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

From:	DanMcKeel2@aol.com
Sent:	Sunday, September 02, 2012 2:42 PM
To:	Katz, Ted (CDC/NIOSH/OD); NIOSH Docket Office (CDC); melius@nysliuna.org; Kinman, Josh (CDC/NIOSH/DCAS); pl.ziemer@comcast.net; Ziemer, Paul (CDC/NIOSH/OD); Allen, David (CDC/NIOSH/DCAS); Neton, Jim (CDC/NIOSH/DCAS); anigstein@cs.com; jmauro@scainc.com
Cc:	danmckeel2@aol.com;
Subject:	McKeel annotated notes 8.28.12 TBD6K WG mtg
Attachments:	MCKEEL_8.28.12wg_Notes.pdf

Drs. Melius and Ziemer, Members of the TBD-6000 work group and full ABRWH
DCAS: David Allen and Jim Neton
SC&A: Bob Anigstein and John Mauro
NIOSH Docket 140 Office
Ted Katz, DFO (ABRWH)
Josh Kinman: NIOSH SEC Counselor
cc: GSI petitioners & site expert

September 2, 2012

Attachment: <MCKEEL_8.28.12wg_Notes.pdf> 802K

Dear Members of the TBD-6000 work group and full Board, DCAS and SC&A; NIOSH Docket 140,

I have attached my annotated detailed transcribed notes from the 8/28/12 TBD-6000 work group meeting (pages 1-37). Pages 20 and 26-30 of the main report, plus Appendix A (pages 38-39) and Appendix B (pages 40-42) address some of the key documentation Mr. Ramspott and I promised to furnish on August 28th. This documentation should supplement and complement the official court reporter transcript of this important GSI meeting.

Ted Katz: Please distribute to all Board members including the TBD-6000 work group and staff.

NIOSH Docket 140 office: Please consider this document for posting on the DCAS website.

Thank you -- Dan McKeel 9/2/12 Sunday

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Dan McKeel's Personal Notes on the August 28, 2012, Meeting of the TBD-6000 Work Group of the ABRWH

September 1, 2012

by

Daniel W. McKeel, Jr.
GSI SEC-00105 Co-Petitioner

[Transcriber's note: I am preparing this personal transcript because the next full ABRWH ("Board") meeting, when a final vote is scheduled for the General Steel Industries ("GSI") SEC-00105, is scheduled for September 19, 2012. I have asked Ted Katz that an official work group meeting transcript be delivered to the petitioner's and to GSI site expert Mr. prior to the full ABRWH meeting in Denver. However, based on past experience, I cannot depend on that happening.]

DISCLAIMER: *Transcriber makes no warranty of total accuracy of the following transcribed, contemporaneous and handwritten notes he made during the August 28, 2012, meeting of the TBD-6000 work group. Passages set off by quotation marks refer to verbatim text of spoken words in the notes. Portions of notes that are not in quotes are "as is" transcriptions of the handwritten notes. Passages where the identity of the speaker was unclear and/or words were known to be missing are so indicated. Transcriber Dan McKeel was also a meeting participant. His comments not on the record (not made orally) are noted as "comments to self" or "editorial comments" and are set off by parentheses. No attempt was made to capture all of the transcriber's oral exchanges with the work group. Those McKeel remarks will be captured in the official court reporter transcript that has been requested from DFO Ted Katz.*

(Agenda *as circulated by Josh Kinman prior to editing of the public version*)

ABRWH
Work Group on TBD-6000
9:00 a.m. EDT

Cincinnati Airport Marriott
2395 Progress Dr.
Hebron, KY 41048
859-586-0166

Conference phone: 1-866-659-0537
Participant Code: 9933701#

AGENDA

1. Welcome and roll call.

2. SC&A surrogate data review for the General Steel Industries SEC petition 00105 and DCAS responses; related SC&A recommendation for the use of GSI data and DCAS responses. (Bob Anigstein/John Mauro; Dave Allen/Jim Neton -- response)

3. GSI petitioner comments and responses (Patricia Jeske/Dan McKeel; Dave Allen/Bob Anigstein -- responses to any technical matters).

4. Work Group discussion and recommendations on the use of surrogate data and/or alternative approaches. Complete SEC recommendations.

5. Status of remaining TBD issues (Dave Allen) and discussion of open issues as time permits.

6. Overview of plans for the full Board presentations on September 19, 2012. (Paul Ziemer)

7. Adjourn (3:00 p.m.)

[McKeel added notes: A 15 minute break was taken between agenda items 2. and 3., and there was a 1 hour lunch break between items 3. and 4.]

Dan McKeel's hand written notes 8.28.12 begin:

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Ted Katz roll call: **Board members** (all in room): PLZ present; Beach present; Poston present; Munn present. No Board members on phone. **DCAS:** Neton present; Allen present; Kinman present. **SC&A:** Anigstein present; Mauro present on phone; Thurber present on phone. **Federal:** Katz present; Kinman present. (transcriber note: I did not hear Jenny Lin's name). **Public/petitioners** (all on phone): Ramspott present; McKeel present; Jeske present.

[*the notes hereafter are verbatim, raw, nothing has been added or filled in, nothing left out. McKeel comments to self in parentheses*]

[1] Katz: "agenda."

[2] PLZ [Paul Ziemer, WG chair]: - "Focus is on full Board issue. WG motion discussions on residual period" -- (McKeel note to self: no action on SEC-105 was mentioned). "Applies to both operations and residual periods. Issue of surrogate data ("SD") uranium part of DR internal dose. internal dose primary for residual period."

"SC&A recommendation, NIOSH and petitioner comments. Seen Bob's paper..." (McKeel note: singular, Bob wrote two papers -- no mention of ALT. model paper.) "Bob..."

[3a] Anigstein: setting up (need his PPT [Powerpoint]). "My..."

[3b] PLZ [Ziemer]:. "Speak up."

[3c] Anigstein: "In all fairness, original Appendix BB 2007 -- SD from TBD-6000 5 sites."

"In all fairness, Board set up SD criteria few years later."

"Criterion 1: 1993 (date was) very detailed" - (MCKEEL NOTE: "NO" -- was very limited). "One set of data was used. One scenario not appropriate."

"Criterion 2: Exclusivity stringently justified"
"Criterion 3: Site or process similarities. Don't know where site was"
"Criterion 4: Time period -- accepts NIOSH"
(Criterion) "5. Biggest issue plausibility: slow deposition not plausible."
Then Bob tracks "adjustment for uncertainty, never get perfect surrogate, make accommodations. Judgment difficult. No monitoring URANIUM; Purchase Order duration handling..."

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"Purchase orders on firm ground. Uran. handling operations... NIOSH didn't use ..." (words missing)
[4] Poston: "Is it not subjective thus far?" (McKeel comment to self in notes in text and in margin: Arguing with SC&A! Can do uncertainty analysis - "should be adjustments")
[5] Anigstein response to Poston: "should use site data... on why he says --> data uses in TBD-5000... geometric versus arithmetic mean...error that needed to be corrected... 590 Harris-Kingsley arithmetic mean 162...geometric SD = 5 could call it SD (standard deviation) -- YES!! Got to 264 (error)... NIOSH prev(s?)ent value too high, make geometric mean. One number by NIOSH can't be geometric mean; driver of logistical regression."
[6] Anigstein: Going through adjustments for

1. "Geometric mean - 1 no" (McKeel: *you need multiple numbers to establish a mean; NIOSH has only a single value, a valid point - but Allen didn't respond to this criticism*)

2. "8 hr day -- NIOSH assumes 4 hrs with uranium, a 50% decrease -- 75% of 50% (to be) consistent with TBD-6000."

"Criterion 2. NIOSH agrees not stringently"...

"Criterion 3. Slugs do not have same properties."

"Other SD sources (criterion) 3 or 4. Is work site identified? Harris-Kingsley don't mention (work sites). Does slug..."

"Criterion 4. Has been resolved -- no measures taken to reduce uranium dust at GSI"

"Criterion 5 -- Plausibility... uranium handling, immediate dust cloud, 1/2 hr/handling" (peak drawing by McKeel showing part going into mouth and part settling in a straight line to ground). "... like a belt -- that and only that settles then 'poof it's gone' ".

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"SC&A calculates it will take a 5 micron AMD (particle)... (words missed) to settle..."

"Space heaters up on wall -- higher than a few feet, thus more on the floor."

"Latest report Simonds-Saw / took days to settle" (McKeel note to self: but does not [say Simonds-Saw was a rolling mill operation])"

"TBD-6000 30 days for equilibrium with each 'dust stir up event'."

2. "Deposition based on 1..."

"1961-62 maximum, constant all time thereafter -- **not a scientifically acceptable model.**" (emphasis added)

[7] Poston: Calls Anigstein out on use of an inadvertent double negative: Anigstein agrees.

