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PUBLIC HEALTH SERVICE
CENTERS FOR DISEASE CONTROL AND PREVENTION
NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH

convenes

MEETING 7

SUBCOMMITTEE FOR DOSE RECONSTRUCTION

REVIEWS

The verbatim transcript of the 7th
Meeting of the Subcommittee for Dose Reconstruction
Reviews held at The Holiday Inn Select, Naperville,
Illinois, on October 3, 2007.

*STEVEN RAY GREEN AND ASSOCIATES
NATIONALLY CERTIFIED COURT REPORTING
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C O N T E N T S

October 3, 2007

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TRANSCRIPT LEGEND

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-- (sic) denotes an incorrect usage or pronunciation of a word which is transcribed in its original form as reported.

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-- "uh-huh" represents an affirmative response, and "uh-uh" represents a negative response.

-- "*" denotes a spelling based on phonetics, without reference available.

-- (inaudible)/ (unintelligible) signifies speaker failure, usually failure to use a microphone.

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ZIEMER, PAUL, ABRWH

OCT. 3, 2007

9:30 a.m.

P R O C E E D I N G S

WELCOME AND OPENING COMMENTS

1
2
3
4 **DR. WADE:** This is Lew Wade. I serve as the
5 Designated Federal Official for the Advisory
6 Board, and this is a meeting of the
7 Subcommittee on Dose Reconstruction of the
8 Advisory Board. This is a duly-noticed meeting
9 of the subcommittee. The committee --
10 subcommittee is very, very ably chaired by Mark
11 Griffon. Its members are Gibson, Poston, Munn;
12 alternates Clawson and Presley. Let the record
13 show that all members and alternates are at the
14 table participating in the meeting.

15 We also have in the audience Dr. Ziemer, the
16 Board Chair, who is observing. There are no
17 concerns about quorum or exceeding quorum
18 requirements because this is, again, a duly-
19 noted meeting of the subcommittee.

20 Again I would ask those on the line to exercise
21 some simple rules of etiquette in terms of
22 participating. Mute your instrument if you're
23 not speaking to the group. If you are
24 speaking, really try and speak into a handset
25 and not a speaker phone. And be mindful of

1 background noises.

2 I think it might be necessary for the
3 technician to give us some instruction. I
4 think we will have something of an interaction
5 with several members on the phone and people at
6 the table. Is it my understanding that when
7 those on the phone are speaking you'll shut off
8 our microphones to eliminate feedback to
9 eliminate feedback so we should be able to
10 engage in a dialogue, although it wouldn't be a
11 simultaneous dialogue. That -- that -- which
12 isn't good anyway, normally, so...

13 I think -- are there any data needs that we
14 have for any members of the subcommittee or the
15 alternates? Do people have access to what they
16 need to participate in this meeting? I think
17 it's the review of sets four, five and some
18 discussion of blind reviews. We can do copying
19 if anyone needs it, if you'd like to have a
20 hard copy in front of you.

21 So with -- I'd also introduce Dr. Christine
22 Branche, who's to my right. Dr. Branche is
23 studying the -- the vagaries of DFO-ship and
24 will be taking on for me in a reasonable amount
25 of time. So she's going to sit up close to the

1 table and learn the business of what happens
2 here.

3 Mark?

4 **MR. GRIFFON:** Do we need to go around the table
5 and do introductions or -- and -- and on the
6 line, who's on the phone line, 'cause I --

7 **DR. WADE:** You can do that if you'd like.

8 **MR. GRIFFON:** Sure, I'll start. Mark Griffon,
9 chairing the subcommittee and with the Advisory
10 Board.

11 **MR. GIBSON:** Mike Gibson, Board member, no
12 conflicts.

13 **MS. MUNN:** Wanda Munn, Board member.

14 **MR. HINNEFELD:** Stu Hinnefeld from NIOSH.

15 **MR. SIEBERT:** Scott Siebert, the ORAU team.

16 **MR. PRESLEY:** Robert Presley, Board member, no
17 conflict.

18 **DR. POSTON:** John Poston, no conflicts, Board
19 member.

20 **MR. CLAWSON:** Brad Clawson, Board member, no
21 conflict.

22 **DR. BRANCHE:** Christine Branche, NIOSH.

23 **DR. WADE:** And Lew Wade with the Advisory
24 Board, and I work for NIOSH. It's not
25 necessary that we identify the audience. I

1 **DR. WADE:** I would ask, if Hans or Kathy wish
2 to speak, would you sort of give us a signal
3 from the back of the room so we can understand
4 that? Okay. Thank you.
5 Mark?

6 **UPDATE FROM THE CHAIR**

7 **MR. GRIFFON:** Okay. We're going to start
8 reviewing, like -- like Lew said, the fourth
9 set of case reviews, working from the matrix.
10 Also the fifth set, and then probably more
11 updates on the sixth and seventh set of cases,
12 and -- and just a little discussion on the
13 blind reviews and where we stand and how we're
14 going to go forward with the blind review cases
15 -- case selection, actually.
16 The -- just -- just a little update. We had a
17 meeting in between the last Board meeting --
18 I'm not sure of the date, but we discussed the
19 fourth, fifth and sixth set. And for the
20 fourth and fifth set we -- we've -- at least on
21 almost all the findings we're fairly close to --
22 to a resolution. And from that meeting,
23 NIOSH has generated a sort of a sub-matrix of
24 the remaining issues where we asked for more
25 information or more background calculations.

1 And that's -- that's what I want to work from
2 today.
3 I will update the entire matrix for the fourth
4 and fifth set to show the program actions in
5 the final resolution column being completed.
6 But other than these ones that we're discussing
7 on these -- these recently e-mailed -- and I'll
8 -- I'll -- as we introduce each one, I'll --
9 I'll read which one we're working from, but
10 these sort of sub-matrices, if -- if they're
11 not on the sub-matrix, basically they've been
12 resolved in one way or another on the ma-- on
13 the full matrix. And by that I mean either
14 we've decided that -- we -- we've come to
15 agreement between SC&A and NIOSH. In some
16 cases there's agreement that there -- there's
17 still an issue, but it's going to be resolved
18 in the site profile review, or in the
19 procedures review session. I think that covers
20 the bulk of them, but -- but in one manner or
21 another, we have a resolution -- like I said,
22 except for these remaining ones on these sub-
23 matrices that -- that Stu has provided to us.
24 So I think we should start from there and I'll
25 -- I'll just read through the finding numbers

1 and then kind of turn it over to -- to Stu to
2 respond to. I think, for the fourth set at
3 least, I received a draft response to some of
4 the findings from SC&A but did not yet for-- it
5 -- it's in draft form. I di-- I didn't forward
6 it to the full workgr-- or full subcommittee
7 yet, so we may not be in a place to completely
8 close this out, but we're real close, I think,
9 on most of the fourth and fifth set issues.
10 And hopefully -- or definitely by the next
11 phone call meeting I think we can have these
12 two closed out completely.

13 **FOURTH SET OF DOSE RECONSTRUCTIONS**

14 So for the fourth set, I'm looking at a
15 document -- it says updated September 26th,
16 2007 additional analysis for fourth set of DRs
17 on the top. The first finding number is 65.4 -
18 - everybody have that -- that document?
19 I think this is the appropriate place to start
20 -- right, Stu? Is this --

21 **MR. HINNEFELD:** Yeah. Yeah, yeah.

22 **MR. GRIFFON:** So -- so I'll turn it over to you
23 -- 65.4 -- actually this -- this is all, I -- I
24 think, resolved from our subcommittee
25 standpoint, as being -- NIOSH owes us a,

1 quote/unquote, global response or glob-- it's a
2 global issue and we're going to get a response
3 from the procedures workgroup, so it's going to
4 be closed out there.

5 **MR. HINNEFELD:** Right.

6 **MR. GRIFFON:** Then going on to 67.6, here you
7 have some additional analysis, and I think
8 maybe you can go through that with us and...

9 **MR. HINNEFELD:** Right, 67.6, just -- just for
10 everyone's information on --

11 **DR. WADE:** Stu, you need to get the microphone
12 close and speak into it -- for all of us. You
13 want to make that rule.

14 **THE COURT REPORTER:** Yeah, everybody needs to
15 do it like Dr. Wade is, please.

16 **MR. GRIFFON:** Was I okay?

17 **THE COURT REPORTER:** You're doing fine, Mark.

18 **MR. HINNEFELD:** The -- for 67.6 -- well, first
19 of all, let me just describe a little bit of
20 the look of the document we're looking at.
21 Information that is italicized and in red is
22 new information that's been added to this since
23 our last -- since the last subcommittee
24 meeting, so that's the additional information
25 that was provided since the last one. And the

1 information in the additional analysis column,
2 in the other font, is information that was on
3 there the last time we met.

4 67.6 -- finding 67.6 was originally a finding
5 about some issues with the first version of the
6 Savannah River workbook and its treatment of
7 dosimeter readings for -- that were less than
8 LOD over two, not including those as in the
9 missed dose calculation but rather counting
10 that dose in the measured dose. And also the
11 use of a triangular distribution for dose
12 conversion factors that encompassed all
13 geometries and not just the AP geometry. So
14 that was the original finding.

15 And so the original action that we took was to
16 rework the case, addressing the findings, you
17 know, and show what the outcome would be. And
18 in that rework we did -- we adopted all changes
19 to technique that would be used. So when we
20 did that, we chose a different dose conversion
21 factor for low energy photons, for less than
22 30, because this was a -- specifically a
23 plutonium exposure and so you'd have a better -
24 - you know, you don't have this broad range of
25 zero all the way to 30, you know, that your --

1 your (unintelligible) photon energy is 17 keV,
2 so you could choose a -- so a different -- was
3 chosen and so the -- the follow-up question
4 after we provided our initial response was why
5 did you change the DCF on low energy photons
6 because there had been no finding about that in
7 the original report. And so our response --
8 that I'm finally getting to, the new
9 information here -- is that it's our standard
10 practice that when we rework a case, for
11 whatever reason, when it comes back to us for
12 rework and we need to, you know, complete out
13 the whole -- the whole case, we will adopt all
14 the changes that would apply to it for a
15 reconstruction for a -- you know, that would be
16 done today versus how it was done originally
17 when we rework it. We do that when we get a
18 case back for Program Evaluation Report or we
19 get a DOL return for any reason, we work it in
20 accordance with current practice and that's
21 what was done on this.

22 **MR. GRIFFON:** I guess -- I guess my follow-up
23 on this would be sort of rework versus
24 recalculating -- you know, we -- we asked for
25 clarification on how things were calculated,

1 giving the procedures of the time, 'cause this
2 -- this new method wasn't available when the
3 original DR was done. And unless this is being
4 -- I mean this re-- this is not an official
5 rework that would go back to the claimant.
6 Right? It -- they're not going to get a
7 different DR --

8 **MR. HINNEFELD:** No --

9 **MR. GRIFFON:** -- report.

10 **MR. HINNEFELD:** -- no.

11 **MR. GRIFFON:** So I -- I guess I -- I -- you
12 know, I -- I understand, you know, what you're
13 saying, why you would --

14 **MR. PRESLEY:** This is Bob Presley, let me ask a
15 question. If -- if the DR changed, then I
16 presume that they would get another report or
17 something, if there was a change in the --

18 **MR. HINNEFELD:** You mean if there's a change in
19 compensation decision?

20 **MR. PRESLEY:** Right.

21 **MR. HINNEFELD:** If there's a change in
22 compensation decision because of something
23 that's found, we would notify the Department of
24 Labor, and they would have (unintelligible).

25 **MR. GRIFFON:** Yeah. No, I -- I -- I guess I'm

1 trying to -- I'm trying to just think this
2 through, that -- you know, 'cause we're trying
3 a -- also in -- in this random selection of
4 cases to review, we're trying to look and see
5 whether the DR was done correctly, given the
6 procedures of the time, you know, and when you
7 -- you know, you're -- you're responding with
8 answers and -- and sometimes more information,
9 including further demonstration of what you --
10 how you calculated the dose to begin with, but
11 we're not necessarily asking for a case to be
12 reworked in that -- that sense that the term is
13 normally used. They -- a rework is done for --
14 when you're requested by DOL. Correct? So
15 I...

16 **MR. HINNEFELD:** Well, it -- the -- the changes
17 that we -- in the original finding, the changes
18 that were made that led to the original finding
19 are changes in technique that came out of this
20 subcommittee's review. Because the original
21 procedure -- the original dose reconstruction
22 procedure was to use the measured dose that was
23 recorded. And the original procedure and --
24 that came -- you know, that was an adapt--
25 adaptation of IG-1 and it was included in the

1 original workbook, was to use the full range of
2 DCF values for the range of DCF. So it was
3 done in accordance with the procedures at the
4 time.

5 Now in the -- in the meantime, largely as a
6 result of review by this subcommittee, those
7 two issues were pointed out, is that listen, if
8 your LOD -- if your reading is less than LOD
9 over two, then that's really not a detectable
10 number and that should be in the missed dose
11 category. And also, there are some issues with
12 the full range of geometries and use of the
13 full range of geometries in IG-1, and so you
14 (unintelligible) use AP. So those changes in
15 technique were adopted after this dose
16 reconstruction was done. And this was -- and
17 so we were saying okay, given the changes that
18 have been -- taken place in technique since
19 this one was done, what would the result be.
20 So -- I mean it was done -- when it was done,
21 it was done in accordance with procedures of
22 the time.

23 **MR. GRIFFON:** Right.

24 **MR. HINNEFELD:** Adjustment in procedures came
25 about after this one was done.

