

NIOSH Response to Sanford Cohen & Associates Review Comments on Appendix BB Revision 3

Response Paper

**National Institute for Occupational Safety and Health
Division of Compensation Analysis and Support**

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By David Allen

Reviewed by James W. Neton, Ph.D., CHP

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Background

A review by Sanford Cohen and Associates (SC&A) of revision 1 of Battelle-TBD-6000 Appendix BB (General Steel Industries) resulted in 10 findings. A resolution to each of these findings was reached in the TBD-6000 Work Group of the Advisory Board. Some of those resolutions required a revision to Appendix BB which was accomplished with revision 2. SC&A was then tasked to review revision 2 to determine if the agreed to resolutions had been included. The SC&A review of revision 2, dated September 6, 2016, found that 8 of the 10 findings had been resolved.

NIOSH's response to this review on November 4, 2016, noted that minor changes to revision 2 would be necessary. A description of the proposed changes were provided in the last page of NIOSH's response. During a work group meeting on December 14, 2017, NIOSH's proposed changes were agreed to, with the exception that the neutron energy range described in the proposed resolution would be changed to <10 keV.

Revision 3 of Appendix BB was issued February 9, 2017, and SC&A was tasked with reviewing it to identify any questions or concerns regarding the resolution of issues. An email from SC&A on February 23, 2017, (Attachment A) indicated all but one of the substantive issues had been addressed. The one issue was that the neutron dose was not identified as ambient dose equivalent, which is referred to as $H^*(10)$.

Response

While we agree it would be better to specifically identify neutron dose as $H^*(10)$, it is not necessary to specify every aspect of dose reconstruction within the Appendix. When information is lacking, the dose reconstructor will go to the subject matter expert or choose the favorable option. In this case, both would result in using $H^*(10)$ DCFs. The $H^*(10)$ specification has not been in the Appendix in the past and the dose reconstructors have been using $H^*(10)$ as noted by SC&As review of PER-57.

Therefore, a revision to the Appendix does not appear to be warranted based solely on this issue raised by SC&A. The ambient dose equivalent specification, however, will be included in any future revision.

Attachment A
SC&A review of Appendix BB revision 3.

Sent: Thursday, February 23, 2017 4:58 PM

Subject: Re: Preliminary review - Battelle-TBD-6000 Appendix BB - General Steel Indust...

Ted and Paul,

I have performed a review of Appendix BB, Revision 3, including a detailed comparison to Revision 2. All but one of the substantive issues that can have an impact on future DRs of GSI workers have been addressed. The outstanding issue is the failure to identify the neutron doses in Tables 5, 6, 8, and 9 as ambient dose equivalents ($H^*[10]$). Absent such information, a dose reconstructor could erroneously assume that these are deep dose equivalents ($H_p,slab[10]$), for which DCFs are also listed in OCAS-IG-001. These latter DCFs are significantly lower for every organ listed.

I note that NIOSH did not address the observations in our review of Revision 2, communicated in our memo of September 6, 2016.

Bob

Robert Anigstein, Ph.D.,

Task Manager

S. Cohen & Associates (SC&A, Inc.), Technical Support Contractor to Advisory Board on Radiation and Worker Health/NIOSH Centers for Disease Control and Prevention