[8] Anigstein:

3. "Air levels and surface concentration cannot be calculated from air alone. Loose contamination on incoming ingots and dingots. Ground by feet, trucks -- NOT satisfied."

[9:36 a.m.]

"One alt. scenario -- **as we were directed** (emphases added) -- did find Adley melt plant Bldg Hanford -- **handling rods** (emphases added) -- **unloading with forklift** (emphases added) 3900 dpm vs 590 dpm -- 6x higher... still have concerns." (NOTE: slug = "powder metallurgy"]

[9] PLZ (Ziemer] -- "Any work group questions?"

[10] Poston Q1: "All measured? -- Hanford --"

[11] Anigstein answer to Poston Q1: "Yes --low 88 was machined"

[12] Poston Q2: "Are these maximum values from Tables?"

[13] Anigstein answer to Poston Q2: "Difference unloading the truck -- speculating don't know but guessed two locations, no further info, many measurements, only data on handling 'cold uranium'."

[14] Allen. "One issue is much higher in area from other operations -- impossible to say is purely (from) handling cold uranium. Can say. **Not a good set of data to use**." (emphases added)

[15] Beach: "Best guess..."

[16] Anigstein: "no surrogate data is 'that good'. **Just a few default parameters from other places**" (emphases added; passage refers to his new alternative uranium intake model for GSI).

[17] Mauro: "Start point long time ago; NIOSH uses Mauro (at first) supported -- ingots were not as rigorous as slugs. Important message: 550 (wrong 590) -- is Harris-Kingsley a good starting point?"

"Separate start point from mechanics -- SC&A criticized NIOSH approach. **Bob has come up with a whole new approach**

(emphases added). Compare strengths -- start with real 1990's data. I hope that is helpful."

[18] PLZ [Ziemer]: "Let's hear alternate model." (McKeel to self: **but Allen speaks instead**) (emphases added)

[19a] Allen: "Not much data... I worked at uranium foundry 18 years. Pointed out not many air samples. TBD-6000 also used airborne 'evolutions' one was handling uranium ingot metal in Harris-Kingsley." **[19b] McKeel:** Note to self: No mention of **PUTZIER effect** thus far)

[20] PLZ [Ziemer]: "most of other data is handling plus. All involve handling."

[21] Allen: "Number of places, have issues -- 3 sites found some (surrogate data), not a great deal. Most pertinent (McKeel: site not named) 3 samples, hoist to billet [Leblond?]. Others had issues" -- DID NOT MENTION (that Simonds Saw was steel rolling mill operation) -- "Does show uncertainty -- Need real data (to make) surrogate data OK."

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[22] Mauro: "Process start with slug. There are, data out there." *--(DWM -- Which ones?) "Are there any that fall into place? **If you can't come to that place, SD falls apart**. **Have a pretty nice set; pretty close to GSI**." (emphases added)

(23) McKeel note to self: "NO -- 3 sites = 2 slug, 1 billet"

[24] Anigstein: "Chambersburg data -- **what they (are) handling is 1/2 inch by 3/4 inch slugs, 75 lbs over one day**." (emphases added) "Smallest at GSI hundreds of pounds, ingots even higher."

[25] PLZ [Ziemer]: "Geometric mean would get more plausible value. Is that right, Dave? Handling, everyone agrees, is at the lowest end of all this. Could say bounding, but they have plausibility. Is that plausible, Bob or John? Know something is

very low." (McKeel margin note to self: No forklift data cited was 6-fold higher)

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[26] Anigstein: "10^{-6} resuspension factor is too low for an active area."

[27] PLZ [Ziemer]: "Not using 10^{-6}.

[28] Allen: "Yes, we are."

[29] Mauro: "Plausibility clause came into being because of applying to Texas City Chemicals the Blockson model. Blockson handled thousands of pounds (of uranium); TCC handled 300 pounds over a very short period."

(McKeel observation to self: Mauro now tries to discredit plausibility criterion as useful for GSI model)

"True, ... ability ...(missed some words) but not the attention; can't use plausibility to apply to a big number and walk away = No SEC."

"Inappropriate..."

"I want to help out a little here..."

"**If there is a model problem, we can resolve this**" (emphases added)

"**A number of scenarios a lot better**..." (emphases added; McKeel to self: statements without backup -- what scenarios, what sites are better? And, define "better," in what way better?)

[30] Munn: "Entire discussion is extremely difficult. We are dealing... Science around uranium is quite well established. Sizes of particulates that create biohazards. **Administrative processes, looking at details (possibility) can make statements over and over.**" (emphases added) "How to focus on large known issues? **Are models correct, debates assume there is a significant hazard in handling this material.**" (emphases added)

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"Devil is in the details -- **dealing with minutiae**." (emphases added)

"Can't we do any..." (missed words)

"We have done a remarkable job of holding up to light."

[31] PLZ [Ziemer]: "On item 1. (of agenda) **the work group and Board will have to decide if slug facility is suitable surrogate versus using back extrapolation from 1993**." (emphases added) (MCKEEL NOTE: Later I stated to the work group the time to do this and decide on the SEC was today, but they declined to vote and did not make a clear decision about the existing NIOSH Appendix BB June 2007 uranium intake model. They left these key matters, which were work group goals for today, open for the full Board to decide at the September meeting presumably. I believe the decision to take this avoidance approach happened during the lunch break.)

[32] Beach: "40 years back plus"

[33] Anigstein: "Alternative model bears on this." (Dr. Ziemer concerned work group here decides (to) recommend NIOSH approach.

[34] Mauro: "Light went on -- Bob's work can be used as a validation. Whole another way -- not a replacement -- **do we come within an order of magnitude. Not a bad number**." (emphases added)

[34] PLZ [Ziemer]: "I'd like to hear NIOSH comments on other criteria."

[35] Allen: "Exclusivity constraints -- **we agree not justified**. (emphases added) [McKeel margin note: "Big!"]

"Site processes -- no task of moving uranium metal."

"Temporal no issue."

"Plausibility"

[36] Poston: "We have been recalibrated by Wanda. **Arguing about insignificant things**. **We know where it goes**."(emphases added)

"Values vary hugely -- pick blindly - experience plays a role."

(37) McKeel note to self: "BUT YOU HAVE NO EXPERIMENTAL DATA"

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[38] Beach: "We have to go through the surrogate data for the Board. That's why we are here."

[-- Break for 15 minutes, hear McKeel afterwards: 10:25 to 10:40 a.m. --]

[39] McKeel written talk is three pages to be inserted here. The oral version will have to await the official transcript as McKeel deviated some from the written remarks to accommodate new information from today's meeting.

McKeel remarks on 8.28.12 to the TBD-6000 work group are on following pages 11/10b, 12/10c and 13/10d ...

A few of the added points McKeel made orally were:

1. Uncertainty analysis is a formal statistical method. It requires detailed analysis of the uncertainty components.

2. I was shocked to hear that uranium doses and discussions thereof were "insignificant. trivial, not important, that they "assumed there was some hazard" and discussions were "difficult" and the work group was "dealing with minutiae."

3. On page 2, item 4a, I inserted vacuum Ur data had been back extrapolated from 1993.

4. David Allen's newest candidate surrogates are NOT good ones: 2 are other slug facilities, 1 billet facility, 1 rolling mill.

McKeel Comments (ver2): 8/28/12 TBD-6000 Work Group

1. SC&A surrogate data findings:

a) I agree with SC&A the TBD-6000 slug facility does not meet Board SD criteria and have been saying so on the record since 2008.

b) The scope of the SC&A tasking was too limited -- GSI uses lots of models based on surrogate (not real measured) data. MCNPX Betatron models were developed by SC&A as a research project that John Mauro hoped would be applied at many sites. There were not then, and are not now, any real data sets of measured photon and neutron doses for 24 to 25 Mev Allis-Chalmers vintage 1952 Betatrons and Betatron facilities built to Allis-Chalmers specifications. I argue that the GSI betatron facilities were unique, not strictly duplicated anywhere else. There is no comparison in the shielding afforded, for example, by the 70 ton steel plated control room door filled with steel pellets that Allis-Chalmers donated to the Milwaukee School of Engineering, and the two inch standard metal room doors of the GSI Old and New Betatron control rooms that offered little protection to operators inside the control rooms.

2. Allen response to SC&A surrogate data findings:

a) David Allen agrees the slug facility uranium operations were not rigorously justified for comparability to GSI under Appendix BB Rev 0. However, Allen argues, that was acceptable because Appendix BB was issued before the Board SD criteria were ratified.

I believe this analysis misses the point. The NIOSH uranium intake model for 1953-1993 is getting its final assessment now, in August 2012, a belated three years after the Board SD criteria were finalized for application in situations just like this one. So the Allen DCAS argument does not pass muster in my opinion,

b) Without reviewing all my reasons here, my white paper goes into detail on each DCAS rebuttal to SC&A's findings that DCAS failed to meet Board SD criteria.