1 **MR. GRIFFON:** After this review. Okay, that's
2 what I wanted to get a handle on. Okay. May--
3 maybe -- I don't know if it makes sense for --
4 well, Kathy and Hans are on the line. I don't
5 know who's going to be the principal respondent
6 for SC&A, but I know we have some draft
7 responses to these, but if you want to weigh in
8 now, feel free to.

9 **MS. BEHLING:** (Unintelligible) Kathy
10 (unintelligible) hear me?

11 **MR. GRIFFON:** Yes.

12 **MS. BEHLING:** (Unintelligible) was -- was what
13 Stu had said (unintelligible) take
14 (unintelligible) we were with the -- we were
15 only taking (unintelligible) either
16 (unintelligible) --

17 **MR. GRIFFON:** Ka-- ho-- hold on, we --

18 **MS. BEHLING:** -- (unintelligible) --

19 **MR. GRIFFON:** Kathy --

20 **DR. WADE:** We can't understand.

21 **MS. BEHLING:** (Unintelligible) okay that there
22 were errors (unintelligible) the first time
23 through (unintelligible) --

24 **MR. GRIFFON:** Can you stop her?

25 **MS. BEHLING:** -- where they indicate they

1 should be an AP geometry.

2 **MR. FARVER:** This is Doug Farver with SC&A --

3 **MR. GRIFFON:** Hold on -- wait -- wait.

4 **DR. WADE:** We can't hear her.

5 **MR. GRIFFON:** We can't hear her.

6 **DR. WADE:** She needs to -- if it's not the
7 electronic system, she needs to slow down and
8 speak a little more clearly.

9 **UNIDENTIFIED:** (Off microphone)

10 (Unintelligible)

11 **DR. WADE:** Yes.

12 **MR. GRIFFON:** Sure, yeah.

13 **MS. BEHLING:** ... Behling and from here on in
14 I'm going to let Doug respond to these
15 questions. We were on vacation last week and
16 Doug has -- he's very capable of going through,
17 I think, of all of the -- these findings and he
18 has looked at them. And if he's not
19 comfortable with that, I -- I can certainly
20 assist. This is very difficult using the phone
21 in this manner.

22 The only comment that I would have is it was
23 really SC&A's position on this particular
24 finding that these were not necessarily guide--
25 not guidelines of the time. These were -- this

1 DCF issue, in our mind, was something of an
2 error. I mean when you indicate that you're
3 going to use an AP geometry, then you use the
4 DCF range associated with an AP geometry. I
5 don't know that it was ever correct to use this
6 min and maximum value for all geometries.
7 The second issue is, we al-- also thought, even
8 if it was not built into the workbooks at the
9 time, it was still an error and not claimant
10 favorable to assume that values that are less
11 than LOD over two should -- they -- they should
12 be considered as missed dose.
13 So those two issues that were in the original
14 findings were errors and it -- it had nothing
15 to do with what -- what version of the
16 Implementation Guide and so on was in place.
17 At least that's how I view it.
18 Thereafter when we brought this issue up --
19 like I said, NIOSH did rework it using all of
20 the more current information and that gave them
21 the opportunity or -- when they reworked it,
22 they obviously realized that the photon dose
23 increased but the less than 30 keV, the low
24 energy photon dose decreased because of using a
25 newer version or an -- an addition to the

1 Implementation Guide.

2 So, you know, I -- I -- I understand what they
3 did, but I don't think that -- that I
4 necessarily totally agree with the fact that
5 they were using -- I think these initial
6 findings were errors and not that they were
7 using an older version of -- of the procedure
8 and Implementation Guide.

9 **DR. WADE:** Thank you, Kathy. We're going to
10 ask Doug to come to the microphone. Doug,
11 could you remake those points, just for the
12 record, please?

13 **MR. FARVER:** Yes, sir. As Kath-- my name's
14 Doug Farver with SC&A, and as Kathy mentioned,
15 the original issues were the range of dose
16 conversion factors where we thought were
17 inappropriate and the method of calculating
18 missed dose using LOD over two, which were
19 technical issues we felt were in error. So
20 it's not just they were -- they may have been
21 following the procedure, but we felt the
22 procedure was in error. That was the initial
23 finding.
24 And as is NIOSH's practice, when they went and
25 updated the case, they reworked it according to

1 the current -- standards of the day, should we
2 say, whatever we've found out since these cases
3 have been done. And sometimes these cases are
4 two, three years old, so there's been a lot of
5 information gathered between now and then.
6 I understand their process, and I think that is
7 something that the working group might want to
8 consider, whether they like that process or
9 whether they would prefer NIOSH to go back and
10 rework it to the standards of the day as
11 opposed to the current standards. So we
12 understand what they did.

13 But the original findings about the dose
14 conversion factor and the missed dose and LOD
15 over two seems (unintelligible). It was the
16 fact about the less than 30 keV doses, which
17 has to do with the implementing current
18 processes at NIOSH.

19 (Unintelligible)

20 **MR. GRIFFON:** Yeah, okay. I -- I mean I -- I
21 think we get the -- the just (sic) of the
22 finding and the response, and I'm still -- I
23 don't know if other -- other subcommittee
24 members have a sense of the -- I mean the --
25 the question on the rework versus

1 recalculating, I -- I'm not sure how -- if this
2 is a real borderline case, either, I can't
3 remember, but the question comes up that if --
4 if, you know -- you know, this -- this bottom
5 line question of was the decision right at the
6 time, when the DR was done. And if we're
7 reworking to -- to -- you know, there were some
8 errors and we're reworking based on new
9 information and it's still under, that doesn't
10 necessarily answer the question of did you get
11 it right at the time, when it was done.

12 So -- Wanda?

13 **MS. MUNN:** If I understood what I think was
14 said, the reconstruction was done in accordance
15 with the procedure. The procedure itself had
16 flaws. Did I get that correctly, Doug?

17 **MR. HINNEFELD:** That's -- that's right.

18 **MS. MUNN:** So if that's the case, then the
19 question is not whether what's been done
20 subsequently was -- was done in the appropriate
21 manner. It's whether it is the correct process
22 for us to have identified that there was a
23 procedural flaw and have that procedural flaw
24 addressed, and I believe NIOSH has done that.
25 Have they not?

1 **MR. HINNEFELD:** Yes.

2 **MR. GRIFFON:** Yeah.

3 **MS. MUNN:** So to go back to the original
4 procedure, as long as we know that procedure
5 was flawed and the correction has been made,
6 then there does not seem to be any additional
7 issue here. The dose reconstructor followed
8 the procedure. We've identified a flaw in the
9 procedure. The procedure has been revised. I
10 don't know what further steps we can take.

11 **MR. GRIFFON:** No, no, no, I'm getting -- I mean
12 we -- we agree on that part. The question is,
13 it kicked all up to a rework, in a sense. You
14 -- you implemented all the other modifications
15 which have come subsequent to the initial DR
16 being done, and that -- I'm not sure how much
17 that affected or didn't affect the overall dose
18 and the potential for this being, you know, a -
19 - a -- a case that could have been -- that --
20 that could have been, you know --

21 **MR. HINNEFELD:** Yeah, well, sitting --

22 **MR. GRIFFON:** -- the outcome could have been
23 different, that's what I'm (unintelligible).

24 **MR. HINNEFELD:** -- sitting here, I don't know,
25 either.

1 **MR. GRIFFON:** Right.

2 **MR. HINNEFELD:** But suppose it were. You know,
3 suppose that only the LOD over two and the
4 triangular distribution corrections were made,
5 and we said okay, because we just want to see
6 what that effect is, let's re-- let's just do
7 that. Let's don't do the full rework, let's
8 just do that. And suppose the POC came out
9 above 50 percent when we did that. Well, what
10 action would we -- supposed to take? Well,
11 that means we ask DOL to send it back. DOL
12 would send it back. We would rework it in
13 accordance with all the current practices, and
14 it wouldn't be above 50 percent.

15 **MR. GRIFFON:** Right, but -- but as far as --
16 since we're randomly selecting here, I guess my
17 point is -- I -- I -- I think we're on, you
18 know, the same page. Since we're randomly
19 selecting cases, though, you know, my final
20 outcome for us, you know, one final finding
21 could be that this case may have been affected,
22 you know. I mean that -- that's -- you know,
23 that's one -- I mean I keep -- I -- we -- we
24 have this discussion again and again that well,
25 we've reviewed 60 cases and, you know, what's

1 the bottom line. People say we're not looking
2 at POC, but everybody comes up to the mike and
3 says to me well, what's the bottom line. None
4 of these cases would have changed. Right? And
5 here you have a case where what's the bottom
6 line -- well, it may have affected the bottom
7 line, and then you may have had to rework the
8 whole case. You know, you're -- I -- I
9 understand it, but you're randomly -- we're
10 randomly selecting, so we don't know --

11 **MR. HINNEFELD:** Well --

12 **MR. GRIFFON:** -- if this may have selec--
13 affected one case or -- or a number of them,
14 you know.

15 **MR. HINNEFELD:** We don-- the selection --

16 **MR. GRIFFON:** I guess that's (unintelligible).

17 **MR. HINNEFELD:** The selection's not really
18 random. They're -- it -- it's preferentially
19 selected to have cases close to but not above
20 50 percent.

21 **MR. GRIFFON:** That's -- that's true, they're
22 not -- not completely random.

23 **MR. HINNEFELD:** That is the selection
24 (unintelligible) so it's not really a random --

25 **MR. GRIFFON:** But it's not -- we're not looking

1 at all --

2 **MR. HINNEFELD:** Not looking at all of them,
3 that's true.

4 **MR. GRIFFON:** Right, right, right.

5 **DR. NETON:** This is Jim Neton. I just at this
6 point have an observation. It seems to me if
7 the Board in its past were reviewing the
8 scientific validity and accuracy of the dose
9 reconstruction, then -- and to accomplish that
10 you were looking at individual dose
11 reconstructions but they were not essentially
12 reviews of individual reconstructions in and of
13 themselves. They're looking at the scientific
14 validity and accuracy of the processes
15 employed. And to that extent, you -- the Board
16 -- or the working group subsequently did
17 identify an error.

18 **MR. GRIFFON:** Yeah.

19 **DR. NETON:** And I think that -- that's where it
20 stands. You know, these are not second bites
21 at the apple, so to speak, of all the dose
22 reconstructions we've done. I mean I think we
23 take great pains to separate those two
24 concepts. So --

25 **MR. GRIFFON:** No, I -- I think we're all right

1 and that -- that was helpful in clarifying the
2 initial finding and that we -- you know, we --
3 errors were identified and corrected and -- so
4 I -- I think we're all right in terms of why --
5 I understand why NIOSH reworked the case, and I
6 think we know -- you know, we -- we can now say
7 what -- you know, this was a finding and it
8 resulted in modifications and -- but ultimately
9 the case was reworked and it checks out. SC&A
10 agrees with the way the rework was done, at
11 least in their draft analysis, so -- okay. All
12 right. We can move on from that one, if
13 there's no more comments. I'm sorry to take up
14 so much time with that. I just wanted to
15 understand --

16 **DR. WADE:** Well, it's important to get that --

17 **MR. GRIFFON:** -- rework versus recalculate,
18 yeah, yeah.

19 **MR. HINNEFELD:** Okay, the -- the next finding
20 that has new information on it is 68.2, the
21 finding is failure to account for angular
22 response of dosimeter. And this finding speaks
23 to the fact that this -- we use the dose to the
24 badge -- you know, the recorded dose is the
25 dose to the badge, and is that really a

1 person's dose. So in choosing to do that,
2 we've essentially used this information, that
3 for a dosimeter the angular dependence is
4 relatively small, for about 45 degrees each way
5 normal -- up through normal to 45 degrees.
6 There's a relatively low -- you know, actually
7 very low angular dependence through that range.
8 For most occupations and workplaces we
9 essentially make the assumption, although we
10 don't speak right out and say this, that the
11 majority of a person's dose -- not necessarily
12 the majority of their time, but a majority of
13 their dose will be received from proximity and
14 facing the -- the radiation source. And
15 therefore we believe the badge to be the best
16 first estimate at the dose to a person.
17 Now there are cases when that would not
18 necessarily be the case. And there have been
19 geometric adjustments made in some of our
20 technical documents, notably glovebox workers.
21 And I believe there are a series of geometric
22 adjustments in the Mallinckrodt site profile
23 for non-presumptive cases. And we make
24 consideration of things like that when there's
25 clear evidence that there's some need for an

1 adjustment here. So -- and -- and typically if
2 a person -- you know, if you want to carry it
3 to extremities versus badge, if a person has a
4 cancer on the extremity, we know the badge
5 reading in all likelihood is not going to be
6 the appropriate reading. So we do make
7 geometric adjustments in cases, but we do feel
8 like by and large the badge dose is the best
9 indicator that we would have, rather than
10 trying to find some routine adjustment to the
11 badge dose for the person's dose.

12 **MR. FARVER:** Doug Farver with SC&A. We agree
13 with -- with what they have written. We just
14 want to see -- we -- we would like a little bit
15 more time to see if, in this case, a geometric
16 adjustment is warranted. We agree that most of
17 the time it's one and about the -- the -- the
18 angles, but we'd just like a little bit more
19 time.

20 **MR. GRIFFON:** And Stu, just -- just to find our
21 place on the matrix here, that's finding number
22 --

23 **MR. HINNEFELD:** 68.2.

24 **MR. GRIFFON:** -- 68.2.

25 **MR. HINNEFELD:** (Unintelligible) number these

1 pages (unintelligible).

2 **MR. GRIFFON:** Okay, the only thing I -- we --
3 we skipped over 67.8, 67.9 and 67.11?

