

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

From: Daniel Mckeel
Sent: Wednesday, June 05, 2013 10:15 AM
To: Katz, Ted (CDC/NIOSH/OD); pl.ziemer@comcast.net; Ziemer, Paul (CDC/NIOSH/OD); NIOSH Docket Office (CDC)
Cc:
Subject: McKeel discussion paper: GSI Admin doses
Attachments: DM_GSI_AdminDoses_6.5.13.pdf

June 5, 2013

Paul Ziemer, chair, TBD-6000 work group
Ted Katz, ABRWH DFO
NIOSH Docket 140 (GSI)

Dear Ted and Dr. Ziemer and the NIOSH Docket Office,

Attached please find my rebuttal white paper to those by Dave Allen of DCAS/NIOSH and Drs. Mauro and Anigstein of SC&A.

The paper addresses NIOSH's proposed radium era dose assignments to GSI administrative personnel as well as SC&A's review.

I request that Ted Katz please distribute this paper to all ABRWH members including members of the TBD-6000 work group and the NIOSH and SC&A members of that WG and others, as is appropriate.

I also request the NIOSH Docket Office please consider posting this email and the attached paper as a Discussion paper to add to the Allen/NIOSH and SC&A papers for the TBD-6000 work group meeting scheduled for June 20, 2013. Please use the title: "Daniel McKeel, Analysis of GSI Administrative Personnel Dose Estimations."

Thank all of you for your consideration.

Sincerely,

-- **Dan McKeel** 6/5/13

Daniel W. McKeel, Jr., M.D.

**“Comment on NIOSH (Allen May 2013) and SC&A Review
of Doses Assigned to GSI Administrative Personnel During the Radium Era”**

Daniel W. McKeel, Jr., M.D.
GSI SEC-00105 Co-petitioner
-- 6/4/13 -

Dave Allen (DCAS/NIOSH) [REF 1] and John Mauro and Bob Anigstein (SC&A) [REF 2] have both submitted their 3 and 1 page, respectively, brief reports on doses proposed by NIOSH to be assigned by NIOSH to GSI administrative (office workers) personnel under a revised Appendix BB (Rev 1). This proposed and long overdue Appendix revision is currently under prolonged review by the TBD-6000 work group (WG: Chair, Paul Ziemer, members Wanda Munn, Josie Beach and John Poston). The WG has now met 16 times since 2008. The next meeting is scheduled to be held June 20, 2013. Appendix BB Rev 0 (June 2007) does not assign dose to a separate (third) class of administrative/office workers at GSI. I have purposefully withheld my rebuttal analysis until both papers were distributed to me. The SC&A one page review arrived today (6/4/13).

The SC&A paper follows a secret technical call meeting with NIOSH that was held on 5/28/13 from which SEC-00105 co-petitioner Dan McKeel was excluded. Ostensibly, from the 2/3 page summary notes by an unidentified author McKeel was provided two days later, these administrative personnel doses were not discussed at the technical meeting. REF 2 does not mention any input to this paper from the technical call. Dr. Ziemer indicated in an e-mail to me he listened to the technical call but had no input into the discussions.

The technical call summary indicated that DFO Ted Katz did have input into the meeting, and I have challenged his participation as being improper and in violation of the nature of such meetings he told me at first were “not tracked.” I produced transcript evidence to the ABRWH that SC&A (Dr. Anigstein and Steven Marschke) sent e-mails of a different WG’s technical call and posted them to the Board Review System (BRS) database (used primarily by the Procedures Review subcommittee chaired by Board member Wanda Munn). Public access to BRS is not

currently available to check whether other such technical entries have been recorded in this key data resource.

However, since discussion of “internal dose during the radium era” was said to be the primary focus of the technical call, one wonders why discussions of GSI administrative personnel doses and of Howard/Hinnefeld “maximum ambient doses” (see item Attachment A) were not made part of the 5/28/13 NIOSH-SC&A technical call? A FOIA request will have to be made to obtain more detailed information on the contents of the May 28, 2013, NIOSH-SC&A GSI technical call.

My comments on the NIOSH and SC&A papers are very brief as the minimal scientific content of the two papers merits.

1. These two very brief and poorly developed papers are not serious “good scientific” analyses. NIOSH assigns arbitrary doses and SC&A simply restates NIOSH assumptions and calculations and agrees they are “reasonable” without justifying their opinion. No surrogate data sources are used. The papers are collectively self-serving and clearly claimant adverse attempts to assign very low doses, with no precedents of similar doses being assigned elsewhere, to employees at GSI during the radium era who have not, and cannot be, accurately identified through the CATI interview process. Doses conflict with “maximum ambient dose” concepts cited by Director Howard in his 10/23/07 Senate HELP hearing testimony [REF 3].