3. SC&A new alternate uranium intake model for GSI:

a) Petitioner's view: not SC&A's role to develop *de novo* models. That is DCAS's job.

b) Model is supposed to be based entirely on GSI data but it is not.

c) Model relies on differential equations: some constants are defined with respect to their source; other equation constants are not sourced. My paper pointed out these missing source citations.

d) In the last sentence, SC&A clearly indicates it is offering their model for DCAS to use in the dose reconstruction program. This is clearly NOT "evaluation." SC&A is performing NIOSH's job in designing this new intake model.

e) My comment paper offers several additional specific concerns. In particular, in order to be able to bound uranium intakes with sufficient accuracy, NIOSH needs urine bioassay and breathing zone or sequential area air monitoring data which they do not have.

4. Allen response to SC&A's alternate uranium intake model for GSI:

a) Allen dismisses the SC&A model in one sentence saying you cannot back extrapolate data 40 years from 1993. While I agree wholeheartedly, Mr. Allen in saying this also invalidates NIOSH's own June 2007 Appendix BB uranium intake model that relies partly on the uranium activity associated with the small industrial vacuum sweeper (ORNL 1993).

The new information in [5] on the residual period years 1978 to 1993 provides compelling evidence that bounding the airborne uranium at GSI with sufficient accuracy for SEC-00105 class members would be difficult or impossible.

b) Allen says the new SC&A model has way more uncertainty than the surrogate data NIOSH uses from the slug factory. He ignores SC&A's finding that use of the slug facility data has failed the five Board SD criteria. He employs an absurd argument: if one has no or insufficient real intake data, then one can use inappropriate surrogate data that violates Board SD criteria to bound uranium intakes (***reductio ad absurdum* argument**).

c) Allen does not mention application of the NIOSH SD criteria in OCAS-IG-004 to the slug facility. Nor does he compare the NIOSH OCAS-IG-004 and Board surrogate data criteria with respect to GSI uranium intake data modeling.

5. New information on the GSI residual period from 1978 to 1993 has recently been gathered and transmitted to the TBD-6000 work group and to the full Board and posted on the DCAS website. In brief, there were two known extensive cleanup, power pressure washing, and rewiring and renovation campaigns to the New Betatron building. The first was in August 1978 by Michigan Metals Processing who had a three year contract with National Steel. The New Betatron facility was cleaned up, rewired and power washed by Power Blasting Company in August 1978 and used for offices and classrooms. The MMP contract work also included cleaning up buildings 8, 9 and 10 during the three year period. Apparently none of the MMP workers wore protective clothing or respirators and our eye witness states the subject of possible uranium contamination was not mentioned.

There also was a power washing by the Power Blasting Company to the Old Betatron building interior in 1984. Photographs of OBB before and after the power washing in 1984 show marked stripping off of the white paint on the walls from the force of the power washing (see Figure on page 20).

We believe a company named Affiliated Metals occupied former GSI building 6 during part of the residual period and continued the steel pickling operation that MMP had initiated.

Thus, large areas of the former GSI building complex and both Betatron facilities were extensively renovated, cleaned, power washed with sufficient force to strip paint from the walls, rewired, paneled (NBB only), and repurposed for class room work and pickling operations. This must have created massive disturbances of the surface dust on floors, wall, ceilings and in air vent ducts. It is difficult to imagine this scenario could be modeled accurately in the uranium transport and NDT paths, even with monitoring data.

However, during this same time period, no workers were badged and there was no monitoring for uranium done except for the ORNL/DOE FUSRAP survey of the Old and New Betatron buildings and the removal of some uranium by them from the Old Betatron facility in 1993. The DOE/ORNL cleanup was started in 1988 and completed in 1993.

Conclusions:

1. NIOSH has no acceptable uranium intake model for GSI after three attempts.
2. NIOSH rejects the SC&A July 25, 2012, alternate intake model for uranium.
3. Airborne uranium levels varied widely because of renovation and cleanup and repurposing work in the GSI Betatron buildings and buildings 6, 8, 9 and 10.
4. We believe the conditions described cannot be modeled absent measured data.

[End of McKeel oral remarks]

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[40] Pat Jeske [GSI SEC petitioner Patricia (Coggins) Jeske]: "New information from my uncle ... used gas masks, not sure about Affiliated Metals being there."

[41] John Ramspott: "From various sources. One gentleman auto dealer worked (at GSI) 1978-81. He personally did it, with son of last man who worked at GSI last. Dow worker at Granite City, while doing rewiring. Three people, all prior to FUSRAP cleanup. Dr. Ziemer and Neton can't separate operational and residual periods. We don't know when vacuum was put in there. Was not in auction... vacuum cleaner."

[42] PLZ [Ziemer]: "Will listen to SC&A."

"Neither, Ted nor I tasked SC&A to come up with an alternate model. Not tasked to develop this model. Some think we did." (emphases added)

(43) (MCKEEL NOTE pg. 8b: "I have in writing from Ted he (Dr. Zeimer) did task SC&A". Furthermore, I have the complete e-mail correspondence with my initial questions and Ted Katz responses where Ted clearly implicated about he and Dr. Zeimer (a) discussed the surrogate data paper and alternate model work with Dr. Anigstein before the 7/16/12 SD paper was submitted to the Board by SC&A, and (b) Ted clearly stated that Dr. Ziemer allowed this second alternate SC&A model paper to go forward. I shared this e-mail correspondence with all Board members. Dr. Ziemer is thus disagreeing in public, on the record on 8/28/12, with what Ted Katz wrote to me was the true situation with respect to tasking the SC&A 7/25/12 alternate Ur-238 intake model paper for GSI.

The opening section of the alternate model paper indicates it was sanctioned by Dr. Zeimer. Related to this transcript, it

is also noteworthy the sole author of the 7/16/12 SC&A surrogate data paper was Dr. Anigstein. Dr. Anigstein and John Mauro and a third person co-authored the SC&A alternate model paper. Dr. Mauro repeatedly refers to "Bob's work" and "Bob's approach" when he, himself, was a co-author of the alternate model. The latter fact was not mentioned anytime during the entire TBD-6000 8/28/12 work group meeting)

[44] Anigstein: "Overlooked TIB-70 removal rate and resuspension rate. **No drastic changes in Old Betatron Building remained**." (emphases added) If there was cleanup -- (pause) -- we have found something internally consistent. Can't find slide... cartoon house -- something infiltrates through the walls. Airborne material generated. Arrows going up and down. Here's what comes in (by P.O.= purchase orders) extrapolated 1953-Feb. 1958 "conservative" use highest."

(45) McKeel: RE: [44] emphasis added passage; I have this statement boxed for emphasis on my hand notes. McKeel had just presented new eye witness evidence that the Old Betatron Building underwent power water "blasting" in 1984 that was forceful enough to strip white lead paint from the concrete walls before ORNL and DOE did the 1993 cleanup. My margin note: "DWM - This ignores 1984 power washing I just put on the record."

Page 8 McKeel Notes continues...

[46] Beach: "June 1993 is when measurements were made."

[47] Anigstein: "Good number source 1 daily. Uranium handling = Rate / Velocity... **Bottom line: to show it can be used for DR**." (emphasis added) "Take geometric mean: factor of 2 not bad, right ball park." Arrow drawn to geometric mean <--[next verification]. "Very little resuspendable material left."

"Deposition rate 1200 Beq/meter/day."

- Removal rate - 1 datum | had to be added up
- 43.6 average activity | to a single number

"These are plausible upper bounds -- reasonable. <1 mg/cu mm for uranium dust."

(McKeel Notes to Self)

(1) OBB was power washed 1984 - berm placed + fans + furnaces

(2) Data in 1993 is not related in a simple way to 1953.

(3) Anigstein *et al.* paper says they were tasked by Dr. Ziemer to do ALT. model. [Musing to self: Do I say this now or later LATER to full Board; see how work group votes?]

(4) The SEC recommendation has to be based on what NIOSH can bound with sufficient accuracy; what SC&A can do is immaterial.

[Note] Ted Katz says regs do NOT say who has to determine dose with sufficient accuracy. McKeel countered Katz had made a "preposterous statement". Everyone knows that is NIOSH's role.

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[48] Ramspott: " was there 1984 cleaned up the Old Betatron Building and the New Betatron Building. Red and blue dots, see berm, not there is "GSI days." Stored leaky oil and transformers. Berm 18 inch wall, 25% shooting wall. Red dots in corner. So localized. Berm area is where they worked -- kinda unusual."

"Red dots in between control room and vault,"

"No dots in control room."

"Was 'cleaned' -- [DWM note to self in hand notes: "JWR was power washed/blast -- did NOT use the word 'water.']