4 **MR. HINNEFELD:** Well, there's no information
5 that's been provided since --

6 **MR. GRIFFON:** Right --

7 **MR. HINNEFELD:** -- the last Board --

8 **MR. GRIFFON:** -- right, right, okay.

9 **MR. HINNEFELD:** If the --

10 **MR. GRIFFON:** Just -- just since they're on the
11 matrix, I was going to -- I was going to at
12 least ask SC&A --

13 **MR. HINNEFELD:** Oh, okay.

14 **MR. GRIFFON:** -- if -- so let me -- let me -- I
15 think we're okay on 68.2.

16 **MR. HINNEFELD:** Okay.

17 **MR. GRIFFON:** Going back to 67.8, that's being
18 addressed in the procedures workgroup. There's
19 no more -- we don't need any more there. 67.9
20 and 67.11, we did see this initial analysis at
21 the last meeting, and I just wanted to make
22 sure for our matrix that SC&A concurred. I
23 think -- I think we had agreement -- okay. So
24 I'm getting a nod that SC&A agrees with that.
25 So those -- we have agreement on 67.9 and

1 67.11.

2 Then moving on to 68.3.

3 **MR. HINNEFELD:** Okay, 68.3 -- 68.3, we also
4 added additional information. It's -- there is
5 some -- I believe there's some red non-
6 italicized information which was -- no, I guess
7 not. If there's red unitalicized, it was new
8 information at the last Board meeting, and then
9 red italicized is where the new information for
10 this Board meeting starts.

11 This is about conversion of -- of ambient dose
12 using -- to organ dose using the isotropic DCF
13 since we generally use AP DCFs. But in our
14 position, environmental or ambient exposure is
15 in fact an isotropic exposure and unless the
16 measuring device is shielded on one side -- for
17 instance, like being worn on a person's chest -
18 - that isotropic is appropriate to use. And as
19 a general rule, many of the ambient doses are
20 either calculated numbers from emission data or
21 some of the times they're instrument
22 measurements, and on occasion they'll be
23 environmental TLDs, so at any rate, our
24 position is as a general rule an ambient dose
25 is an isotropic exposure geometry so the

1 isotropic are appropriate to use.

2 **MR. GRIFFON:** Doug.

3 **MR. FARVER:** SC&A agrees with that. That's
4 fine.

5 **MR. GRIFFON:** Yeah, and -- and I think -- wa--
6 was the initial reason this was a finding --
7 was it a question of the conservative
8 application of the AP versus the iso or -- I
9 mean I -- I think this is logical and it makes
10 sense, but I think there was a question of
11 consistency, was there -- or no? Am I wrong on
12 that?

13 All right. I think we all agree this is
14 appropriate, so SC&A agrees with that.

15 68.4?

16 **MR. HINNEFELD:** Okay, this -- there's no new
17 information for this. I believe we did provide
18 IMBA analyses of these.

19 **MR. GRIFFON:** Okay.

20 **MR. FARVER:** Doug Farver with SC&A. At our
21 last meeting, yes, you -- you provided the
22 analyses for IMBA and (unintelligible) the
23 initial finding was the selection of solubility
24 class was not claimant favorable as to -- they
25 were choosing type S material or type M

1 material.

2 We went back and looked at this case 'cause we
3 were reviewing NIOSH's data and we went back
4 and just reviewed the case, and we noticed a
5 couple of other things. One of the things we
6 noticed when NIOSH did their calculation is
7 they assumed there was a bioassay sample on the
8 last day of employment. There wasn't.

9 **MR. GRIFFON:** Wait, is this 68.4 or 69.4 you're
10 looking at, Doug?

11 **MR. FARVER:** Oh, I'm sorry, I'm at 69.4. Are
12 we at 68.4?

13 **MR. GRIFFON:** Yeah, 68.4 is the one we -- yeah.

14 **MR. FARVER:** Oh, I don't believe we have any
15 concerns on that one. It's all right.

16 **MR. GRIFFON:** I think we're okay on that one,
17 yeah. All right. 68.5 then?

18 **MR. HINNEFELD:** Are we up to -- which -- which
19 finding do you want to go to, Mark?

20 **MR. GRIFFON:** It's 68.5 and it's really -- no
21 further information from NIOSH, so -- so I
22 think SC&A's okay on this. 68.7 is being
23 addressed in the procedures workgroup. 68.8 --
24 again, I think this falls under the whole
25 approach for internal dose assessment and I

1 think SC&A was in agreement with this. And
2 68.9, I'm assuming the same unless I hear
3 otherwise from -- okay.

4 Then we're on to 69, which is the next case --
5 69.2, first of all, failure to account for
6 recorded photon dose uncertainty. I'll -- Stu,
7 nothing new here. Right?

8 **MR. HINNEFELD:** Correct.

9 **MR. GRIFFON:** And I don't think -- I think
10 SC&A's okay with the response from NIOSH on
11 this. Believe the same goes for 69.3, it's the
12 same issue, really. And 69.4 -- this is the
13 one you were starting to talk about now, 69.4.

14 **MR. FARVER:** Oh --

15 **MS. BEHLING:** This is Kathy Behling. Mark, if
16 you don't mind, could we go back to 68.8 and
17 68.9?

18 **MR. GRIFFON:** Sure, yeah.

19 **MS. BEHLING:** I -- I believe, unless I
20 (unintelligible) for some response from NIOSH
21 or some additional information from NIOSH.

22 **MR. GRIFFON:** Yeah, there are blanks in the
23 NIOSH response, Stu, but there's dates that --

24 **MR. HINNEFELD:** There's --

25 **MR. GRIFFON:** -- indicate that you gave us

1 something, so I'm not sure --

2 **MR. HINNEFELD:** Right, it's -- hang on a
3 minute.

4 **MR. GRIFFON:** Thank you, Kathy.

5 (Pause)

6 **MR. HINNEFELD:** I may have a little trouble
7 finding it right away.

8 (Pause)

9 **MR. GRIFFON:** My -- my sense is that .8 and .9
10 tie back into the internal dose calculation,
11 whether the -- the approach used was going to
12 be bounding of the information in the CATI and
13 -- and -- and any incidents brought up, but I -
14 - I -- I do note -- Kathy is correct, we don't
15 really have a response in the matrix here, so -
16 - unless it was all in that one response, Stu.
17 That's all I can think.

18 **MR. HINNEFELD:** Right. Well...

19 (Pause)

20 I'm a little at a loss right now to be able to
21 find --

22 **MR. GRIFFON:** Okay.

23 **MR. HINNEFELD:** -- where that was sent.

24 **MR. GRIFFON:** I was thinking --

25 **MR. HINNEFELD:** (Unintelligible)

1 **MR. GRIFFON:** -- I was thinking it might have
2 come in with 68.4 and 5, you might have rolled
3 it all into one response.

4 **MS. MUNN:** (Off microphone) I see the
5 transmission letter, (unintelligible) based on
6 information on 67.9, 68.4 and 68.5
7 (unintelligible) says the (unintelligible) and
8 fourth 20-case matrix (unintelligible) --

9 **MR. GRIFFON:** Well, here's what I'd propose to
10 do --

11 **MR. HINNEFELD:** (Unintelligible)

12 **MR. GRIFFON:** -- let's hold these open for now.
13 Let's not say SC&A agrees yet until we get to a
14 little better clarification, but likely -- it -
15 - it -- I think that we had agreement or close
16 to it here. Let's just make sure we --

17 **MR. HINNEFELD:** There -- actually I believe
18 there was some information sent. It was part
19 of a folder of -- it's a Word file response to
20 68.5, 68.8 and 68.9.

21 **MR. GRIFFON:** So it was all together with 68.5?
22 That's what --

23 **MR. HINNEFELD:** It was with 68.5.

24 **MR. GRIFFON:** -- I thought it might have been,
25 yeah. But you didn't summarize in the matrix

1 here so maybe -- maybe we can just -- let's
2 flush that out and leave it as a likely
3 agreement with SC&A, but -- but we'll make sure
4 -- let -- let Kathy have a final look at that.

5 **MR. HINNEFELD:** Okay.

6 **MR. GRIFFON:** All right?

7 **MS. MUNN:** (Off microphone) Yeah, that was
8 (unintelligible).

9 **MR. GRIFFON:** Stu, you -- just to clarify, you
10 can maybe pull out the appropriate sentence or
11 two that can go in this matrix -- right? -- to
12 -- from your letter response?

13 **MR. HINNEFELD:** Yeah.

14 **MR. GRIFFON:** Okay.

15 **MR. HINNEFELD:** Okay, this -- and that's for
16 68.8 --

17 **MR. GRIFFON:** 68.8 and 9, right. All right,
18 69.2 and 3 we went to, and then I -- 69.4 I
19 think Doug was getting ready to give us a
20 response to that, so I'm on -- I'm on 69 --
21 69.4.

22 **MR. FARVER:** Okay, now 69.4. This was a
23 solubility finding about the difference between
24 type M and type S plutonium. And we went back
25 and reviewed the case and we found a couple of

1 other items. When they initially calculated
2 the plutonium dose -- is -- they chose a
3 bioassay point in 1996, the last day of the
4 EE's employment. However, the last bioassay
5 datapoint was actually in 1982. So when you go
6 back and actually plot the data, you -- you
7 wind up with a higher dose than their
8 hypothetical dose, and -- so that's just
9 something new that came out of this.

10 **MR. GRIFFON:** Okay. I -- I think this is
11 probably one that -- that you -- you -- like I
12 said, SC&A did provide a draft response to some
13 of these things. I did not distribute it. I
14 think this might be something that NIOSH needs
15 to look at closer.

16 **MR. FARVER:** I agree.

17 **MR. GRIFFON:** And we might even be able to get
18 Doug and Kathy on the phone with Stu or -- and
19 whoever at ORAU and resolve this as one of our
20 technical conference calls rather than a full
21 committee. This looks like a sidebar might be
22 necessary. It's a -- th-- there are some
23 questions on -- that we'd have to look at the
24 actual IMBA runs, I think, and compare notes,
25 basically. Is that fair?

1 **MR. HINNEFELD:** I think so. Could there have
2 been a termination in vivo count for this
3 person?

4 **MR. GRIFFON:** That's what I was asking, if
5 there was a termination count in '96, but
6 apparently --

7 **MR. FARVER:** There was no lung count. There
8 may have been a whole body count, but I'm not
9 even sure of that.

10 **MR. HINNEFELD:** (Unintelligible) I'll -- I'll
11 just have to go look. I don't (unintelligible)
12 --

13 **MR. GRIFFON:** Have to get a closer look, and I
14 -- I propose that we do this with a technical
15 call and then bring all -- all the information
16 back certainly in the public meeting, but let's
17 let a few people work together on a phone call
18 and resolve this in a technical phone call. We
19 can set that up before the next meeting.

20 **MR. PRESLEY:** Hey, Mark, this is Bob.

21 **MR. GRIFFON:** Yeah.

22 **MR. PRESLEY:** When they recalculated this, what
23 was the change in the -- in the finding?

24 **MR. GRIFFON:** Well, you had a fairly
25 significant -- I don't know how significant,

1 but a difference in dose, certainly.

2 **MR. FARVER:** Well, the additional finding -- we
3 believe it should have been a different
4 material class and NIOSH did not believe that,
5 and they gave their justification for what they
6 -- they did. So they did not recalculate. And
7 -- and during our review of their response,
8 this is where this other information we found --
9 -- about that they may not have properly
10 calculated it in the first place. This is what
11 we need to get with NIOSH and -- and let them
12 look at.

13 **MR. GRIFFON:** I think what -- I think Bob was
14 asking, with your approach you got a slightly
15 higher dose. Is that -- than the initial --

16 **MR. PRESLEY:** Yes.

17 **MR. FARVER:** It -- it was a higher dose than --

18 **MR. GRIFFON:** Yeah.

19 **MR. FARVER:** -- and I do not know how that
20 would affect the POC.

21 **MR. GRIFFON:** Right, right. So we -- we just
22 have to have a technical call --

23 **MR. PRESLEY:** Need to check that out.

24 **MR. GRIFFON:** Yeah.

25 **MS. MUNN:** (Off microphone) What site was that

1 case (unintelligible), do we know?

2 **MR. GRIFFON:** Was that Savannah River or --
3 or...

4 **UNIDENTIFIED:** (Off microphone) Savannah River.

5 **MR. GRIFFON:** Savannah River, yeah.

6 **MS. MUNN:** Thank you.

7 **DR. WADE:** Doug, why don't you -- why don't you
8 come up here --

9 **MR. GRIFFON:** Yeah, why don't you --

10 **DR. WADE:** -- and join us.

11 **MR. GRIFFON:** You might as well.

12 **DR. WADE:** Easier for you and save you all the
13 wear and tear.

14 **MR. GRIFFON:** Now that we're almost to -- well,
15 we'll probably need him for the fifth set, too.
16 All right, 69.5 is the next one I have, and you
17 actually gave a separate document, Stu. This
18 is your other document. Right?

19 **MR. HINNEFELD:** Correct.

20 **MR. GRIFFON:** So there's a separate Word doc--
21 Word document? Yeah, Word document that --
22 that gives a little more detail on the
23 selection of the triangular distribution. Did
24 everyo-- does everyone have that second
25 document as well?

1 All right. Stu, I'll let you describe that and
2 then...

3 **MR. HINNEFELD:** Okay, the --

4 **MR. GRIFFON:** I'm not sure if SC&A had an
5 opportunity to look at this or not, but...

