaluation. Julia Quint said the recommendation should be based on a risk calculation using a well-evaluated NOAEL if available.

There was discussion of a Short Term Exposure Limit (STEL). Patrick said his recommendation, consistent with the TLV, did not include a STEL but that the NIOSH Recommended Exposure Level did include a STEL of 10 ppm. He noted the current Cal/OSHA PEL includes a 12 ppm STEL, along with the 4 ppm TWA limit. Patrick Owens said he would look into the basis of the NIOSH STEL recommendation.

Julia Quint suggested said the basis for the recommended Skin notation should be added to the assessment document.

Action items for carbon disulfide

Patrick Owens said that for follow-on discussion tentatively planned for the meeting June 17 he would:

1. Look into the basis for a STEL

2. Look into the OEHHA chronic REL

3. More fully develop the narrative statement for the recommendation, including references for the Skin notation

4. Clarify the developmental and reproductive effects as detailed in the Proposition 65 list

Trichlorethylene

HEAC member Will Forest said he had not finished the assessment document for this substance but had started looking at government documents and reviews. He said he had no recommendation for a PEL at this point.

Toluene

Julia Quint said that she had provided her draft assessment to DOSH before the start of the meeting. She said it did not include the full reference list which she would send shortly. Her presentation was postponed to June 17 for lack of time remaining in the meeting.

Substances for future meetings

The meeting concluded with discussion of which substances were planned for initial presentation or follow-on discussion at the June 17 and September 5 meetings.

Tentatively planned for the June 17 meeting were: follow-on discussion for carbon disulfide, continuation of the initial presentation of trichloroethylene, initial presentation of toluene, and if time one or more initial presentations from among benzyl chloride, di(2-ethylhexyl) phthalate, and naphthalene. (See the PEL project website for the latest information on substances planned for this meeting http://www.dir.ca.gov/DOSH/DoshReg/5155Meetings.htm)

Tentatively planned for the September 5 meeting were: follow-on discussions for hydrogen fluoride, hydrogen chloride, sulfuric acid, and n-methyl pyrrolidone, and initial presentations for ethyl benzene and ethylene dichloride. These initial presentations may be displaced by follow-on discussions for substances presented at the June 17 meeting.

END