"Two Betatrons 4000 pounds each on floor of Old Betatron Building."

[49] PLZ [Ziemer]: "These are sampling sites, not measured."

[50] Ramspott: "Not just sampling. Another drawing shows "hot" spots."

[51] Anigstein: "I put on red and blue dots to correspond to plot coordinates."

[52] Beach: "Are you..." (words may have been lost)

[53] Allen: "198 dpm Appendix BB is bounding, few other sites. Have not dismissed SC&A model but have problems heterogeneity after cleanups. SD is better approach. Other site"... (missed words)

"**True intent (laughing) see what work group feels - use what we have**." (emphases added; here Mr. Allen was asking for how the work group was going to vote, I believe, but this is speculation). "Starting point first, then mechanics."

[11:45 hrs ET]

[54] PLZ [Ziemer]: "Work group recommends to the Board. What we say is not the final word. Finding common ground is helpful. Board can go for SEC both periods. Or, one or the other. Need some level of SC&A and NIOSH agreement. We can present to Board what issues are."

[55] PLZ [Ziemer]: Asks Anigstein "are SC&A..." (words missed)

[56] Anigstein: "SC&A has been interviewing GSI for 5 years. Even though this model was just recent. Measurement validation by NIOSH."

(McKeel aside to self: goobledegook - no mention of a cleanup)

"Now getting second hand info."

"When I did model, I knew NBB was cleaned up."

"OBB was just left."

"Allegation of competence: **done by ORISE MARSSIM manual** (emphases added) more reputable competent people in business" -- -- (McKeel comment to self: MARSSIM, (1) from the EPA website general FAQ, *"MARSSIM was developed collaboratively over a four-year period, by a multi-agency workgroup. Members of the workgroup represented the four federal agencies that have primary responsibility for controlling radioactive materials."*); (2) ORNL did the GSI cleanup, not ORISE; (3) ORNL operated under a DOE/ORNL expedited cleanup because the radioactivity amount at GSI was anticipated to be low)

"Berm - only 10 to 15% of data" [*sic*: floor space] (McKeel observation to self: OBB floor space *vs* 25% Ramspott had estimated).

[57] Ramspott: "We invited everyone to visit that site (GSI) as we did. (There) was mention of power washing in past transcripts. If there was a cleaning, and that was done. RE: berm, must clean old concrete before installing new."

"I suspect ORNL, they say there was a huge door "main door" to left of drawing. Was knocked in wall after plant closure."

[58] PLZ [Ziemer]: (I'd like to hear) "Neton remarks on NIOSH approach."

[59] Neton: "Leblond 3 billets hooked. 500 "worth considering", I think 200 is bounding. **SC&A feels could be bound some way**." (emphases added).

(DWM note to self: uranium fission & activation ignored)

[60] Mauro: "agrees with Neton."

[61] PLZ [Ziemer]: "Mauro want to agree: slug stamping not like at (GSI) - troubled. 500 not analogous. Go with different surrogate."

[62] Mauro: "Can use some surrogate data. **If scoured, what can you do? Have to throw the model out.**" (emphases added)

[63] McKeel: Assailed John Mauro's "if scoured" remark, making a bold statement that:

(1) Defended 's eye witness statement that "power blasting did occur for OBB in 1984", and said he spoke for all nuclear weapons workers in the EEOICPA program who generally offered honest, accurate, eye witness testimony.

(2) That petitioners have photos they can share that prove white lead paint covered the OBB walls during GSI operations, in about 1964, in contrast to DOE / ORNL photos taken in 1993 at the time of the uranium cleanup that clearly show 75% of the OBB white paint has been stripped off leaving bare concrete walls with faint patches of white paint remaining.

[**NOTE:** See **Figure 1** of OBB 1964 versus 1993 next page 20]

(3) GSI uranium was not as "simple" an operation as Dr. Mauro had stated because 50% of the time at GSI, after NDT radiography, the "cold uranium metal" was "hot" from being subjected to 24-25 Mev Betatron x-irradiation that caused both photofission and photoactivation.

[64] PLZ [Ziemer]: Quibbled to Dr. McKeel that GSI uranium "was not thermally hot."

[65/65] McKeel/Ziemer exchange: McKeel countered the Ziemer attack about how McKeel used the term "hot" as semantic nit-picking that has occurred before (hot particles), asserting that: (a) GSI uranium from MCW *was subjected to* Betatron fission that generated new radioisotope daughters, could Dr. Ziemer disagree with that statement? Dr. Ziemer answered "No"; and (b) GSI uranium from MCW *was subjected to* photon activation that also generated new radioisotope daughters, was that right? Dr. Ziemer agreed "Yes", the statement was correct, and added that "they have been accounted for in Appendix BB 2007."

Power Washing in 1984 Removed Much of White Lead Paint on GSI Old Betatron Walls

Above: GSI Old Betatron shooting room 1964 with walls covered in white lead paint

Below: By the time of the ORNL/FUSRAP cleanup 1993 most of white paint was gone

(67)[Footnote inserted for clarification: *Dr. Anigstein several times mistakenly referred to ORNL as "ORISE," which is a different organization sited at the huge Oak Ridge National Laboratory campus in Tennessee. The FUSRAP report cover pages on the GSI OBB and NBB cleanups clearly state "ORNL" was the contractor.*

Also, Dr. Anigstein made a statement declaring that "ORISE" (sic) was the most competent organization in the U.S. to perform uranium radiologic surveys and cleanups. The fact is, that in 1997 Congress judged DOE, that hired (contracted with) ORNL as primary FUSRAP cleanup agency at GSI, was so incompetent in conducting cleanup operations, it:

(a) Transferred FUSRAP cleanup responsibilities from U.S. Dept. of Energy ("DOE") to the U.S. Army Corps of Engineers;

(b) DOE was relegated to a legacy record-keeping role within FUSRAP; and

(c) Eliminated part D of EEOICPA on which DOE was lead agency, and substituted Part E with US Dept. of Labor ("DOL") as lead agency.

All three situations—(a), (b), (c)—prevail today.]

[68] Ramspott: Also challenged the "if scoured" Mauro statement and reiterated the Old Betatron cleanup did occur in 1984 and this was not the first time this fact had been brought to the attention by the petitioners to the work group, Board, SC&A and NIOSH. McKeel had done so in a 6/13/12 paper commenting on a 6/08/12 DCAS-Allen memo, prepared for the 6/14/12 TBD-6000 work group meeting. This paper was circulated to all participants at the 8/28/12 WG meeting on 8/30/12 by Ted Katz. (see **Appendix B**). John Ramspott offered to contact during the lunch break to have call in to the work group and give his OBB power washing testimony in person. Dr. Ziemer declined to accept this proposal.

[69] **Mauro:** Confirmed again (twice) -- "stipulated, a legal term I've used more recently" -- that since the OBB was cleaned, the SC&A alternate intake model for uranium had to be withdrawn from further consideration [McKeel paraphrase of this part of the conversation].

[70] **Work group members as a whole:** There followed by unanimous acclamation a statement that "**All work group members accept testimony that the Old Betatron Building was cleaned**." (emphases added)

• A lunch break followed from 12:15 PM to 1:15 PM ET. McKeel logged back on at 1:13 PM ET when 7 people were participating in the conference call.

[71] **PLZ [Ziemer]:** "How much mutual agreement is there on criteria 2 and 4?

[72] **Anigstein:** "On 4 we agree."

[73] **PLZ [Ziemer]:** "Criterion 2 did they agree?"

[74] **Anigstein:** "Site or process -- similarities -- if NIOSH used."

[75] **PLZ [Ziemer]:** (Putting words in mouth). "Feel more comfortable with hierarchy issue if distinct advantage -- and if process and plausibility."

"We still need to agree and accept surrogate data."

[76] **Neton:** "Criterion 1 -- **if cleaned up; SC&A would agree**." (emphases added)

[77] **Anigstein:** "But adjustments not made appropriately. Criterion use surrogate data if no" (cut off by next speaker)

[78] **Mauro:** "**I agree with Bob. Now we have to use surrogate data. Appropriate to use surrogate data, move into that realm. Start with a good data set**. (emphases added) Agree to" (continue next page...)

[78] **Mauro (continued...)** "use a better data set."

[79] Anigstein: "Disconnect between ORISE (sic) Old Betatron Building cleanup; doesn't seem plausible. Pattern along railroad track."

[80] Mauro: "**Do we want to stipulate, rather than dispute, there was an old Betatron Building cleanup? -- can't use our model. Set it aside.**" (emphasis added) "Pursue, surrogate data, 'our work' -- whether we can find a starting point. Tractable point. All issues with surrogate data -- can work through that.