6 **MR. HINNEFELD:** The finding relates to use of a
7 triangular distribution with a min of zero, a
8 max of the MBA* and a load of MBA over two in
9 the evaluation of this in vivo data in this
10 case, because in the record received from
11 Savannah River there is a number called net in
12 the -- in the actual output of the in vivo
13 count there's this number in their column
14 that's called net, meaning net counts, and
15 those are consistently positive. But in the
16 Savannah River record the net count rate for a
17 particular count is just -- is the count of an
18 individual minus the background of an empty
19 chamber background. And an empty chamber in
20 vivo background will be far less than the count
21 rate would be if you had a person -- an
22 unexposed person in there. So there is a --
23 there is a predicted number of counts they --
24 in the region of interest, based usually on
25 some other aspect -- it's usually based on some

1 other counting, some other -- counting of some
2 other region of the energy spectrum, maybe
3 potassium-40 peak or something, and so there's
4 a calculated number of counts that they would
5 expect in the region of interest based on, you
6 know, the other -- the presence of a person in
7 the -- in the chamber. So the actual number
8 that is the in vivo result number is in a
9 column called diff -- d-i-f-f, or difference --
10 which is the difference between the net counts
11 and the calculated counts. So since those
12 counts -- that differen-- that difference
13 column is -- is actually those numbers for the
14 majority of these counts, do move back and
15 forth between positive and negative values.
16 And so that's what you would expect in a -- in
17 a -- in an unexposed individual.
18 Then there was one count where it did look to
19 be a positive count. It's an americium-241
20 count. And the dose reconstruction essentially
21 judged that to be a false positive result
22 because the person did not work in a location
23 where, you know, purified americium-241 was
24 used. They worked in a situation where
25 plutonium was used that would have americium-

1 241 in it. There was a bioassay sample taken
2 eight days after this in vivo count for
3 plutonium intake to -- to try to confirm --
4 essentially they were investigating this in
5 vivo count is what it looks like -- to see was
6 there a bioassay number here that -- that will
7 support that there was some intake here, and
8 that didn't occur. And then there were no
9 subsequent positive in vivo counts, so based on
10 that, dose reconstruction determined that this
11 americium result that was, you know,
12 incorrectly counted as -- or incorrectly came
13 up positive and so it wasn't included and so --
14 in the dose reconstruction. It would have to
15 be -- you know, if -- so that's -- that was the
16 thought process that was used.

17 **MR. GRIFFON:** And -- and you actually -- I mean
18 in the document, if I read this right, you --
19 you actually indicate that there was a -- a
20 study group used for this background sort of
21 rate. Is that -- is that -- am I reading that
22 right?

23 **MR. HINNEFELD:** If I'm not mistaken --

24 **MR. GRIFFON:** Looks like in the matrix there
25 was one person, then -- then you mention

1 several people were monitored and some sort of
2 background average was calculated. Is that --
3 is that documented --

4 **MR. HINNEFELD:** That's --

5 **MR. GRIFFON:** -- at Savannah River or -- is
6 this Savannah River, Stu?

7 **MR. HINNEFELD:** Yeah, it's Savannah River.

8 **MR. GRIFFON:** Yeah.

9 **MR. HINNEFELD:** It is documented, yes --

10 **MR. GRIFFON:** Yeah.

11 **MR. HINNEFELD:** -- and it's -- I believe it was
12 a population of unexposed people were counted
13 in order to determine that calculated --

14 **MR. GRIFFON:** Right.

15 **MR. HINNEFELD:** -- value. What would you
16 expect in the region of interest for a certain
17 number of counts, however -- however they
18 depend -- however they get. It was done
19 various ways at different sites, but usually it
20 involves a counting in a higher energy region.

21 **MR. GRIFFON:** Right.

22 **MR. HINNEFELD:** And that -- that comparison to
23 the region of interest.

24 **MR. GRIFFON:** Okay. Doug.

25 **MR. FARVER:** When we reviewed the lung count

1 data, particularly the '81, '82 and '83 lung
2 counts, if you notice, the chest wall thickness
3 changes. The height and weight of the
4 individual stays the same, but the chest wall
5 thickness changes, and we would like to discuss
6 this with NIOSH, but I believe that there's an
7 algorithm that they use to calculate chest wall
8 thickness in the -- I don't believe they used
9 ultrasound back then at Savannah River. And it
10 may just be a typo, but I believe that chest
11 wall thickness value will have an impact on the
12 counts.

13 **MR. HINNEFELD:** Okay. Well, I -- I think that
14 a conversation maybe would be worthwhile. Now
15 you -- this is part of your draft response as
16 well, or is there (unintelligible) about this
17 or not?

18 **MR. FARVER:** No, this just came to light
19 recently.

20 **MR. HINNEFELD:** Okay. Well --

21 **MR. GRIFFON:** Well, this can --

22 **MR. HINNEFELD:** -- (unintelligible) --

23 **MR. GRIFFON:** -- certainly be in that technical
24 phone call that we do follow up on this. It's
25 the same case, so -- yeah. But Jim might have

1 an answer for us.

2 **DR. NETON:** I just don't think that a chest
3 wall thickness correction would affect the
4 number of counts observed. It might affect the
5 efficiency correction in the end result, but --

6 **MR. HINNEFELD:** It would affect the calculated
7 value.

8 **DR. NETON:** Calculated value, but as far as a
9 basis to -- comparison to the MBA would have
10 no...

11 **MR. HINNEFELD:** But it would -- it would affect
12 the difference. It would affe-- since it would
13 affect the calculated value in the region of
14 interest.

15 **DR. NETON:** Only if you applied the efficiency
16 to those values prior to doing the final
17 calculation. I mean a chest wall thickness
18 correction is -- is an efficiency-based number,
19 so the net numbers that are coming off the
20 chest are irrelevant, the chest wall thick--
21 they are what they are. You take the net
22 number that you observe and then apply an
23 efficiency correction based on the chest wall
24 thickness. I don't -- I don't think the net
25 counts here has any basis --

1 **MR. GRIFFON:** Comes into play, yeah, yeah.

2 **DR. NETON:** -- in the chest wall thickness.

3 This is probably something we should take off
4 line --

5 **MR. GRIFFON:** Yeah.

6 **DR. NETON:** -- but I don't see how chest wall
7 thickness could affect --

8 **MR. FARVER:** And it may not have an impact.

9 The point was there's a discrepancy in the
10 chest wall thickness and we'd just like you to
11 take a look at it.

12 **MR. HINNEFELD:** Yeah.

13 **MR. GRIFFON:** Okay. Then back to the primary
14 document we've been working from, 69.6 is the
15 next finding, and I think we have -- 69.6, you
16 have that one?

17 **MR. HINNEFELD:** It's not on --

18 **MR. PRESLEY:** (Off microphone) (Unintelligible)

19 **MR. HINNEFELD:** -- it's 5 and 7.

20 **MR. GRIFFON:** 69.5, 69.--

21 **MS. MUNN:** (Off microphone) You're back on the
22 original matrix (unintelligible).

23 **MR. GRIFFON:** I'm back on the one Stu just sent
24 out -- 69.6, the top of page 3 -- no, I don't
25 have a 69.7, actually. I didn't think I edited

1 this one.

2 **UNIDENTIFIED:** (Off microphone)

3 (Unintelligible)

4 **MR. GRIFFON:** The finding is September 28th.

5 Wait a second, wait a second. I am on the

6 wrong document. I'm sorry.

7 I'm sorry, I was looking at -- at SC&A's draft

8 responses -- 69.7, you're correct. All right.

9 And that's being deferred to the workgroup.

10 This is the fission product analysis.

11 And then 69.8?

12 **MR. HINNEFELD:** Yeah, this is the same issue as

13 before but this is in the fission product

14 region of interest. And again it's the use of

15 the --

16 **MR. GRIFFON:** Oh, yeah.

17 **MR. HINNEFELD:** -- the difference column as

18 opposed to the net column as what the indicator

19 is of the bioassay result.

20 **MR. GRIFFON:** And any new issues on this one,

21 Doug?

22 **MR. FARVER:** We're at 69.8, is that right?

23 **MR. GRIFFON:** Yeah.

24 **MR. FARVER:** Triangular distribution, is that

25 what we're talking about?

1 **MR. FARVER:** -- they -- they agree they were
2 going to make the connection.

3 (Whereupon, Mr. Griffon, Mr. Hinnefeld and Mr.
4 Farver all spoke simultaneously.)

5 **MR. GRIFFON:** So there's agreement, right,
6 right, right --

7 **MR. HINNEFELD:** Yeah.

8 **MR. GRIFFON:** -- okay. 71.2? Really the
9 question goes to SC&A. I think there was no
10 more information, but...

11 **MS. MUNN:** (Off microphone) I'd say we
12 (unintelligible) previous one, NIOSH agrees
13 (unintelligible).

14 **MR. GRIFFON:** Yeah, so I'm not sure why this
15 made this matrix, Stu, but...

16 **MR. HINNEFELD:** Well, I mean it's --

17 **MR. GRIFFON:** Yeah, okay.

18 **MR. HINNEFELD:** We were asked -- it's -- it's
19 something we were to provide additional
20 information on that we provided in May. It's
21 the use of a DCF of -- of one and a -- a
22 constant for measured dose as an overestimating
23 approximation for using a normally-distributed
24 measured dose, combined with a triangular DCF
25 that is all less than one.

1 **MR. GRIFFON:** Yeah.

2 **MR. HINNEFELD:** So there has -- there was
3 information assembled that illustrated the
4 effect -- you know --

5 **MR. GRIFFON:** That's (unintelligible)

6 **MR. HINNEFELD:** -- you did it both ways, what
7 was the change, and it was the -- the
8 triangular distribution and the normal
9 distribution of the measured dose were only --
10 only -- the only time that exceeded the other
11 way was for low doses on a couple of organs.

12 **MR. GRIFFON:** I do -- do remember this
13 discussion. I think we were -- we were in
14 agreement on that. Right? SC&A was in
15 agreement.

16 **MR. FARVER:** I'd like to go back to 69.6, and I
17 believe the last I have in the matrix was SC&A
18 to review.

19 **MR. GRIFFON:** Yeah, 69.6, that was the one I
20 was saying was on your matrix but not on Stu's,
21 so --

22 **MR. HINNEFELD:** (Off microphone) Okay, well,
23 (unintelligible) --

24 **MR. GRIFFON:** -- SC&A -- yeah.

25 **MR. HINNEFELD:** -- matrix (unintelligible)

1 SC&A's reviewed, then I would not
2 (unintelligible) --

3 **MR. GRIFFON:** That's right.

4 **MR. HINNEFELD:** I generated this because of
5 stuff we owed.

6 **MR. GRIFFON:** Okay.

7 **MR. FARVER:** Okay.

8 **MR. HINNEFELD:** That's why I generated this.

9 **MR. GRIFFON:** That's right, so we -- we asked
10 SC&A to -- SC&A wanted more time to follow up
11 and review --

12 **MR. HINNEFELD:** Right.

13 **MR. GRIFFON:** -- on that one, so 69.6, do you
14 have a -- a response to that?

15 **MR. FARVER:** Yes. We agree to that. We
16 understand how IMBA breaks it out, and then
17 totals it up as lung to americium, so we --
18 we've worked through that.

19 **MR. GRIFFON:** Okay, that was -- that was the
20 assigning all those alpha dose instead of
21 breaking out the electron do-- yeah.

22 **MR. FARVER:** Correct.

23 **MR. GRIFFON:** Okay, so SC&A's looked at that
24 and is in agreement, so we can close that one
25 out.

1 **MS. MUNN:** (Off microphone) closed, 69.9,
2 right?

3 **MR. GRIFFON:** 69.6 is closed.

4 **MS. MUNN:** Point 6.

5 **MR. FARVER:** And then 69.9 I believe was
6 further discussion.

7 **MR. GRIFFON:** Yeah, 69.9, I do have that one.
8 Okay. I guess I should look at both the
9 matrices here. 69.9 -- Stu, maybe you can -- I
10 mean Doug, maybe you can outline this finding
11 and tell us where you stand on it now 'cause
12 some people probably don't have this in front
13 of them. 69.9, the original finding says use
14 of environmental internal exposure values to
15 account for likely tritium, iodine and uranium
16 inappropriate.

17 **MR. FARVER:** And -- and basically the NIOSH
18 response was well, the person was not
19 occupationally monitored for these nuclides and
20 therefore we assessed an environmental dose --
21 which we agree with, all except the tritium.
22 The individual did submit a couple of tritium
23 samples. It is not indicated in the case files
24 anywhere where the dose reconstructor looked at
25 these results, or did a calculation. Because

1 if you did a calculation, such as using your
2 tritium workbook, you would come up with a
3 couple of dose entries for the year that the
4 individual submitted the bioassay samples,
5 whereas there are no dose entries for tritium
6 for those years. And this is something we can
7 work with NIOSH on.

8 **MR. GRIFFON:** Okay.

9 **MR. HINNEFELD:** Yeah, we can -- we'll put it in
10 the phone call. You know, again, we'd like to,
11 you know, see the draft and -- and then we'll
12 have a call.

13 **MR. GRIFFON:** I mean the question I had on this
14 -- and I don't if -- if either NIOSH or SC&A
15 can answer, but for uranium, for instance, I
16 assume that you looked at job title and
17 locations and determined that this person
18 didn't work in any areas with uranium, so you
19 looked at the envi-- instead of a coworker
20 model --

21 **MR. HINNEFELD:** Yes. Yes, the --

22 **MR. GRIFFON:** -- you used environmental.

23 **MR. HINNEFELD:** I think we may have actually
24 said that since there was no data, we said, you
25 know, we assumed he wasn't exposed. But that's

1 not what we do. We don't consider the absence
2 of monitoring data to be evidence of lack of
3 exposure. We have to have something else to --

4 **MR. GRIFFON:** So you looked at the wor-- okay.

