

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

From: DanMcKeel
Sent: Tuesday, March 12, 2013 11:57 AM
To: NIOSH Docket Office (CDC)
Cc: danmckeel
Subject: Fwd Docket 140: GSI radium plumb bob 1953 newspaper story implications
Attachments: GSI radium plumb bob 1953 newspaper story implications

Dear Docket 140 officer,

Attachment: <TheGSISTolenRadium-F.pdf> 2.9 MB

I would appreciate your consideration of placing this important cover letter and attached e-mail as an entry under Docket 140 on the DCAS website. The subject matter is administrative review of the GSI SEC-00105. Thank you very much.

-- Dan McKeel 3/12/13

In a message dated 3/12/13 10:47:59 AM, [DanMcKeel](#) writes:

Stuart Hinnefeld (DCAS Director)
David Allen (DCAS)
Jim Neton (DCAS)
Ted Katz (DFO for the ABRWH)
Paul Ziemer (chair, TBD-6000 work group)
John Mauro (SC&A)

March 12, 2013

Attachment: <The GSI Stolen Radium-F.pdf> 2.9 MB -- Ted Katz, please circulate this file to all ABRWH members. Thank you.

Gentlemen,

The attached 5 page PDF file directly affects the future work of NIOSH in formulating with the TBD-6000 work group and SC&A a revised GSI Appendix BB to replace Rev o (June 2007). There are several important implications. The plumb bob refers to radium-226 sources, not cobalt-60. The UPI reports states the GSI radium source was missing for a week. DR. Ziemer noted in October 2010 that radium sources leak and that radon, which has not been bounded at GSI, escapes. The newspaper story from the Edwardsville (IL) Intelligencer newspaper dated Oct. 27, 1953, indicates the plumb bob incident at GSI was not an urban legend and did not occur at some site other than GSI. Note also that Dr. Ziemer says in the Oct. 12, 2010 TBD-6000 WG transcript that (AEC) legal dose limits do not apply to radium sources, so the statements that AEC dose limits were never exceeded at GSI cannot be accurate. The incident did occur at GSI in October 1953, and NIOSH has to be plausibly bound the dose with sufficient accuracy, since more than a single person was undoubtedly exposed. This will be difficult to do, since there are still many unknown variables associated with the stolen/missing radium source incident at GSI in October 1953.

-- Dan McKeel 3/13/13 Tuesday 10:30 AM CDT

Daniel W. McKeel, Jr., MD
GSI SEC-00105 co-petitioner

The GSI Stolen Radium-226 Plumb Bob Radiation Incident



- General Steel Industries (GSI) site expert John W. Ramspott has discovered more conclusive evidence about the date and circumstances of the "GSI stolen plumb bob incident."
- He and GSI SEC co-petitioner Daniel W. McKeel, Jr., M.D., wish to make several additional points about this discrete and better defined overexposure to one of two GSI 500 mCi Ra-226 sources that were first described in NRC FOIA 2010-0012 obtained by Dan McKeel. The new information was provided, through McKeel's efforts, to the Board, SC&A and NIOSH soon after the 1,016 pages of NRC FOIA unredacted material was released.
- The stolen plumb bob incident was known about through former GSI worker testimony during four GSI worker outreach meetings in 2006-2007. Transcripts and minutes of those meetings are posted on the DCAS website (www.cdc.gov/niosh/ocas).
- Radium-226 "Plumb Bobs" and the fishpole technique for nondestructive radiographic inspection (NDT) of metal castings and welds were well described and known to the Board and SC&A (see Anigstein 2009 SC&A review of portable GSI sources). These applications are described on the ORAU Museum website. It was also known that the AEC banned the use of Ra-226 in the early 1960s throughout the U.S.A because the practice was too dangerous.
- However, radium-226 source bounding dose estimates were not made by NIOSH until the after emergence of the NRC FOIA 2010-0012 materials. This delay of *years* is difficult to understand because "plumb bob" *fishpole NDT radiography had become synonymous specifically with radium-226 source radiography decades ago.*
- The banner above and the accompanying article on page 1 of the Edwardsville (IL) Intelligencer newspaper, 91st year, No. 293, 8 pages, dated October 27, 1953, establishes that a radium source was "lost" at the GSI plant in Granite City, IL. GSI management believed the source was in the plant, while others believed the radium was off-site and possibly was stolen. United Press indicates the GSI plumb bob radium source had been *missing for about a week.*
- Ramspott and McKeel believe the doses received by GSI plant workers cannot be plausibly bounded with sufficient accuracy because of the "fuzzy" details that are not known. Those factors include where in the plant the Radium source was first used and where it was taken, who took it and what was their job, and the way the radium source was handled, or mishandled, after it was removed from its normal location. That location is also not known.

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Radium-Filled Tool Missing at Granite City

An extensive search for a missing "plumb bob" filled with radium and valued at \$5,500 continued Tuesday at the Granite City General Steel Castings corporation plant. The bob has been missing for a week.

Plant officials believe the plumb bob was misplaced in the plant and not stolen. They warned, however, that the radium could prove dangerous to an individual if he carried the bob in his pocket for a time.

The object in the search is about one-half inch long and closely resembles that of a carpenter's plumb bob. It is attached to a black fishing line, is used in X-raying steel castings and is of no commercial value, a plant spokesman said.