(81) McKeel clarifying editorial comment that must be made here: *[There is a dispute about how the SC&A alternate GSI uranium intake model paper of 7/25/12 came to be tasked and approved. The SC&A report and e-mail from ABRWH DFO Ted Katz to McKeel clearly indicate that SC&A and Dr. Zeimer, with Ted Katz present, discussed the SC&A surrogate data 7/16/12 paper and the SC&A 7/25/12 alternate model paper before either of the reports was released to the Board or the public, including McKeel. Mr. Katz clearly indicates that Dr. Ziemer approved both SC&A papers going forward. SC&A indicated the alternate model paper was approved by Dr. Ziemer. The complete McKeel-Katz correspondence has been previously circulated to all Board members by Mr. Katz.]*

[82] PLZ (Ziemer]: "John (is) plausibility like concentrations? Picked a surrogate for GSI. Would fulfill plausibility -- reasonableness of model."

"Once you pick a surrogate -- amongst new ones, we have that Mauro would not refer to model as plausibility. What models should be used operational and residual periods -- semantics."

"PLZ-Allen-criteria / plausibility -- how? We use it? refers not to value but to manner. Tractable if we have a starting point."

[83] Mauro: "I am OK with that. Mechanics are easy, episodic dust all very tractable IF we have a good starting point."

(84) McKeel margin note: "Illogical, hard to get start point."

(85) Munn: "Know what the material does. Poster child for why Appendix BB put together. Info is not clearly available. Entire knowledge base, don't have to do." (McKeel to self: No! Many Appendix BB scientific flaws have been pointed out repeatedly)

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[86] Beach: "Are dissimilar processes -- we don't know. Charter (*sic*?) surrogate data is not similar."

[87] Allen: "Models don't count. Process similarities -- handling is not a process. Surrogate data from multiple sites is bounding."

(88) McKeel must be made editorial comment: [*Mr. Allen's preceding statement in [87] is NOT CORRECT if all the surrogate sites use dissimilar processes and are not stringently justified as to site comparability using the Board and/or NIOSH surrogate data criteria. That's why these SD criteria were formulated in* the *first place. The work group is trying to obviate and by-pass their own SD criteria that are proving "inconvenient" to the recommendation that NIOSH has advanced, and some Board members clearly are biased to support, to deny SEC-00105, based on methods it has in hand, because it is currently able to bound with sufficient accuracy all internal and external doses from all sources during the operational period (1953-June 1966), and do the same for residual uranium (July 1966-1993) during the residual contamination period.*]

[89] McKeel: "There is no good start place SD for GSI" is what I have asserted repeatedly.... (words of all McKeel comments missed. Must refer to official TBD-6000 WG 8.28.12 transcript).

[90] Mauro: "Is the metal we are handling Ur milligrams in air plausible in air? Composition of metal. This is the only question." [McKeel arrow to "composition" - "NO, IT IS NOT!"]

"Ingots and dingots have varying thickness Mg Fluoride "bomb" crust. with different -- **simple as you can have**." (emphases added)" "**NIOSH picked a poor surrogate datum. Have found one. Simplest of things**." (emphases added)

[91a] McKeel: "Dingots and ingots -- too few -- some isotopes"... (most of this comment not recorded, see official transcript)"

[92] Anigstein:

(1) "As fission products "miniscule" below unity -- far lower, not an issue -- for DR. All latest physics paper. Don't need to refer to 1945 paper."

(2) "**Slag Mg Fl -- cleaned off as soon as made. Slices imperfections**." (emphases added: McKeel note: *No, not correct, some (outer easily removed part) is removed by chippers right away; significant amount of Mg-Fl remains all over the dingot*].

- "**How much end sawed off -- end shots -- 1 worker corner shots. Vertical lathing don't need it (Betatron NDT radiography)**.

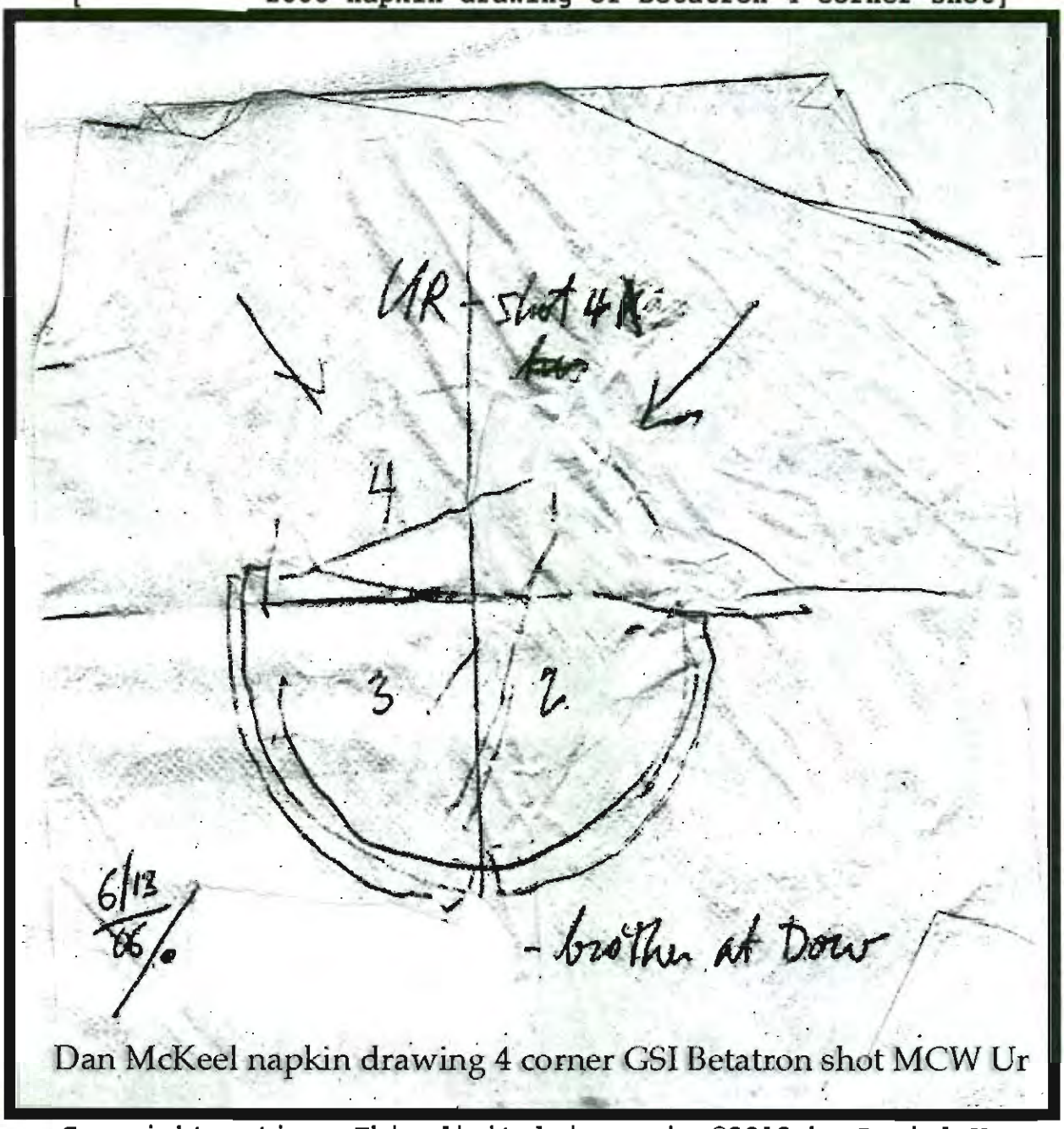
- "**No first hand information**." (emphases added)

(93) McKeel:

(1) See McKeel napkin drawing of Betatron uranium corner shots made at GSI, **page 26;** (2) GSI radiography supervisor also confirmed there were four "corner shots" performed on MCW uranium dingots. (See **interview APPENDIX A**); (3) On **pages 27 through 30** are two of the references that John Ramspott mentioned that prove that at Mallinckrodt Uranium Division, which contracted with AEC and GSI for the Ur NDT radiography work 1953-June 1966, the main purpose was to define the crust/underlying pure uranium metal interface, just as McKeel and Ramspott have claimed, on multiple occasions, and provided this same proof, only to be ignored and not taken seriously as was very evident at this meeting. *Bill Thurber and*

Bob Anigstein and DCAS (Mr. Allen, Dr. Neton) have just not gotten their facts correct.