5 **MR. HINNEFELD:** Yeah.

6 **MR. GRIFFON:** That's what I wanted to hear.

7 All right. And -- and the other -- the tritium
8 we follow up on a technical call.

9 And I think I'm back to NI-- the matrix we're
10 working from, 76.2, is that where I left off?

11 I think 76.2 at the bottom of --

12 **MS. MUNN:** Yes.

13 **MR. GRIFFON:** -- bottom of the page.

14 **MR. HINNEFELD:** Yes, this was -- if I'm not
15 mistaken, this was a Fernald case that excluded
16 neutron doses for a number of years when it
17 should have been included, and we've gone back
18 and included those, and then the effect of
19 doing that is -- is recorded here. I believe I
20 probably have but did not distribute a folder -
21 - a file that shows this work, so I can -- I
22 can send that to the committee just to verify
23 that --

24 **MR. GRIFFON:** Yeah, I --

25 **MR. HINNEFELD:** -- we've done --

1 **MR. GRIFFON:** -- I'd be interested in it, only
2 because of -- and I -- and I'm not saying --
3 I'm not disputing this, but it is interesting
4 that the ten rem only affected the POC very
5 slightly, so -- I'm not disputing that, but it
6 would be interesting to look at.

7 **MS. MUNN:** (Off microphone) (Unintelligible)
8 over a significant period of years. Right?

9 **MR. GRIFFON:** Yeah, yeah.

10 **MR. HINNEFELD:** (Off microphone)
11 (Unintelligible)

12 **MR. GRIFFON:** That's right.

13 **MR. HINNEFELD:** Recall that if you have a -- it
14 takes quite a lot sometimes to --

15 **MR. GRIFFON:** Yeah. Oh, yeah, I know.

16 **MR. HINNEFELD:** -- 40 per-- if you have a 40
17 percent POC, you're only 50 -- you still need
18 50 percent more --

19 **MR. GRIFFON:** Yeah, yeah.

20 **MR. HINNEFELD:** -- risk to get you to 50
21 percent.

22 **MR. GRIFFON:** Yeah, like I said, I didn't
23 expect a dramatic switch, but that was like
24 less than one percent, which was interesting to
25 me.

1 **MS. MUNN:** Just over (unintelligible) years.

2 **MR. GRIFFON:** So if you can -- if you can --
3 yeah. Maybe if you can just give us that --
4 that backup dat-- material on that and --

5 **MR. HINNEFELD:** All right.

6 **MR. GRIFFON:** And the -- can I ask a follow-up?
7 I don't know if -- if Doug has any, but on that
8 one you included unmonitored -- I guess we can
9 see this in the details, but unmonitored
10 neutron dose in this case, was it a coworker
11 model or was it just a --

12 **MR. HINNEFELD:** At Fernald I believe a neutron-
13 to-photon ratio is used.

14 **MR. GRIFFON:** So you used neutron-to-photon
15 ratios?

16 **MR. HINNEFELD:** I believe that's what's used at
17 Fernald.

18 **MR. GRIFFON:** Okay. So I think we might want
19 to -- that'll be in the backup materials? I
20 mean the stuff you can give us?

21 **MR. HINNEFELD:** Well, the -- the derivation of
22 the neutron-to-photon ratio I believe is in the
23 Fernald site profile, so I mean I could
24 probably clip out the appropriate section.

25 **MR. GRIFFON:** Well -- or just reference it.

1 You don't have to -- yeah.

2 **MR. HINNEFELD:** All right.

3 **MR. GRIFFON:** Okay. Anything else?

4 **MR. FARVER:** No, they made the correction we
5 asked --

6 **MR. GRIFFON:** I'm going to -- I'm going to go
7 back -- there was a couple we asked SC&A I
8 think for --

9 **MR. FARVER:** Okay.

10 **MR. GRIFFON:** -- follow-up on, 73.5, this was a
11 failure to account for assigned neutron dose, I
12 think it was Y-12 -- is that Y-12? Yeah.

13 **MR. FARVER:** I think so.

14 **MR. GRIFFON:** And basically I think it was
15 NIOSH's position that the individual did not
16 work in any areas likely to have neutron
17 exposure, based on, again, job history and --
18 and building -- buildings where he would have
19 been working. And SC&A --

20 **MR. FARVER:** We have a different opinion. We
21 just feel that based on his occupation and some
22 of the information contained in the CATI
23 report, such as what he did, the repairs he
24 made, the types of material he worked with,
25 that we believe that it is likely that he had

1 some un-- unmonitored neutron exposure. We're
2 just -- don't -- not clear on what extent that
3 is.

4 Now NIOSH did go ahead and calculate a missed
5 neutron dose.

6 **MR. GRIFFON:** Right. So it wasn't that no
7 neutron dose was assigned. It's just that you
8 didn't use a coworker approach or -- you just
9 assigned missed neutron dose. Right? So which
10 -- which may --

11 **MR. FARVER:** Well, first --

12 **MR. GRIFFON:** -- which may still be
13 conservative, is -- I guess you
14 (unintelligible).

15 **MR. FARVER:** It may be -- you know, their
16 position was we don't feel he needed to be --
17 he wasn't neutron monitored and -- but we went
18 ahead and calculated a missed neutron dose.
19 Now our position is he probably did have
20 neutron exposure, so is that the best method to
21 account for it.

22 **MR. GRIFFON:** Okay. And a-- and again, I think
23 to -- to go any further with this one, I think
24 we need the rationale by which you came to that
25 conclusion. You know, what -- what led you to

1 believe that -- I -- I see in your -- your
2 summary the CATI was one piece, but also I
3 think you looked at -- at certain buildings and
4 had an opinion on --

5 **MR. FARVER:** Based on the buildings he worked
6 in and the types of work he did, and the time
7 period. I believe it was the '80s.

8 **MR. GRIFFON:** Okay.

9 **MR. FARVER:** We just have reason to believe
10 that the neutron monitoring -- they may not
11 have badged everybody that really needed
12 neutron monitoring during that time period.

13 **MR. GRIFFON:** All right. Well --

14 **MS. MUNN:** That confuses one a little bit,
15 based on the NIOSH response to the original
16 comment, that said according to the site
17 profile the source for potential neutron
18 exposure in the building where the employee was
19 most frequenting was a secure storage area for
20 enriched uranium.

21 **DR. WADE:** Wanda, please speak up and get
22 closer.

23 **THE COURT REPORTER:** Speak right into these
24 mikes.

25 **MS. MUNN:** That the employee was unlikely to

1 have worked for extended periods in that secure
2 storage area, and -- but I'm hearing from Doug
3 that you've reviewed his background and felt
4 that he did work --

5 **MR. FARVER:** Yes, actually there's I believe
6 four buildings mentioned in the CATI report
7 that the employee worked in. He most likely
8 was one of these employees that frequented many
9 buildings making repairs, so he was from place
10 to place. But yes, there's several buildings,
11 not just the building that is referenced in the
12 NIOSH response.

13 **MS. MUNN:** But secure storage areas, in most of
14 these sites, were always monitored, even if the
15 employee was not routinely monitored. You
16 didn't allow unbadged employees in secure
17 storage areas.

18 **MR. FARVER:** Correct. He may have gone into
19 other locations other than the location
20 referenced, which -- which may go back to maybe
21 the site profile is not completely accurate.

22 **MS. MUNN:** Okay.

23 **MR. GRIFFON:** I think we have to get -- yeah,
24 John.

25 **DR. POSTON:** It -- Doug, it seems to me we have

1 to be a little more specific. There wasn't a
2 heck of a lot going on at Y-12 where there
3 would be neutron exposures in the '80s, so I
4 think we need to pull that string a little bit.
5 Just to say there may have been neutron
6 exposures, I think we need more data, more
7 understanding of what the processes were.

8 **MR. GRIFFON:** Yeah, I think we need to be very
9 specific. What buildings are we talking about,
10 you know, we --

11 **MR. FARVER:** I understand, I just don't know
12 how much I can say here.

13 **MR. GRIFFON:** I know -- yeah, we might not --
14 well, yeah, and if there's a security issue,
15 then we have a -- a clearance issue, then we
16 have a whole 'nother question of where we can
17 hold that discussion, but --

18 **MR. FARVER:** But I believe if you would look at
19 the -- the buildings that are mentioned in the
20 CATI report, that might help.

21 **MR. GRIFFON:** Okay. Maybe we can ask -- and
22 I'm sure NIOSH considered those initially, but
23 we can have a little more dialogue on the -- if
24 we have this follow-up technical call I think
25 we can have a little more dialogue there,

1 unless we get into a classified situation.
2 Then we can, if we need to, set up a -- you
3 know, a way to do that, but I -- I would hope
4 we don't come to that, just for --

5 **DR. POSTON:** Well, there's certainly enough
6 people on the committee that have clearances.

7 **MR. GRIFFON:** Yeah, but I mean just for one
8 finding out of a -- you know, seems like a lot
9 of -- but anyway, we -- let's see what we can
10 do on the technical call first and -- as far as
11 coming to some sort of agreement on what
12 buildings may have been a potential for
13 exposure.

14 **MS. MUNN:** And especially bearing in mind Dr.
15 Poston's comment about what was going on during
16 the '80s and --

17 **MR. GRIFFON:** In the '80s, right, right.

18 **MS. MUNN:** -- makes a big difference.

19 **DR. POSTON:** And this may be something that
20 Robert might want to look at. I mean he should
21 be more familiar.

22 **MR. GRIFFON:** Yep. Okay. All right, so we'll
23 hold that on the technical call at least,
24 follow up on that. So where were we, did we --
25 76.1, I think there was a follow-up there for

1 SC&A also. This was the -- the changing LOD
2 question I think.

3 **MR. FARVER:** We agree with NIOSH's response,
4 they're correct.

5 **MR. GRIFFON:** Okay.

6 **MR. FARVER:** The LOD was an error on our part.

7 **MR. GRIFFON:** So we have -- have agreement on
8 that.

9 **MR. FARVER:** Yes, we agree.

10 **MR. GRIFFON:** Okay.

11 **MS. MUNN:** It's okay?

12 **MR. GRIFFON:** That's 76.1, yeah, agreement on
13 that.

14 **MS. MUNN:** So it's done.

15 **MR. GRIFFON:** Yeah. Then back to our matrix,
16 76.2 -- did I already do that? Yes, we did
17 that one. And 76.3, I do note there's no
18 response in the NIOSH column here, although you
19 do have a date that you supplied --

20 **MR. HINNEFELD:** Right, that --

21 **MR. GRIFFON:** -- information, so --

22 **MR. HINNEFELD:** That file was sent on an e-mail
23 in April.

24 **MR. GRIFFON:** I think this was that zip file
25 that I overlooked at the last meeting. It was

1 in --

2 **MR. HINNEFELD:** Okay, might be, it -- it
3 contains actually several -- several files that
4 describe -- there's an IMBA run in there and
5 there's a mixture radionuclide workbook and --
6 so it -- there's a number of files in there.

7 **MR. GRIFFON:** And I think the bottom line, what
8 we were looking at here, was used a TIB-2
9 approach when you actually had an individual's
10 bioassay data. I think you're in agreement now
11 that the procedure would be to use the data if
12 you have it. But in fact the TIB-2 approach
13 was bounding of the dose that you would have
14 calculated if you used the individual's data.
15 Is that --

16 **MR. HINNEFELD:** Correct.

17 **MR. GRIFFON:** Yeah.

18 **MR. HINNEFELD:** Correct.

19 **MR. GRIFFON:** And SC--

20 **MR. FARVER:** And we reviewed the file and we
21 agree --

22 **MR. GRIFFON:** Okay.

23 **MR. FARVER:** -- it was a bounding approach.

24 **MR. GRIFFON:** So we have agreement with that,
25 that it -- it was a bounding approach. Okay.

1 I think that covers everything in the fourth
2 set, so we are very close. Maybe not quite
3 closed out, but close to closing out. The
4 technical call we -- case 69 seems to have, you
5 know, the most follow-up.

6 **MR. FARVER:** 79.4 --

7 **MR. GRIFFON:** I'm sorry --

8 **MR. FARVER:** -- 5 and 6, and I don't --
9 (unintelligible) --

10 **MR. GRIFFON:** Oh, 79.4, 5 and 6, you're
11 correct, I'm sorry. They all -- they all are
12 sort of similar so they're grouped together,
13 79.4, .5 and .6.

14 **MR. FARVER:** And then as I have in the matrix,
15 it was further discussions between SC&A and
16 NIOSH. Basically we wrote a finding, they gave
17 a response. We don't agree with their
18 response.

19 **MS. MUNN:** And these are all missed dose issues
20 of every conceivable type. Right?

21 **MR. GRIFFON:** Yeah.

22 **MR. FARVER:** Yes.

23 **MR. GRIFFON:** Okay, and I --

24 **MR. FARVER:** Has to do with an individual who
25 worked for a number of years at Los Alamos and

1 appears to only have -- one, two -- three
2 instances of where they wore a dosimeter, and
3 apparently no bioassay. So we -- we believe
4 that it's -- it's likely that there's -- was an
5 unmonitored dose during that period.

6 **MR. GRIFFON:** Or -- or --

7 **MR. FARVER:** Or a missed dose.

8 **MR. GRIFFON:** -- yeah, or records are missing
9 or something. Right? Yeah --

10 **MR. FARVER:** Something.

11 **MR. GRIFFON:** -- yeah, so there's a question
12 that there's -- there's only some -- some data
13 covering some of the time frame that the -- the
14 individual worked there, and there's a question
15 of whether it was just that the individual was
16 not in any areas where he could have been
17 exposed -- that's one scenario, that they
18 weren't being required to wear any do--
19 dosimetry. But the other possibility is that
20 they were -- that they -- that all the records
21 weren't recovered, or that there was
22 unmonitored situations, I guess would be the
23 third scenario. So any -- any response back,
24 Stu, or...