2. David Allen’s paper starts for not obvious reasons with the 2 mR/hr outer “safe” boundary in the 6 bldg., ignoring testimony by former of that the AEC required an inner 100 mR/hr boundary also be set up that required constant surveillance by St. Louis Testing Laboratory personnel. NIOSH, the Board and SC&A should be well aware of this AEC/NRC regulation.

The title of Allen’s states “**Dose ...from Radium Radiographer...**” but the start dose he uses is actually for a non-radiographer worker intruding 10% (arbitrary) of the time within the 2 mR/hr less stringent safety barrier. Only the dose for radium-226, one of six (6) known sources at GSI 1952-62, was used in his calculations. He then cites “Based on a review of GSI documents...” but fails to cite

exactly what documents he is referring to. This is unacceptable in a scientific methodology paper that is being peer reviewed and critiqued by SC&A, the Board and the petitioners. I believe this is the Allen/NIOSH “throw them a bone” strategy at work in this paper.

Allen then makes “adjustments to previous estimate” assuming that administrative personnel walked through the zone only twice vs 25 times per shift. Is this assumption on Allen’s part in anyway logical or fact-based? The answer is NO, of course it is not, in the total absence of direct observational records of intrusions.

Next, Allen, again completely arbitrarily without any shred of justification, decreases the percentage of time spent by the exposed administrative worker at the boundary from 100% to 25%. How could these two dose reductions possibly jibe with Dr. Howard’s concepts of NIOSH routinely “maximum ambient doses” to administrative workers who possibly never were exposed to radiation in the workplace. Answer: it doesn’t, Allen has proposed and SC&A has approved a “**minimizing ambient dose**” instead as a highly claimant unfavorable proposal.

3. DCAS director Stuart Hinnefeld recently replied to a . (GSI site expert) e-mail inquiry that DCAS would implement NIOSH Director John Howard’s “maximum ambient dose” to GSI office workers in the revised Appendix BB [**REF 4, Attachment A**]. Mr. Hinnefeld replied without making any reference to the Allen May 2013 [**REF 1**] white paper that is the main subject of this current paper. He did not cite specific doses or methodology that NIOSH would use to achieve bounding.

4. NIOSH will not be able to assign and DOL will be unable to properly evaluate such “administrative personnel doses” accurately during dose GSI reconstructions because the job category assignment will be uncertain and open to challenge;

5. NIOSH and DOL lack employment data as to which GSI employees in which specific job categories were exclusively or primarily employed in the GSI Administrative building during 1952 to 1962 (the radium era). The petitioners have testimony from GSI workers that secretaries, for example, had their primary work

spaces both in the Administration Building and in the production areas of the plant. We also know that certain clerks had offices in the production areas at GSI.

6. The administrative personnel radiation exposure doses that NIOSH proposes and SC&A agrees to for the radium era at GSI, are not clearly designated as being applicable to SEC-00105 to amend the evaluation report, or, are they intended to be part of a revised Appendix BB? Obviously, this crucial point needs to be clarified.

7. My main criticism of the NIOSH (Allen) and SC&A (Mauro/Anigstein) papers is the assigned administrative personnel radiation exposure doses, that NIOSH proposes and SC&A agrees to for the radium era at GSI, are *completely arbitrary, without any scientific basis in fact.* Assigned doses therefore are, by definition, not reasonable, within the definition of “best practices good science” that NIOSH aggressively asserts is always their goal and *modus operandi*. The Allen paper proves that nothing could be farther from the truth. NIOSH and SC&A have absolutely no (zero) time and motion or traffic pattern studies of GSI administrative/office personnel during the period October 1, 1952 through 1962, which the TBD-6000 work group has defined as the “radium era” at GSI. **The scenarios used are simply made up, fabricated.**

8. The proposed assigned doses to administrative personnel at GSI are not claimant favorable. Rather “maximum ambient doses” as stated by NIOSH Director Howard in 2007 are the *de facto* NIOSH standard procedure should be used after defining precisely what that term means operationally (see REF. 4 and Attachment A).

9. The fact that GSI possessed and operated other crucial radiation sources that could have contributed to external and internal administrative personnel dose during 1952-1962 has been totally neglected in the Allen and Mauro-Anigstein papers under current discussion (references 1 and 2).