[2006 napkin drawing of Betatron 4 corner shot]



Dan McKeel napkin drawing 4 corner GSI Betatron shot MCW Ur

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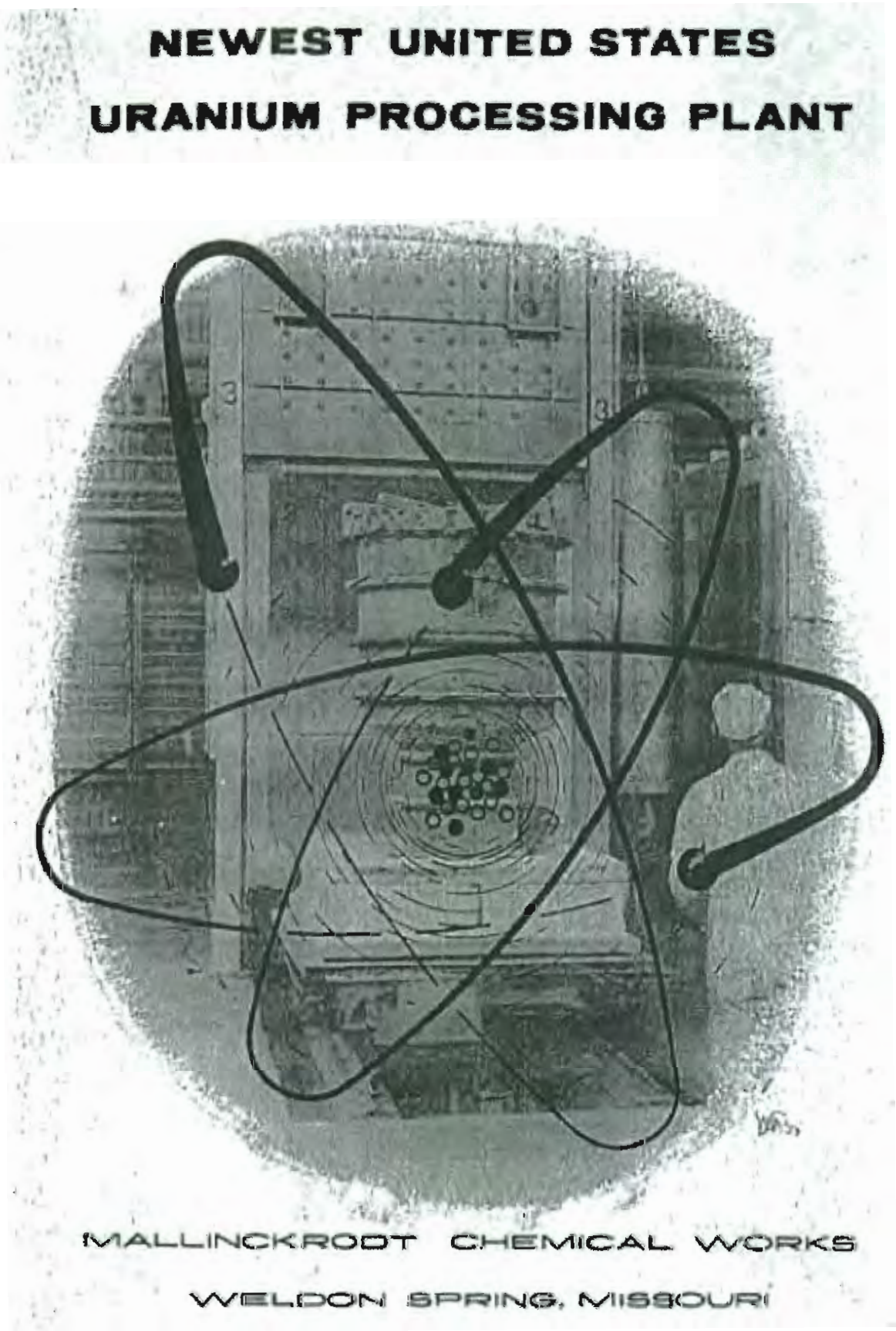
Fuel Tests:

Uranium, like most metals, shrinks on solidifying and blowholes and pipes are formed in the ingots. The amount of metal to be removed by cropping in order to produce sound material for rolling is determined by the use of high-energy X-rays. This test has supplemented other work in aiding the development of improved casting techniques. Uranium alloys may be cast in rounds or flats so that very little if any machining is required for use. Such bars may be tested by ultrasonic techniques for soundness.

Please note the underlined passage: ***"The amount of metal to be removed by cropping in order to produce sound material for rolling is determined by the use of high energy X-rays."***

The petitioners and McKeel, and site expert again assert that a main purpose of the MCW Uranium Division in its AEC contract with GSI 1953-1966, was to identify for later machine removal, the interface between the outer Mg-Fl "crust" and the underlying pure uranium. The TBD6K WG and NIOSH have previously determined that thorium-234 accumulated in the outer layers of uranium dingots and ingots -- the so-called "Putzier effect". At GSI, this known dose has been ignored repeatedly.

We also assert, until challenged and proven wrong: (a) that MCW Uranium Division was the only US plant that furnished uranium dingots to DOE nuclear weapons sites, including Hanford, and (b) that GSI thus will not have a suitable surrogate site.


NEWEST UNITED STATES
URANIUM PROCESSING PLANT
MALLINCKRODT CHEMICAL WORKS
WELDON SPRING, MISSOURI

The initial concept of the dingot process was to eliminate the vacuum casting by collecting the metal from a bomb reduction in a properly shaped cavity to permit direct rolling of the scalped regulus. The hot magnesium fluoride slag produced in the reaction would keep the upper portion of the metal molten longer than the bottom, and thus provide for directional solidification of the metal. Chemical analysis and Betatron examination of early dingots confirmed the expectation that the inner core of the dingot, under a contaminated surface layer, was sound metal of exceptional purity. Difficulty was experienced, however, in attempting to roll the scalped reguli in the existing rolling mill because of their short length. Reguli of greater length would result in greater scalping losses. The best solution to this problem seemed to be the adoption of a primary hot forming step prior to final fabrication by rolling or extrusion. This would provide an additional advantage in that it would permit the design of bomb shapes producing optimum metal yields.

- This is the passage from the MCW Weldon Spring "Newest United States Uranium Processing Plant" brochure that confirms the use of Betatron NDT to define the Mg-Fl uranium interface using dingots. The reference quoted on pages 27 and 28 referred to uranium ingots."

- The passage also indicates that neither the process nor the use of the formed uranium, the rolling operation, were "simple" and "all the details well known" as has been claimed by members of this work group. The facts on these pages 26 through 30 appear not to have been known well enough as this transcript and the official transcript will clearly demonstrate.

- This material should have been addressed in TBD-6000 Rev 1 released in 2011. We suggested including it, but this suggestion was not acted upon by the TBD-6000/6001 and Appendix BB or the subsequently formed TBD-6000 work groups.

[93] Ramspott: "No, they didn't give pounds. Chambersburg, do any (of the new NIOSH SD sites) tell pounds of uranium?" "Looking at it (paper) now -- with WG and Board -- "symposium NDT in Nuclear Energy" -- use high energy x-rays to define crust."

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[94] Mauro: "Don't get lost in the woods. How many days handling ingots, dingots, billets -- there is airborne dust. Some metal had scale, some not. **Surface could be influential** (emphases added) -- sparking -- is Thurber on line, derby or ingot surface differ. **Worthy of consideration**." (emphases added)

[95] Thurber: "I am on. One or two comments. Worker surveys bomb reduction done. **Chipper cleaned up surface. Some chipping to remove easily removable material**. (emphases added) What is?" [Aside note (McKeel?) "But: slag = scale = crust / (Mauro?) slug not good start. dolomite crust. Yes uncertainty. Once we come up with. Reasonable." "What was left was very adherent. Wouldn't be removed during handling. Fails to recognize vertical lathes if..." "does it speak to specifics?" (NOTE: refer to figures on pages 27 through 30)]

[96] Ramspott: "Post-Dispatch 1959, a chipper at Weldon Spring operating turret lathe. NDT (symposium book) names MCW. Taking off flake Mag Fluoride; exhausts at Weldon Spring. Three articles (McKeel filled in from memory, not in my hand notes, a paraphrase of what Ramspott conveyed) show WS and other sites removed crust based on Betatron NDT inspection. [**Pages 27-30**]

[97] Mauro: "Let's make believe there were chippers at GSI. NO -- **we will find bounding surrogate** (emphases added: McKeel clarifying editorial comment: *Mauro/SC&A are determined to admit that, at this time 8/28/12, when the agenda states the WG is to*

make SEC recommendations today, SC&A is still trying to do NIOSH's job as if they, not NIOSH, have to bound doses with sufficient accuracy. No, McKeel asserts, that is NIOSH's job. The Board and SC&A have to assess the quality of NIOSH science under the Act].

[98] Ramspott: "Size can determine the amount of uranium. You don't know the quantity of uranium at GSI."

[99] PLZ [Ziemer]: "Does not have to irradiated?" <-- [McKeel note to self: *size and volume (of uranium used) have to be surrogate data OK, plausible amounts of dingot/ingot U-238 (pass five Board SD criteria)*]

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[100] PLZ [Ziemer]: At 2:30 PM ET. "Need a motion options": "Accept NIOSH approach (modified surrogate data) criterion 3 SC&A agrees to as well. Although it is tractable..."