25 **MR. HINNEFELD:** No, but I -- I think this

1 person ultimately ended up in an SEC class.

2 **MR. GRIFFON:** Okay, so (unintelligible) --

3 **MR. HINNEFELD:** I'm looking -- I'm looking at
4 the report where it describes the case

5 specifics, and -- I mean we can still go
6 through dose reconstruction technique, that's
7 what we're doing here, you know, we're not --

8 **MR. FARVER:** But I believe you're -- I believe
9 you're correct.

10 **MR. HINNEFELD:** Yeah, but -- okay, we'll --
11 we'll add that then to the technical discussion
12 that we're scheduling. Now did -- did you --

13 **MR. FARVER:** Yeah.

14 **MR. HINNEFELD:** -- you want to participate on
15 that when we schedule this technical
16 discussion?

17 **MR. GRIFFON:** Yeah, I'll probably tie into it -
18 - yeah --

19 **MR. HINNEFELD:** Okay.

20 **MR. GRIFFON:** -- yeah.

21 **MR. FARVER:** And I guess this just comes down
22 to an issue that -- that it was the early
23 years, '40s and '50s, and are we satisfied that
24 all the records were kept and all the records
25 have been provided. And if --

1 **MR. GRIFFON:** Yeah, I guess --

2 **MR. FARVER:** -- you don't have the records,
3 what do you do.

4 **MR. GRIFFON:** I guess what we should look at
5 also is what was the -- what was -- do we have
6 a job history, do we know what this individual
7 was doing and --

8 **MR. HINNEFELD:** We've got --

9 **MR. GRIFFON:** -- is it likely that he should
10 have been monitored. Then that would make me
11 think where are these records, this -- you
12 know.

13 **MR. HINNEFELD:** Right.

14 **MR. GRIFFON:** So I think we need to have that
15 discussion on the --

16 **MR. FARVER:** We just felt it was unusual for a
17 person to be out at that time period for 15
18 years and only have three dosimeter results.

19 **MR. GRIFFON:** Okay.

20 **MR. HINNEFELD:** Well, I mean we -- we can put
21 it in the discussion on -- on the discussion of
22 the topic. I think that kind of -- does kind
23 of beg the question, you know. There is --
24 that is a legitimate question.

25 **MR. GRIFFON:** Yeah.

1 break.

2 (Whereupon, a recess was taken from 11:00 a.m.
3 to 11:18 a.m.)

4 **DR. WADE:** Okay, so I believe we are ready to
5 go back in session, Subcommittee on Dose
6 Reconstruction; Chair, Mark Griffon.

7 **FIFTH SET OF DOSE RECONSTRUCTIONS**

8 **MR. GRIFFON:** Okay, starting on the fifth set
9 matrix -- and again, I'm going to work from
10 this smaller matrix that Stu sent around, which
11 is -- at least I have -- I have a couple
12 editorial things to add in, but they weren't
13 really NIOSH response items. They were items
14 that we either asked for SC&A follow-up or
15 otherwise. I'll -- I'll mention those as we go
16 through, but this basically is -- with the
17 fifth set, if they're not on this short matrix,
18 you can -- unless I mention them otherwise, you
19 can assume they were closed out in our last
20 meeting. And by closed out, I mean, as I said,
21 either agreement or deferred to another
22 workgroup or site profile review. And actually
23 this -- this is a fairly -- fairly small subset
24 that we're left to deal with here.
25 I'll start off with case 82, which is not on

1 this list, but during the last subcommittee
2 meeting -- this is a -- a Harshaw case that we
3 reviewed, and the only thing we mention -- this
4 is where we had a discussion about for some of
5 these smaller AWE sites these -- the Board sort
6 of considered these as like mini site profile
7 reviews. And the case that we reviewed from
8 Harshaw was done prior to the site profile
9 being available. It was done using overarching
10 tools, I forget -- overestimating tools, and
11 therefore it didn't really get at the question
12 of reviewing the Harshaw site profile. And so
13 I -- I put as a Board action or -- or a
14 subcommittee follow-up action we need to either
15 reselect a Harshaw case that does use the site
16 profile or -- or possibly if -- if we choose to
17 do, we could have -- have SC&A do the site
18 profile review under that -- under that other
19 task. So that's -- that's just for case 82 a
20 little follow-up. No follow-up on the findings
21 for that particular case, but for the Harshaw
22 site in general.

23 For number -- case 84, also not on the matrix
24 yet, we had a follow-up item for SC&A to
25 review, using the current site profile. And

1 according to my notes NIOSH was still
2 completing the site profile -- this is for
3 Huntington -- and I don't know, Stu, has that
4 been released yet, or do you know?

5 **MR. HINNEFELD:** I don't believe it has.

6 **MR. GRIFFON:** Okay. So it -- at -- at this
7 point we're waiting for -- NIOSH was -- was in
8 final draft form of a profile -- a site profile
9 for this -- for the Huntington site. And once
10 that's available SC&A will -- will look back at
11 their findings in this case, in light of the
12 profile, so then it would become a mini profile
13 review.

14 That moves me on to the matrix now, 85.1 is the
15 first one, and Stu, we had asked for more
16 information for -- this is Superior Steel -- is
17 that right? Superior Steel --

18 **MR. HINNEFELD:** Right.

19 **MR. GRIFFON:** -- case.

20 **MR. HINNEFELD:** Well, this came down to --
21 there was a -- there were several statements I
22 guess in this finding. I think at one point we
23 had said that the dose from enriched uranium
24 wouldn't be any higher than depleted, and
25 that's not entirely correct. Enriched uranium

1 would have a higher dose rate, and that was
2 pointed out. It's -- for enrichments are
3 liable to be handled in any particular
4 quantity, it's -- it's a fairly nominal change.
5 I mean their Q badge are calculated here so
6 it's a fairly nominal change, but the enriched
7 is higher.

8 I guess our fundamental response, though, that
9 there were -- there were certain shapes that
10 were modeled by SC&A in terms to model a dose
11 rate off of the product that we're talking
12 about here and -- and then the dose rate, sort
13 of mid-point at this four by eight sheet -- or
14 whatever size it was -- was col-- you know,
15 collected or used as the maximum dose rate.
16 Our own view is that, you know, that's not a
17 geometry that a person would actually be able
18 to be exposed to. They'd essentially have to
19 be -- you know, 'cause -- you know, we're
20 fairly confident that a sheet like that would
21 be stored flat, as opposed to standing on end.
22 And so the exposure geometry would not be
23 square-on to the -- to the mid-- mid-point of
24 the sheet. I think the doses are modestly
25 different anyway, so we just felt like the

1 number that was used is -- is probably a
2 sufficient number to use. I think we used sort
3 of a standard shape we've used elsewhere in
4 order to arrive at a -- a maximum dose rate,
5 and this is from a uranium product, so... Plus
6 there's -- plus we used pretty liberal
7 assignment of time and proximity, as well. So
8 we felt like when you wrap all this together,
9 we felt like we had a -- a bounding estimate,
10 as it was.

11 **MR. GRIFFON:** Okay, and I think John worked the
12 AWE cases --

13 **DR. MAURO:** Right, I did --

14 **MR. GRIFFON:** -- for SC&A, so --

15 **DR. MAURO:** -- I did the Superior Steel. I did
16 get your -- and I took a look at it and a good
17 way to think about it is here's a person that
18 worked with a -- they were rolling steel and --
19 and he was exposed to these different sized
20 slabs. And -- and the assumption was made that
21 he spent practically his whole day about a foot
22 away. So -- other words, notwithstanding the
23 small differences in our models -- for example,
24 we -- we ran our -- our models made certain
25 assumptions. You ran your models, and -- and

1 we're coming in, you know, within 20 percent,
2 30 percent of each other. Not surprising, two
3 different people running their own models. So
4 the way I look at it is that yes, we do have
5 some differences -- for example, as you pointed
6 out regarding enrichment and -- and, you know,
7 correct. We -- we felt it would have been a
8 little bit higher. But it turns out -- we did
9 the numbers and the to-- it's a four percent
10 increase for -- to this amount of enrichment,
11 so it's -- it's really in the noise, so I agree
12 with that.

13 There's another issue we raise regarding --
14 which I -- I think it might be worth just
15 mentioning it, is -- I guess for ruthenium-106
16 might be in the recycled uranium. It's got a
17 rhodium daughter. What happens is you do get
18 maybe a 25 percent increase in the external
19 dose if you factor the gamma from that. Again
20 we're talking about 20, 30 percent differences.
21 When you re-- when you think about it and you
22 said well, wait a minute, we're assuming this
23 guy spends seven hours a day one foot away,
24 that sort of covers all ills. And -- and I
25 guess -- so in the end, I -- I think we're --

1 we're more or less in agreement, but there's
2 something in -- in the fine structure, the way
3 in -- the assumptions you make regarding
4 enrichment, the assumptions you make regarding
5 the recycled uranium, perhaps -- and we are
6 coming in somewhat different, enough different
7 in our -- our MCNP models versus what you're
8 doing that -- we're apparently doing something
9 a little different because there were -- we're
10 differing by almost a factor of two and in most
11 cases we're coming in lower, but in some cases
12 we're coming in higher. So in other words, I
13 think we're at a point at least here where
14 there are tech-- assumptions and techniques
15 that we're using that are somewhat different
16 than yours, but when all is said and done as it
17 applies to this case, it's all -- it's all
18 accommodated by the bounding assumption that
19 he's -- he's one foot away for seven hours a
20 day. So I think on the external dosimetry,
21 this very first issue -- I -- it -- it's almost
22 like an issue that's really a non-issue, but it
23 would be nice to work out the -- this business
24 of the -- the rhodium. It would be nice to
25 figure out how come we're getting differences

1 by about a factor of two. And when we run our
2 MCNP and you run your MCNP -- so that's where
3 we come away on this.

4 **MR. HINNEFELD:** Yeah, I guess with respect to
5 the ruthenium and rhodium in the recycled
6 material, I guess our view is that during the
7 metal production process -- you know, once --
8 once the uranium is recycled and goes -- and it
9 starts to go back through the system, during
10 the metal production process, you know, there
11 are several hot -- you know, thermally hot
12 operations that have to happen in order to get
13 it back to uranium metal, and they're
14 relatively volatile. Ruthenium would be driven
15 off in those. And so you -- you really don't
16 have much ruthenium in recycled metal, whereas
17 you might have had it in, for instance, the UO-
18 3 that came out at Purex. There may be some
19 ruthenium in there. But it wouldn't hang
20 around long enough to be in -- or -- not
21 because it would decay, but it -- in the -- in
22 the -- in the chemical processing to get back
23 to uranium, the ruthenium would go elsewhere,
24 wouldn't come through.

25 **DR. MAURO:** Okay, I --

1 **MR. HINNEFELD:** So that's -- that's why we
2 don't sink -- and -- and we think -- we haven't
3 seen data that would show ruthenium of any
4 particular nature in recycled metal --

5 **DR. MAURO:** Okay.

6 **MR. HINNEFELD:** -- whereas you do see it in
7 recycled -- like UO-3.

8 **DR. MAURO:** Okay. Yeah, we (unintelligible).

9 **MR. HINNEFELD:** But the sugges-- the suggestion
10 about a lining on the MCNP runs is probably a
11 pretty good one.

12 **DR. MAURO:** Yeah.

13 **MR. HINNEFELD:** It'd have -- you know, it'd
14 have to be -- the particular people who are
15 setting them up --

16 **DR. MAURO:** Yeah.

17 **MR. HINNEFELD:** -- have to start talking to
18 each other and figure out what's
19 (unintelligible) --

20 **DR. MAURO:** Yeah, 'cause we're about a factor
21 of two away from each other on that -- which
22 turns out in -- in a case like this -- well, I
23 know that it's -- we're coming in -- in one --
24 I think for the small piece, we came in half
25 your value. For the large piece we came in

1 higher than your value.

2 **MR. HINNEFELD:** So -- yeah. Well, on average,
3 we agree then, so...

4 **DR. MAURO:** Pardon me -- yeah, right, yeah.

5 **MR. GRIFFON:** Okay. Can -- can I ask jus--
6 just -- it sounds like agreement here, but can
7 I ask, this seven-hour assumption, is that
8 across the board for all Superior Steel
9 workers? Is this kind of an exposure matrix
10 issue? Will that always be applied or is that
11 --

12 **DR. MAURO:** (Unintelligible)

13 **MR. GRIFFON:** -- I know for this case, it --
14 it's (unintelligible) --

15 **DR. MAURO:** I -- it's -- the Superior Steel
16 matrix is one size fits all, more or less, and
17 they're assuming one foot away, seven hours a
18 day, which is pretty conservative.

19 **MR. GRIFFON:** Yeah. So we -- we have agreement
20 on that first one, and maybe an agreement to
21 get your technical folks together on the MP--

22 **DR. MAURO:** Yeah, polish the apple a little
23 bit. Yeah, I'd like to do that. Yeah.

24 **MR. GRIFFON:** Okay.

25 **DR. MAURO:** Now that was the only write-up --

1 now there -- there was some con-- there such --

2 **MR. GRIFFON:** Well, 85.2, does these cover all
3 these? I -- are these --

4 **MR. HINNEFELD:** Well, that was --

5 **MR. GRIFFON:** No, this is --

6 **MR. HINNEFELD:** -- no --

7 **MR. GRIFFON:** -- different, 85.2's different,
8 yeah. Do you have more on 85.1, John?