The five GSI sources other than two Ra-226 sources during 1952-1962 were:

(1) MCW uranium metal for which there are no MCW purchase orders or other solid source information from Oct. 1, 1952, through part of 1958, when the initial GSI-MCW/AEC purchase order for GSI Betatron NDT services was issued;

(2) an Allis-Chalmers 24 Mev betatron particle accelerator operating in x-ray mode that produced photons, electrons and neutron doses;

(3) two 250 KVP portable industrial x-ray machines (purchase date unknown, sold by GSA at auction 1974); and

(4) a GSI-owned iridium-192 gamma source (according to several affidavits from GSI workers that have been submitted by the petitioners and site expert previously to NIOSH, the TBD-6000 work group, the ABRWH and to SC&A).

According to OCAS-IG-003, all radiation doses must be bounded during the operational AEC contract period at AWE sites. Not only has that not been done for individual GSI radiation sources (1-4), but there is no real (measured) data upon which to base such internal or external dosimetry models. Therefore, NIOSH needs to add these doses to the Ra-226 doses to substantiate a sufficiently accurate total radiation dose during the radium era at GSI. That hasn't been done to date.

References Cited

1. Allen, D. White Paper. (DCAS) "GSI—Dose Estimate from Radium Radiographer to Employees Working in Production Areas." (three pages), May 2013 (PA 5 USC §552a cleared version).
2. Mauro, J and Anigstein, R. (SC&A) "Review of NIOSH Approach to Estimating Doses to GSI Employees Not Routinely Working in Production Areas at GSI." (one page), dated June 4, 2013. (PA 5 USC §552a cleared version).
3. Howard, J. Testimony before the U.S. Senate HELP committee October 23, 2007, outlining NIOSH's "maximum ambient dose" assignment to all administrative personnel including those who had no known radiation exposure. [http:// www.cdc.gov/washington/testimony/2007/t20071023.htm](http://www.cdc.gov/washington/testimony/2007/t20071023.htm)
4. Hinnefeld, S. E-mail response to GSI Site expert 5/30/13 e-mail, dated 5/31/13: explanation of how Dr. Howard's

“maximum ambient dose” is to be operationalized to GSI office workers (to view full text, see Attachment A).

Respectfully submitted,



Daniel W. McKeel, Jr., M.D.

6/5/2013

Current contact information:

Daniel W. McKeel, Jr., M.D.

ATTACHMENT A

(see following page)

ATTACHMENT A

Subj: Fwd: John Howard - "maximal ambient dose "
Date: Friday, May 31, 2013 8:33:23 PM
From: jwramspott
To: danmckee2

Begin forwarded message:

From: "Hinnefeld, Stuart L. (CDC/NIOSH/DCAS)" <stls8@cdc.gov>
Date: May 31, 2013 1:02:21 PM CDT
To: John Ramspott <
Subject: RE: John Howard - "maximal ambient dose "

Hi John,

For workers whose job assignment is outside of the production area of the plant where radiation exposures are highest (i.e., administrative areas) there is still some potential for exposure. To account for this, NIOSH dose reconstructions for these workers include an upper bound estimate of the internal and external doses that could have been received. The methods used to establish these values vary depending on the facility specific conditions and the availability of monitoring data. For example, if environmental air samples and film badge measurements are available, NIOSH might select the highest recorded locations as representative of the worker's exposure.

In the case of GSI, administrative workers could have visited the work areas where radiography and betatron activities were occurring. In the proposed model, administrative workers would receive doses based on a bounding limit of the amount of time they spent in the production areas of the plant. In this case, that bounding limit would be the "maximal ambient dose."

I hope this is helpful.

Stu

From: John Ramspott [mailto:jwramspott@cdc.gov]
Sent: Thursday, May 30, 2013 4:19 PM
To: Hinnefeld, Stuart L. (CDC/NIOSH/DCAS)
Cc: John Ramspott
Subject: John Howard - "maximal ambient dose "

Hello Stuart:

I would appreciate your assistance if you could with regards to the revision of Appendix BB. and the current discussions.

I am trying to fully understand some remarks that I just became aware of.

I have a couple of questions regarding what John Howard said in his 10/23/07 Congressional hearing testimony. Exactly what does "use of maximum ambient doses for workers in administrative areas" mean? What is the "maximal ambient dose for administrative personnel" at GSI? Will such doses be used at GSI in Appendix BB Rev 1?

This is where I saw John Howard's statement:

Note Page 9:

(quote)

• use of maximum ambient doses for workers in administrative areas; for example, even though workers in administrative areas may not have been exposed to doses in the work environment, NIOSH nevertheless includes the work environment exposure.

Such assumptions and methods, following the dose reconstruction procedures established through public rulemaking, have led to a compensability rate by DOL of slightly more than 30%.

(end quote)

I appreciate your help and look forward to your reply.

Regards,

John Ramsopft