[101] Munn: "Whether we will or will not continue to rely on FUSRAP or use NIOSH use surrogate data in a different manner."

[102] Neton: "Mg Fl -- inhalation goes down, What fruitfulness?"

a) "reconstruct dose contract period..."

b) "reconstruct dose residual period..."

[103] Mauro: "Other places pure plus Mg Fl 'not radioactive' no direct knowledge of this. Dolomite crust. Can we wrap and wrestle -- way to bound it?"

[104] Poston: "We should move forward."

[105] Ramspott: "Dingots 1958-66 Weldon Spring; ingots 1953-58 Feb. at Mallinckrodt" (Destrehan Street St. Louis).

[106] Poston: "SC&A working for the Board; NIOSH has their responsibilities."

- "Get SC&A and NIOSH **together to provide a suitable surrogate**." (McKeel, NO, that is NIOSH's job)

[107] Ziemer: "What does that mean? Can't do it before ABRWH meets."

[108] Poston: "Do you want a motion (laughing during this question)?" (McKeel: there was no response from Dr. Ziemer)

[109] Allen: "White paper justified 198 best; Anigstein thinks work group shot both of these down."

[110] Mauro: "Can't use the model."

[111] Anigstein: "**Few days heard about the cleanup of Old Betatron Building**. **Radical abrupt change** needs to be looked into. (emphases added) Five years..." (continued on page 34)

(112) McKeel: clarifying editorial note that must be made. [*McKeel referred to the Old Betatron Building power washing in his June 13, 2012, paper on David Allen's 6/08/12 memo. He has furnished this reference previously on 8/30/12* (**see APPENDIX B**).

Dr. Anigstein thus was forewarned twice by the petitioners about this matter he today claims is "radical" and "abrupt". Nothing could be farther from the truth. This exchange proves something I have contended for a long time, that some members of this TBD-6000 work group have repeatedly ignored, or not read, my technical papers and written and oral comments. The present transcripted notes is proof of that contention.

Also, with respect to Dr. Anigstein's considerable research effort on GSI matters over the last 5 years, and Dan McKeel have been doing GSI related research longer (since 2005), interviewed more workers more times in more depth and have contributed far more material than has SC&A and Dr. Anigstein, to tell the full GSI story. Witness the alert in 2006 by Dan McKeel to David Allen at a NIOSH public meeting that Landauer possessed GSI film badges. Dan McKeel also submitted a FOIA request that produced 1,016 pages of unredacted NRC FOIA2010-0012 GSI by-product material license information furnished to everyone first by Dan McKeel. This material

revealed additional radiation source terms at GSI including another C0-60 small source, a Co-60 80 curie source, another 250 Kvp portable x-ray source and two Ra-226 sources, all of which were unknown to either NIOSH or SC&A up until that time. McKeel's successful justification of a fee waiver led to NRC posting this information, unredacted, subsequently on the NRC website. I do not make this claim to boast -- it is the truth and will be borne out by the written record.]

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[113] Anigstein (continued from Page 33...): "...looking into what happened at GSI -- 90% what happened. Told very, very recently -- a little fast. I don't take ownership of my model. **Won't give up this model -- "based on site data. Plausible upper bound**.(emphases added)"

(114) McKeel note to self: "NOT 100% GSI site data in alt. model." [*is not a plausible upper bound because of the stipulated OBB power washing and withdrawal of the alt. model*]

[115] Mauro: "Hate to abandon model."

a) "NIOSH can find a better surrogate."

b) "They have already stipulated OBB was cleaned."

[116] PLZ [Ziemer]: "Agrees OBB was cleaned up 1984. Accepted."

[117] Ramspott: "...few months ago transcript" (Ziemer cut him off)

[118] PLZ [Ziemer]: "Ask NIOSH and SC&A to collaborate on a better surrogate?" (emphases added)

[119] Beach: "What period? Covered period. Surrogate data covers the covered and the residual periods."

[120] Neton: "Be **start point** for a **new model**." (emphases added)

(121) McKeel editorial comment: [*This would be NIOSH's fifth opportunity to develop an intake model. Allen Appendix BB, two*

Path Forward for GSI Allen white papers, white paper 8/21/12 defending their own TBD-6000 SD model that was turned down 8/28/12, rejection of the SC&A alternate model, today's 8/28/12 meeting, and the new model that is proposed for some time in the indefinite future. This process is unreasonable in several ways: way too many tries allotted to NIOSH, no successful models SC&A and the WG accepts, and way too much time allotted for NIOSH to accomplish their mission.]

[122] PLZ [Ziemer]: To Dr. Poston, "Are you suggesting a technical meeting? Allen model. Bob's off the table."

[123a] PLZ [Ziemer]:

"Motion:

(1) "SC&A review was NIOSH did not meet 3 or 4 surrogate data criteria."

(2) "Extensive discussion what would constitute appropriate surrogate. Want NIOSH to tell us a different surrogate route. Then SC&A comes on board to review."

(123b) McKeel to self: There was no second or vote on this motion). No reply by Dr. Ziemer to [122] Poston.

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[124] Beach: "Vote on an SEC for early period -- MOTION NOW". (emphasis added)

(125) McKeel observation to self: "PLZ ignored this." (emphasis added) WG chair Ziemer ignored WG member Beach's immediate motion, did not ask is there a second?)

[126] PLZ [Ziemer]: "Can vote here..." "Is everyone comfortable?"

[127] Person not identifiable: Someone who McKeel cannot identify blurts out "Yes".

[128] Munn: "Prefer not to conclude it. Reliance on FUSRAP not as desirable."

[129] Beach: "Don't agree to use 1993 back extrapolation here."

[130] Munn: "Now we are going to look for surrogate data from other sites. We can do this."

[131] Beach: "Third option: Vote for early period SEC if Board wishes."

[132] Ziemer: (McKeel, from memory): "When will NIOSH start?"

[133] Allen: "Start, now, nothing before Board meeting."

[134] Katz: "SC&A, DCAS, Dr. Ziemer will summarize -- **do we need any presentations?**" (emphases added)

[135] Anigstein: (McKeel, from memory) "Should I go, I already am booked?"

[136] Ziemer: "No, don't need to present SC&A and DCAS." (McKeel Note: No one mentioned 10 minutes Dr. Melius has set aside for Dan McKeel to address the Board on September 19th.)

[137] Katz: "You can choose."

[138] Beach: "Matrix wasn't closed, SC&A needs to update matrix. SEC issues were not transferred to the Appendix BB issues matrix."

[139] Ziemer: "Yes. I'll make a chart 'so we are all on same page'. There is always overlap between SEC and Appendix BB issues." Then Dr. Ziemer cross referenced some SEC issues that had been closed and some that were still open, and some that had been transferred as Appendix BB issues: [McKeel comment: *This part of the discussion was very difficult to follow because two matrices were being cross referenced and the issues were not described in exact sequence*]:

- "Issue 1 closed."
- "Issue two became part of App-BB (2)"
- "Issues 3, 4 and 5 move out and closed"
- Beach mentioned "issue 6 wasn't closed, part of Appendix BB 11"
- Issue 7 was "in progress, show update"

- "Issue 8 closed, transfer to App-BB"
- "Issue 9 equals issue 6; closed"

[140] Katz: "And I will distribute that chart."

[141] Ziemer: (June 1, 2012 update)

Meeting adjourned 3:08 PM ET 8/28/12 Tuesday

--end of transcript hand notes--

(142) McKeel final editorial comment:

1. *I doubt that any WG or SC&A or DCAS person could follow the preceding matrix update session. It is difficult to understand why, given that Appendix BB matrix issues were a scheduled agenda item, SC&A had not been tasked to update both the SEC and Appendix BB matrices expressly for this final meeting before the TBD-6000 work group voted on a recommendation on GSI SEC-00105 to the full Board.*

2. *Dr. Ziemer's final motion to the full Board was not clearly delineated, and there was no final vote to show that, in fact, all four Board/work group members present agreed with the motion. Dr. Ziemer's motion was also not formally seconded. In other words, the chair made up a motion, bypassed getting a second, and did not restate the exact wording of the motion to be presented to the full Board on September 19, 2012.*

3. *Let it be recorded that a vote of the full four member TBD-6000 work group (Ziemer, Beach, Munn, Poston) on an SEC for GSI for the covered and residual periods was not taken at the August 28, 2012, TBD-6000 work group meeting. Member Beach asked "for a vote on an SEC for the early period - Motion now" but this motion was not recognized nor acted upon by the chair, Dr. Paul Ziemer. Dr. Ziemer offered no explanation why such a vote on the WG recommendation for SEC-00105 was not taken 8/28/12, even though such was an agenda item.*

Respectfully submitted:

Daniel W. McKeel, Jr. September 1, 2012
P.O. Box 15, Van Buren, MO 63965
Phone: 573-323-8897 · Fax: 573-323-0043
E-mail: danmckeel2@aol.com

APPENDIX A

The following 2009 e-mail was supplied to Dan McKeel by on 8.31.12. It documents an interview by deceased GSI Betatron operator and a former GSI radiography division supervisor, . The subject matter is the crucial issue, referable to GSI SEC-00105, of exactly what radiographic nondestructive testing ("NDT") examinations and inspections were performed on MCW-Destrehan Street and Weldon Spring Uranium Division uranium metal products (ingots, one-step dingots, billets and slices) under AEC contract 1953 through June 1966 at General Steel Industries, Inc. ("GSI"), located at 1417 State Street in Granite City, IL.