9 **DR. MAURO:** No, 85.1 -- we're done.

10 **MR. GRIFFON:** Okay.

11 **DR. MAURO:** I believe so, let's see...

12 **MR. GRIFFON:** 85.2, just let Stu -- let's do a
13 normal --

14 **MR. HINNEFELD:** 85.2 is a -- a resuspension
15 finding. There -- these have been around in a
16 number of manifestations and a few different
17 issues. We were just -- at the break John and
18 Jim and I were talking about these, and we
19 think what probably needs to happen is Jim and
20 John need to get together -- we don't think
21 we're very far apart on these. We just need to
22 sort all these things out, and so it'd be
23 another technical conversation but maybe
24 slightly different players on this one, if --
25 if we could propose that.

1 **MR. GRIFFON:** Now is -- is this a -- the
2 resuspension question, the overarching -- sor--
3 sort of a global issue question or is this
4 specific just to Superior --

5 **MR. HINNEFELD:** Well, it becomes one, I guess.
6 I mean we have -- Jim, you want to comment on
7 that?

8 **DR. NETON:** Yeah. It -- it's kind of wrapped
9 up in that, although the inge-- the overarching
10 issue is related specifically to ingestion.
11 But when you get into the resuspension
12 fractions, and SC&A's had some heartburn with
13 this one times ten to the minus six for quite
14 some time now --

15 **MR. GRIFFON:** Yeah.

16 **DR. NETON:** -- and we have an approach that's
17 been sort of propagated through our various AWE
18 sites that use that, so I just need to talk to
19 John a little bit more because it -- it's
20 occurred at four or five different locations
21 under different sort of manifestations that
22 aren't exactly the same. And you know, we --
23 we had come to some very firm agreement with
24 Bethlehem Steel on how we're going to approach
25 it and we felt pretty comfortable with that,

1 and the idea was that we would take that
2 approach, that successful discussion that we
3 had, and start applying it at other sites. But
4 there are some nuances that we need to take
5 care of and -- and that's where I think John
6 and I need to talk about where we left that and
7 -- and where we might want to go.

8 **MR. GRIFFON:** All right.

9 **DR. NETON:** I apologize for the delay on this,
10 but this is one of these sort of soft issues --

11 **MR. GRIFFON:** That's okay, so maybe we should -
12 - we can have a technical call --

13 **DR. NETON:** Yeah.

14 **MR. GRIFFON:** -- maybe different people, like
15 Stu said --

16 **DR. NETON:** I'll commit to working on this --

17 **MR. GRIFFON:** -- for this particular site --

18 **DR. NETON:** -- with SC&A.

19 **MR. GRIFFON:** -- and also keeping in mind we
20 want a global approach that's consistent, too.
21 Right?

22 **DR. NETON:** Exactly, and how that folds in with
23 this overarching issue with ingestion as well.

24 **MR. GRIFFON:** Okay.

25 **MR. HINNEFELD:** I believe 85.3 is also a

1 resuspension issue and this would relate then
2 to the residual contamination period, or the
3 post-operational per-- period.

4 **MR. GRIFFON:** So the same thing on 85.3 --
5 85.5?

6 **MR. HINNEFELD:** Yeah, there's a question of the
7 technical basis for the transuranic content in
8 the recycled uranium, if it was there, and so
9 in this instance we are developing a T-- OTIB
10 that describes that -- you know, the technical
11 backup and technical basis for transuranics.
12 And so I think that OTIB would have -- would be
13 -- speak to this when it's available. So in
14 other words, we don't --

15 **MR. GRIFFON:** How -- how close is this? I --
16 the only concern I have on this is I'd like to
17 close out this -- you know, these two sets if
18 we can and...

19 **MR. HINNEFELD:** It's -- it's drafted and it's
20 being reviewed by our contractor. They've not
21 given it to us yet for our review. Our review
22 maybe is a two-week to four-week process,
23 depending upon if we comment particularly
24 extensively or not.

25 **MR. GRIFFON:** Okay. So we're -- we're --

1 basically we're waiting for a NIOSH TIB here.

2 **MR. HINNEFELD:** Right.

3 **MR. GRIFFON:** Can you give a -- give us any
4 insight on -- on the TIB? I mean is there --

5 **MR. HINNEFELD:** I don't know. I don't know any
6 --

7 **MR. GRIFFON:** You -- okay, you just don't know.

8 **MR. HINNEFELD:** It's docu--

9 **MR. GRIFFON:** If you're not prepared to do it
10 yet, that's fine. I just -- I'm curious
11 whether there's enough information about the
12 materials that were distributed to various
13 sites that you can pinpoint, or is it sort of
14 an overarching average approach or...

15 **MR. HINNEFELD:** Well, my -- I don't -- I don't
16 know how it'll be organized or how it will be
17 organized in terms -- it may be a -- some sort
18 of temporal or, you know, time-related
19 solution. My understanding of the state of
20 knowledge of contents of recycled uranium is
21 that it's -- it's pretty good, having in large
22 part been reconstructed. There seems to be
23 quite a lot of knowledge and there was a lot of
24 analysis done, certainly at -- by -- it was
25 done a lot in the '80s, certainly. And then it

1 was redone again closer to 2000, if I'm not
2 mistaken. So I don't know that there's an
3 issue of lack of information. I think the --
4 the issue might be consistency in making sense
5 of -- of everything that's out there and coming
6 up with a consistent and manageable set of data
7 to use. You know, you can't use -- you don't
8 want to give a -- have thousands of options.
9 You want to have just a few options that would
10 address it appropriately. So I suspect the
11 issue hits to that. But my understanding is
12 there is quite a lot of information that has
13 been published about the materials, how -- you
14 know, the materials that were shipped around
15 the country, what sites, what happened at those
16 sites that would affect those with tha-- you
17 know, the relative ratios to uranium. And so I
18 think there's quite a lot of information about
19 that.

20 **MR. GRIFFON:** Okay. I didn't know how -- I --
21 I've certainly seen a lot of that, as far as
22 DOE-land went. I didn't know how extensively
23 it got into the AWE sites, but...

24 **MR. HINNEFELD:** Well, I -- I wi-- I do -- maybe
25 it's appropriate to comment here that this is

1 purely speculative --

2 **MR. GRIFFON:** Yeah.

3 **MR. HINNEFELD:** -- that recycled uranium was
4 sent to an AWE.

5 **MR. GRIFFON:** Right.

6 **MR. HINNEFELD:** The fact of the matter is that
7 the uranium at the time -- we're talking here
8 mid-'50s, I think. Uranium to the DOE at that
9 time was uranium, and recycled uranium was no
10 different. So there's -- there's no -- we
11 don't have any indication that they
12 specifically sent recycled uranium to this AWE.
13 We also don't have any indication that they
14 kept track of what uranium was re-- had been
15 recycled and what was not. And so since they
16 didn't keep track, there's this presumption to
17 -- you know -- you know, in the favor of the
18 claimant that we'll -- we'll consider this
19 recycled uranium, even though we don't really
20 have any -- any evidence that recycled uranium
21 was sent there.

22 **MR. GRIFFON:** Okay, so we -- yeah. So that's
23 a -- a little tease for the TIB to come, I
24 guess. Okay.

25 All right, 86.2 -- and -- and Doug, if you have

1 anything -- or John, any time you want to
2 interject on these, just get to the mike. 86.2
3 is where I'm at now.

4 **DR. MAURO:** I di-- if you'd like, I -- I have
5 you comments list.

6 **MR. HINNEFELD:** Go ahead.

7 **DR. MAURO:** Do you want to go over it?

8 **MR. HINNEFELD:** No, go ahead, John, help me
9 out.

10 **DR. MAURO:** Okay, thi-- this -- the -- we
11 discussed this (unintelligible) before. This
12 is a -- there is a Linde site profile that's
13 applied here, and there are data, and this
14 worker was involved -- post-operation, it was
15 part of the remediation program when they
16 terminated the -- the -- the radiological
17 operations, and he was a -- he was a welder and
18 dat-- there's data for that time period,
19 external exposure data, and the data's reported
20 in the site profile and they -- and -- and I
21 think we have a factual disagreement in your
22 red -- the red write-up. I believe it -- the -
23 - the numbers that were used were the median of
24 the measurements. And so my -- and so my first
25 look at the records were well, okay, it -- the

1 data -- the external measurements were taken at
2 the right time, the time when this person was
3 involved and -- where -- where he might have
4 been exposed, and there's a range of values.
5 They selected the median value with this --
6 it's -- the distribution for this worker. And
7 so I asked myself the question is that
8 reasonable for this worker, and it turns out
9 this worker's job -- I -- I belie-- he was a
10 welder, and so he probably went to a lot of
11 different places. And so my opinion, using the
12 median with the full distribution around it is
13 a reasonable approach. Except my -- my concern
14 and comment I had -- this was discussed
15 previously -- was well, but his job as a welder
16 put him in -- up close and personal
17 relationship to the piping -- now this is how I
18 -- this is why -- this is now my -- my creation
19 to say -- other words, as a welder he may have
20 had an unusual job that put him in a -- a
21 different situation than what the dataset
22 describes, so perhaps it would have been more
23 claimant favorable to use something more toward
24 the high end of the distribution.
25 And the -- and the second question I have, and

1 this -- we discussed this before, was well, as
2 a welder -- that means he sort of works closely
3 with the non-destructive testing people. At
4 the time of our last meeting the point was made
5 and cor-- perhaps correctly so, I really don't
6 have any additional information to give,
7 though, that though he's a welder and though he
8 may very well work with the people who do the
9 X-rays of -- of the welds, that -- that he may
10 have been exposed also as -- as if he were a --
11 a person who did non-destructive testing, and
12 we know that these folks very often do get some
13 additional exposure. That's why they're
14 badged.

15 But then the point was made during the working
16 group meeting that well, wait a minute, hold
17 it, this was during the decommissioning or the
18 cleanup of the facility, so it wasn't that he
19 was -- he was fixing a pipe. He was -- they
20 were getting rid of pipes, so there would not
21 have been any testing. So -- and -- and I
22 accept that, but -- I mean it's sort of like a
23 common-sense argument, so -- so where -- where
24 we stand right now is that I guess my -- my
25 only concern is what -- whether or not using

1 the me-- for -- this is from the point of view
2 of the external exposure, using the -- the
3 median for this person, given his job
4 responsibilities, is that -- is that as cl--
5 appropriately claimant favorable, and -- and I
6 think that's a judgment call. It's -- it's
7 hard -- you know, and I leave that with -- with
8 you folks.

9 **MR. GRIFFON:** Well -- and I know -- I mean at
10 least some other instances you've used the
11 higher end for certain job titles, depending on
12 -- you might use the 95th or something or --
13 but in this case you chose the median. I don't
14 think we're talking about big doses either way
15 here, but...

16 **MR. HINNEFELD:** I -- I don't think so,
17 although, you know, we do use a fairly healthy
18 geometric standard deviation.

19 **MR. GRIFFON:** Right.

20 **MR. HINNEFELD:** So --

21 **MR. GRIFFON:** Yeah.

22 **MR. HINNEFELD:** -- it's probably about a factor
23 -- maybe a factor of six different between
24 median and 95th percentile. There's -- you
25 know, there are some survey data from around

1 the decontamination period as well -- you know,
2 demolition period -- all, you know, pretty
3 modest, quite -- you know, the dose rates are
4 quite modest. This just -- you know, to me,
5 this looks like a -- a reasonable dose number
6 for a person who's engaged in, you know, the
7 remediation of the plant, so...

8 **MR. GRIFFON:** And you're also assuming eight
9 hours a day at this, or seven hours --

10 **MR. HINNEFELD:** There's a -- there's a lon--
11 extensive time period in here.

12 **MR. GRIFFON:** Right.

13 **MR. HINNEFELD:** I'm not entirely -- intimately
14 familiar with the Linde site profile, I'm
15 afraid.

16 **MR. GRIFFON:** Yeah, so I --

17 **MR. HINNEFELD:** But we gen-- as a general rule,
18 we do -- we do assign large occupancy factors -
19 - you know, large amount of time --

20 **MR. GRIFFON:** Right.

21 **MR. HINNEFELD:** -- exposure.

22 **DR. POSTON:** Can somebody explain the last
23 sentence? Seems to me this is a ridiculous
24 argument if that sentence is true.

25 **MR. GRIFFON:** Right, is the -- you mean the

1 magnitude or the -- the small --

2 **DR. POSTON:** Yeah.

3 **MR. GRIFFON:** -- doses we're dealing with --

4 **DR. POSTON:** Yeah.

5 **MR. GRIFFON:** Yeah.

6 **DR. POSTON:** It says if he's -- if the workers
7 stay there 24 hours a day for the entire year,
8 the dose would be small, and it's less than
9 what was assigned to him, so what -- what's the
10 discussion?

11 **MR. HINNEFELD:** I guess -- that's kind of --
12 you know, that was our point was that this is a
13 pretty hefty assignment in an area where doses
14 seem to be relatively modest.

15 **MR. GRIFFON:** Yeah, and that's what I was
16 saying, either number you pick is -- is pretty
17 small so it's not -- it's not that big an issue
18 for this case. Again, these are like mini site
19 profile reviews, though. That was part of the
20 point. But again, this is also a one size fits
21 all model, I assume?

22 **MR. HINNEFELD:** I don't recall exactly if it's
23 one size fits all -- no, actually it's not.
24 There are --

25 **MR. GRIFFON:** It's not --

1 **MR. HINNEFELD:** -- there are different time
2 periods.

3 **MR. GRIFFON:** Oh, okay.

4 **MR. HINNEFELD:** There's like during remediation
5 period and there's during the operational
6 period.