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By United Press

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Footnotes:

1. As of March 12, 2013, it is still not known with certainty whether or how or when the missing GSI radium plumb bob source was found and returned to GSI. One part time GSI radiographer and laboratory worker indicated he became aware of the plumb bob incident after returning to GSI from military service in about 1956 or 1957. This corroborates the date of the incident as being consistent with 1953.

2. The Oct. 27, 1953 UPI newspaper article also refutes Drs. Ziemer and Anigstein's Oct. 12, 2010, TBD-6000 WG testimony that the stolen plumb bob was an "urban legend" (PLZ) or happened at a different site than GSI (RA). The meeting transcript states:

**TBD-6000 work group transcript, pages 146-147
TUESDAY
OCTOBER 12, 2010 (quote begins)**

**DR. ANIGSTEIN: So, this was 13
hearsay. Everyone who talked about it heard it 14
from someone else. 15**

**CHAIRMAN ZIEMER: Well, it may or 16
may not have been urban legend**

**DR. ANIGSTEIN: And this apparently 19
happened -- either it happened more than once. 20
As you say, an urban legend, it happened 21
someplace else, at another time, and simply got 22**

**CHAIRMAN ZIEMER: Well, in any 2
event, its pretty clear that radium wasn't 3
regulated.**

**But you're quite right: it wouldn't have been 14
regulated by AEC in those days, nor was there a 15
state agency to regulate it. 16**

**This is true not only of 17
radiographers in those days, but medical 18
applications as well. I was not aware that 19
people tried to bleed off the helium. The point 20
I was making on the helium build up was that 21
often led to leaking sources. So, radium 22
sources became a source of external 1
contamination very common in those kind of 2
facilities for there to be leaking sources that 3
contaminated the surfaces with radon daughter 4
products as the radon gas leaked out of the 5
source. 6**

**So, yes, they weren't subject to any 7
legal dose limits.**

(transcript quote ends)

There are multiple take away key points in this verbatim testimony:

(a) The 10/27/1953 newspaper article proves this episode was not merely "hearsay" or an "urban legend." The work group erred in dismissing and not taking action on this information.

GSI stolen Ra-226 plumb bob

(b) The presence of twin radium-226 sources at GSI for at least the covered period from October 1, 1952 through December 31, 1962 means that NIOSH is required to bound with sufficient accuracy the radon gas inhalation dose for all those years. This has not been done even though the TBD-6000 work group was aware of the plumb bob (i.e., radium-226) incident/s since 2006-2007, and of the probable presence of radon gas since October 2010 based on Dr. Ziemer's remarks quoted above.

Board precedent is strong that radon is a separate source term (see Blockson Chemical and Texas City Chemicals SECs) that must be bounded with sufficient accuracy under OCAS-IG-003. This has not been done at GSI. We know from NRC 201-0012 that both Nuclear Consultants Corp. and St. Louis Testing Laboratories both alleged they carried out leak tests on GSI sources. However, to my knowledge no corroborating records have been found that this was actually done.

Plausibly bounding radon gas from possibly leaking Ra-226 sources at GSI from 10/1/52-12/31/62 at GSI still must be done in order for NIOSH and the TBD-6000 work group to properly and responsibly revise GSI site-specific Appendix Rev 0 (June 2007).

(c) The oft quoted GSI AEC license assertion about the pre-1963 last two decades by [redacted] that AEC dose limits had not been exceeded and averaged 25% of the AEC limits conflicts sharply with Dr. Ziemer's assertion in the last two lines quoted above that, **"So, yes, and they weren't subject to any legal dose limits."** Nine Board members who voted to deny SEC-00105 on 12/11/12 erred in accepting the GSI [redacted] statement as established facts, when Dr. Ziemer had asserted 2 years and 3 months earlier that no AEC legal limits existed during the Radium-226 era (1952-1962) at GSI.

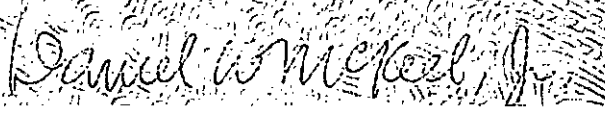
In previous papers, Dan McKeel has repeatedly inquired of NIOSH and SC&A the source document for the AEC limits they allude to in reference to the [redacted] AEC license statement about never exceeding and averaging 25% of then current (pre-1963) "AEC" radiation safety limits at GSI. Surely, an uncovered Ra-226 source, a plumb bob, that was missing for at least a week, was sufficient to cause a serious overdose breach of even today's stricter radiation limits allowed for the public by the NRC and other US Governmental agencies. Mr. [redacted] and Mr. [redacted] must have been aware of the Ra-226 plumb bob stolen/misplaced source incidences, and thus knew their license statement was not true. Noteworthy is an allegation by a GSI clerk who remembers the stolen plumb bob incident described in the October 27, 1953, issue of the Edwardsville Intelligencer newspaper. That clerk, who is still alive, remembers the exposed person who removed the plumb bob got sick, was hospitalized

GSI stolen Ra-226 plumb bob

and died as a result of radiation injury.
story in local Illinois newspapers.

McKeel are attempting to confirm that

Respectfully submitted to NIOSH, Docket 140, the ABRWH, and SC&A on March 12, 2013.



with

McKeel Contact Information:

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

Founding member, SINEW

SEC co-petitioner at GSI, Dow Madison
and Texas City Chemicals