NIOSH and SC&A have not discovered any technical reports from the two MCW sites, or from GSI records, that give details of precisely what was done with the uranium sent to GSI under MCW purchase orders 1958 through 1966. So this corroborative testimony is particularly pertinent and seminal information.

Mr. indicates that some of the MCW uranium ingots he observed were transported to GSI from MCW in flat bed trucks. The truck loading dock at GSI was a long path away from the two Betatron buildings where NDT radiography was done.

This testimony corroborates the napkin drawing and GSI radiographer Ed Brawley's testimony to SEC-00105 co-petitioner Dan McKeel in 2006 (see napkin drawing of Betatron 4-corner uranium "shots" diagram on page 26 of the main body of this report).

- Daniel W. McKeel, Jr., September 1, 2012

Testimony from GSI Betatron Supervisor
to GSI Betatron operator, in 2009

Subj: Fwd: Ingots
Date: Friday, August 31, 2012 11:16:51 PM
From:
To: danmckeel2@aol.com

Begin forwarded message:

From:
Date: March 29, 2009 12:39:21 PM CDT
To:
Subject: Ingots

(McKeel note: verbatim, spelling errors not corrected)

- I discussed "Ingot" shooting with he evening of 3/28/09 and the morning of 3/29/09. stated "I observed Ingots leaving the old betatron on the early morning weekend shifts. They were leaving on a flat bed truck and standing in a vertical position the same as they had been shot". referred to the ingots as Mellinckrodt Ingots. was a Betatron Supervisor and Film reader stated that the Ingots were around 20 inches high and 18 inches in diameter, were shot in a vertical position, and an upper left, upper right, Lower left, and lower right shots were fired. also said that after the upper left and upper right shots were fired, the ingot was turned over by betatron crane to shoot the two bottom shots to achieve a clear edge on the film. (Invert the ingot). It is known that at least four "glancing" corner shots were fired with multiple film to record variable thickness. There is a possibility of four more shots having been fired to complete the circumference quadrants of the ingots. (6 & !2 o"clock quadrants and 9 & 3 o'clock quadrants of the ingots) The shots were to achieve corner penetration of the ingot so as viewable depths could be checked for scraping or milling. The corner glancing shots were normally shot with 14 x 17 Metal cassettes sitting on wood blocks in the rear corners of the ingot with a lead scattershield. The edge of the cassettes would be placed in a manner so as the curvature of the ingot would flatten out on image of the edge of the ingot leaving a clear straight black edge on the film"

24 & 25 MEV Betatron & Magnaflux operator
GSI.

APPENDIX B

This Appendix corroborates the statement by to participants at the 8/28/12 TBD-6000 work group that Dan McKeel did inform the same work group participants at an earlier TBD-6000 work group meeting, held on June 14, 2012, that the Old Betatron Building ("OBB") at GSI had been cleaned and power washed in the 1970's.

Dr. McKeel's rendition of that specific piece of information is found on page 21, lines 12 through 14, of the official, verbatim, court reporter transcript of the June 14, 2012, TBD-6000 work group meeting.

Dr. McKeel's comment spanning the entire residual period is given in this Appendix in order to place the OBB power washing quotation in context.

- Daniel W. McKeel, Jr., September 1, 2012

Excerpt from the June 14, 2012 transcript of the TBD-6000 work group of the Advisory Board on Radiation and Worker Health. The testimony of interest is that by Daniel W. McKeel, Jr., GSI SEC-00105 co-petitioner with . GSI primary petitioner

Filename: McKeel_TBD6k_tr_6.14.12.txt

• Note: Names, page numbers and line numbers are bolded. The passage regarding the Old Betatron Building being power washed in the 1970's on transcript page 21 is bolded, italicized and highlighted in yellow. Dow worker Bill Hoppe has given further testimony in August 2012 that the power washing of the OBB actually occurred with certainty in 1984.

PAGE 18 (McKeel note: "Dave" in line 12 is David Allen (DCAS)

1 switch. When you walk in the door, it goes to 2 maximum.
3
CHAIRMAN ZIEMER: Right. 4

MEMBER POSTON: When you walk out, 5 the door, it goes to zero. 6
CHAIRMAN ZIEMER: Right. 7
MEMBER POSTON: Okay. All right. 8 I understand. 9
DR. MCKEEL: Dr. Ziemer, this is 10 **Dan McKeel**, may I make a comment? 11
CHAIRMAN ZIEMER: Sure. 12
DR. MCKEEL: Dave mentioned, when 13 he was reviewing what was done at the slug 14 production facility, he made a comment that 15 there was no cutting, grinding, or abrasion of 16 uranium at GSI. 17 And one of the points that I want 18 to reinforce is that, although that was not 19 done as a machining operation, those large 20 slugs, I mean, the large ingots and dingots

PAGE 19

1 even the betatron slices, were so heavy that 2 they had to be picked up and handled by chain 3 men and by chains. 4 And, of course, those chains were 5 hanging down from a crane, the ingots and 6 dingots were swinging, and, undoubtedly, those 7 chains scraped the outer surface of the ingots 8 and dingots which had not been cleaned of 9 their outer crust. 10 So a point that I think has been 11 ignored throughout this consideration of GSI, 12 but it is mentioned by SC&A in their White 13 Paper, that there was a long path th14 General Steel by which the uranium from 15 Mallinckrodt traversed, even before it got to 16 the betatron buildings. 17 So, you know, it had to come to 18 the loading docks, we know that it was stored 19 before and after it got there, it had to be 20 loaded onto their railroad transfer cars,

PAGE 20

1 traversed many of the buildings beside the 2 foundry, through Buildings 6, 7, 8, 9, 10. 3 The railroad tracks from Building 4 10 went into the new betatron building, so the 5 ORNL assumption in 1989 that the only areas 6 that had uranium contamination were the old 7 and new betatron buildings must have been a 8 cost containment sort of consideration, 9 because anybody who thinks about the process 10 for uranium handling at GSI has to recognize 11 that there were long pathways that probably 12 were contaminated by chafing and scraping by 14 betatron slices. 15 So I think that is a major lack of 16 the analysis of the residual period. There is 17 zero data on uranium surveys at GSI. Real 18 uranium survey, radiologic data, from 1952, 19 when the first machine, betatron government-20 owned machine, was there until the ORNL survey 21

PAGE 21 (KEY MCKEEL OBB POWER WASHING 70's COMMENT, lines 12->14)

1
So the idea that, somehow, the 2 dust content in a small industrial vacuum 23 3 years after the plant closed is, in any way, 4 indicative of the residual contamination in 5 that plant is really, scientifically speaking, 6 ridiculous, absurd, and really unacceptable. 7
The proper way to look at things 8 is, there is really no representative residual 9 period real data; air monitoring, surface 10 concentrations. ***You know, we do know from 11 worker testimony that that building, the old 12 betatron building for instance 13, had been power washed in the intervening years back in 14 the '70s,*** and that small vacuum was used 15 repeatedly, we are told, you know, every day 16 it was emptied and so forth. 17 So all that represents is the 18 residual uranium dust in that vacuum when it 19 was probably last used. Nobody even knows 20 when it was last used. And the other point

PAGE 22

1 was really used to clean the floor in the old 2 betatron building was much larger, and that 3 one, there's no measurement of that. 4 So I think those points need to be 5 put on the record. Thank you. 6
CHAIRMAN ZIEMER: Okay. Thanks, 7 Dan. One connection, Dave, could you clarify 8 the application of the activity that you're 9 proposing. Who would this apply to, the air 10 concentrations that you're proposing? 11
MR. ALLEN: Air concentrations and 12 the external would apply to everybody at GSI...[MORE FOLLOWS]

11 concentrations. You know, we do know from
12 worker testimony that that building, the old
13 betatron building for instance, had been
14 power-washed in the intervening years back in
15 the '70s, and that small vacuum was used
16 repeatedly, we are told, you know, every day
17 it was emptied and so forth.

--(end of relevant McKeel transcript excerpt page 21)--