7 **MR. GRIFFON:** But there's an exposure matrix
8 (unintelligible) --

9 **MR. HINNEFELD:** Cleanup workers --

10 **MR. GRIFFON:** -- yeah.

11 **MR. HINNEFELD:** -- cleanups (unintelligible)
12 workers.

13 **DR. MAURO:** Yeah, as with all matrices, they
14 try to parse it as best they can, by time and -
15 - and work category, and -- it -- so -- so that
16 when I say it's a -- it's a matrix so you do
17 have to pick the right box for this -- as
18 applied to this person and -- and that
19 judgment's made now -- but the only thing is in
20 the write-up, the red -- the red part, it
21 indicates that -- that -- that the maximum
22 value -- see, I guess I'm -- I'm getting a -- a
23 -- and this is a factual question, really not a
24 judgment call now. It was my understanding,
25 when I read -- when I did my original review,

1 that the external exposure was the -- the
2 median with the full distribution. In the --
3 in the write-up here it said that the max value
4 was used, so that -- when I read this I said
5 oh, I -- I -- you know, that's not my -- my
6 understanding of what was done in this
7 particular worker's case, so I -- either way it
8 may turn out to be not important, you know.
9 But...

10 **MR. GRIFFON:** Well, yeah, we should get that
11 part right, but the effect on this case is min-
12 - so I think we all agree that it doesn't have
13 much effect on -- it doesn't have any effect on
14 this case, really. So no effect on the case,
15 but -- did you -- you -- I mean we should sort
16 that out, Stu, if --

17 **MR. HINNEFELD:** Yeah, we can -- yeah, that was
18 sort of thrown into -- that was not the basis
19 for the -- the dose reconstruction, but it was
20 -- looked over these measurements taken in the
21 plant, you know, during the cleanup. Actually
22 this -- that measurement I think was after
23 there had been some decontamination while, you
24 know, this person's employment would have
25 continued, and the dose rates were really quite

1 modest at that point. So that was just kind of
2 to show an additional indicator that this --
3 this dose reconstruction really seems -- you
4 know, we're -- we're -- we're pretty confident
5 we're bounding the dose with this dose
6 reconstruction.

7 **MR. GRIFFON:** Okay. I think we've got enough
8 to go on we can sort out the factual question.
9 89.3?

10 **MR. HINNEFELD:** Yeah, I want to check this
11 original finding here.

12 **MR. GRIFFON:** Oh, this -- didn't we come across
13 this -- Doug, (unintelligible).

14 **MR. FARVER:** I reread our original finding and
15 then the dialogue that went with that and as --
16 as I believe, I think that's an L over -- LOD
17 over two issue.

18 **MR. GRIFFON:** Yeah.

19 **MR. FARVER:** Whereas results were entered in
20 that were less than the LOD over two, and we
21 felt they should have been considered as LOD
22 over two instead of the smaller value. And I
23 believe this has been corrected in later
24 issues.

25 **MR. HINNEFELD:** Yes, and in fact...

1 **MR. GRIFFON:** And you said that newer workbook
2 treats the dosimeter results that are LOD over
3 two as non-detects, so I think you've got it...

4 **MR. HINNEFELD:** Yes, and this in fact was done
5 -- you know, it was --

6 **MR. GRIFFON:** Yeah.

7 **MR. HINNEFELD:** -- reworked with the LOD over
8 two.

9 **MR. GRIFFON:** Okay, so we have agreement there.

10 **MR. HINNEFELD:** Yeah.

11 **MR. GRIFFON:** All right, 89.5?

12 **MR. FARVER:** Our finding has to do with failure
13 to account for missed neutron doses. In NIOSH
14 resp-- there was a response. They even say
15 that since SRS did not record negative badge
16 results during this time, there is no cycle
17 data. But it'd be possible that the employee
18 had neutron monitoring with the exception of
19 '74 through '78. And they go on to calculate a
20 dose and a POC.

21 We're okay with what they wrote, their
22 response.

23 **MR. GRIFFON:** Okay. I guess -- I guess the
24 only question I had, which -- this -- is this -
25 - this is Savannah River. Correct?

1 **MR. HINNEFELD:** Yes.

2 **MR. GRIFFON:** Yeah. I guess the only thing --
3 thi-- thing that struck me in this was the
4 people that were monitored may not even show up
5 on the records, so they -- they could have been
6 monitored, but if they didn't have a detectable
7 dose, they wouldn't even be in any
8 records that we look at. This is more of a
9 site profile question. It doesn't impact this
10 case, but it's a question I have. Is that --
11 is that correct? When we're thinking about
12 Savannah River overall, are there people that -
13 - and again, they would have been the people
14 that were monitored but didn't get a detectable
15 measurement, but then we wouldn't know that
16 they were even monitored if we're reviewing
17 overall records. You follow me, Stu?

18 **MR. HINNEFELD:** Yes, there is -- there is a
19 period of time, a certain number of years, I
20 don't -- I don't know what they are, but we --
21 we, you know --

22 **MR. GRIFFON:** Okay.

23 **MR. HINNEFELD:** -- programmatically know what
24 they are, where the records we get from
25 Savannah River do not include a zero badge

1 reading. In other words, it's -- there's just
2 nothing there. You can't tell if the person
3 wore a badge and got a zero or if they didn't
4 wear a badge, so that is true. Because of
5 that, we do dose reconstructions down there --
6 we -- we know we can't rely on that record to
7 indicate whether the person was monitored for
8 neutrons or not, so you have to make other
9 determinations. And in fact there is -- I
10 think there's a whole OCAS TIB about when do
11 you thi-- when should you consider these people
12 to be monitored at Savannah River for neutrons
13 because you can't rely on the exposure record
14 to tell you that they were monitored and got a
15 zero. So there are -- there are steps that
16 have to be taken on Savannah River cases to
17 determine, since we don't have a -- we don't
18 have any zero readings for neutrons, would this
19 person likely have been monitored for neutrons.
20 And so it's based on job title and a certain,
21 you know, amount on location and -- and -- and
22 era, in -- for instance, at some point they
23 started recording all their zeroes, and so if
24 the person was in the same job and they start
25 recording zeroes in such-and-such year, chances

1 are they were monitored beforehand as well.

2 **MR. GRIFFON:** Right.

3 **MR. HINNEFELD:** Conversely, if they -- you
4 know, if they're in the same job and you go
5 through that period where we're getting all the
6 cycles and they're not getting -- there --
7 there's no zero dosim-- you know, neutron
8 dosimetry after they -- you know, the record
9 would indicate it should be there --

10 **MR. GRIFFON:** And the --

11 **MR. HINNEFELD:** -- then we would say okay,
12 well, since he was in the same job, then he
13 likely wasn't monitored before that, either.

14 **MR. GRIFFON:** Is this outlined in a TIB or in
15 the site profile (unintelligible).

16 **MR. HINNEFELD:** Well, it's in -- it's in an --
17 the -- at least a part of it is in an OCAS TIB
18 that we hope to get incorporated into an
19 upcoming revision of the site profile, which --
20 it makes it cleaner to have one location.

21 **MR. GRIFFON:** Okay. So it's still being
22 finalized? Is that --

23 **MR. HINNEFELD:** Well, the -- the Savannah River
24 site profile is kind of dynamic.

25 **MR. GRIFFON:** Yeah.

1 **MR. HINNEFELD:** You know, it's -- it's being
2 evaluated now. We know there'll be some
3 revisions coming out of that. We -- we
4 (unintelligible) --

5 **MR. GRIFFON:** So that broad-- that broader
6 question then might hold for the site profile
7 discussion, but for this case I think we're
8 okay. Right? Okay.

9 And 91.5?

10 **MR. FARVER:** We're still reviewing 91 case, so
11 we'd like some more time on 91.5 and 91.8.

12 **MR. GRIFFON:** Okay. And I'll -- I'll go back
13 to -- even though it's not in the matrix,
14 there's an 89.8. I had that in my initial
15 notes, but it was -- it was the fission product
16 question. And I think as we put before, that's
17 being deferred to the procedures review. Is
18 that -- is that --

19 **MS. MUNN:** Is it?

20 **MR. GRIFFON:** -- that's correct, I think.

21 **MR. HINNEFELD:** Yes.

22 **MR. GRIFFON:** Yeah.

23 **MR. HINNEFELD:** Yes, it was submitted to the
24 procedures --

25 **MR. GRIFFON:** Trying to get stuff off my disk

1 or --

2 **MS. MUNN:** Stop, already.

3 **MR. GRIFFON:** All right, so we'll -- if it's
4 okay -- yeah, some of this -- SC&A has not had
5 time to review all these, so we'll go past 91.5
6 and 91.8 for now.

7 92.1?

8 **MR. FARVER:** 92.1 appears to be like before.
9 It's the less than LOD over two issue I believe
10 we've been tak-- we took care of.

11 **MR. GRIFFON:** Okay. So we're in agreement?
12 Then I have 92.5 as the same fission product
13 question, which'll be deferred to the
14 procedures group.

15 93.1, I had a note on 93.1, Stu, that SC&A --
16 or no, NIOSH would show that the IMBA analysis
17 used was bounding. That's the only one I
18 didn't -- that's the only discrepancy I have
19 with your list and my notes.

20 **MR. HINNEFELD:** 93.1?

21 **MR. GRIFFON:** Yeah, 93.1, so -- I'm looking
22 back --

23 **MR. HINNEFELD:** The -- the main findings table
24 has 93.1 as failed to account for all photon --
25 all missed photon dose.

1 **MR. GRIFFON:** Okay.

2 **MR. HINNEFELD:** And it seems to be an LOD over
3 two issue again. That's back on the -- that's
4 on the findings matrix, the bigger -- wider
5 matrix.

6 **MR. GRIFFON:** Yeah, so it doesn't make sense,
7 my note about IMBA.

8 **MS. MUNN:** No, it's like (unintelligible).

9 **MR. GRIFFON:** All right, we'll -- we'll forget
10 that one.

11 93.2?

12 **MR. HINNEFELD:** Yeah, this finding we believe
13 relates to screening versus --

14 **MR. GRIFFON:** Yeah.

15 **MR. HINNEFELD:** -- dispensary type or medically
16 indicated X-rays, and our policy has been that
17 an X-ray that's taken as a screening -- part of
18 a required screening in order to remain
19 healthy, those we include. But for medical
20 indication of an X-ray, an X-ray's taken
21 because of a medical indication, those are not.
22 So that's sort -- essentially a policy decision
23 that was made -- I guess before I started.

24 **MR. FARVER:** And just to add to that, this is
25 kind of a special case. It looks like this

1 individual had many, many X-rays during his
2 employment period -- chest X-rays, skull, knee,
3 hand, fingers, back -- all over. And I've been
4 reviewing the records. He looks like he was
5 involved in a fall of some sort with rib
6 injuries and a lot of these are follow-up to --
7 to -- measurements like that. I agree with
8 what they did and what they wrote. The concern
9 I have, especially if I'm an employee, is would
10 you please put something in my dose report that
11 says you looked at these but you're not
12 considering those, or just mention that I had
13 these. Because having dealt with many
14 employees, they will remember that they had
15 these falls, these -- these X-rays.

16 **MR. HINNEFELD:** Well, certainly we'd -- that's
17 a worthwhile -- I think that might be a
18 worthwhile suggestion because we do -- we have
19 always struggled to make an understandable --
20 you know, meaningful dose reconstruction
21 report.

22 **MR. FARVER:** And you have to look at this at a
23 -- on a case by case basis 'cause most people
24 aren't going to have these -- this many X-rays.

25 **MR. GRIFFON:** Okay, so we have agreement on

1 that.

2 Okay, 96.2, skin doses.

3 **MR. HINNEFELD:** If -- if I'm not mistaken, the
4 origin of this finding is that IG-1 has a
5 footnote that says for shallow dose just -- you
6 know, if they're reporting shallow dose, just
7 use the -- the shallow dose for skin dose.

8 **MR. GRIFFON:** Yeah.

9 **MR. HINNEFELD:** And the -- the problem we have
10 with actually doing that in practice is that
11 the dose con-- or the radiation effectiveness
12 factor is different for beta particles than it
13 is for 30 to 250 keV photon. So if you're --
14 if you're really trying to -- to get it -- you
15 know, the exact -- if you're really trying to
16 get it right, or even if you're trying to do an
17 underestimate/overestimate, a good technique is
18 to choose the radiation -- you know, the
19 radiation type such that you're either
20 overestimating or underestimating the dose. So
21 that's why we don't strictly use the reported
22 shallow dose, the skin dose, even though that
23 note is in IG-1. So our action was well,
24 (unintelligible) like you want, take that
25 footnote out because it is misleading. So

1 that's what we propose to do.

2 **MR. FARVER:** I agree, that's fine.

3 **MR. GRIFFON:** Okay. Anything else on the fifth
4 set? We've got about four minutes here. I
5 know people want to have a chance for lunch
6 before the main meeting.

7 **BLIND REVIEWS**

8 So if there's nothing else on the fifth set, I
9 wanted to mention the blind reviews just
10 quickly. If I can ask -- what I'd like --
11 propose to do, anyway, is that the subcommittee
12 members and alternates look at the spreadsheet
13 that [Name Redacted] -- Stu sent around.

14 **MR. HINNEFELD:** [Name Redacted] is my wife.

15 **MR. GRIFFON:** And there's a spreadsheet that --
16 how do I identify -- does everyone have that
17 spreadsheet with the cases on?

18 **MS. MUNN:** Yes.

19 **MR. GRIFFON:** The blind review potential cases?

20 **MS. MUNN:** Yes.

21 **DR. WADE:** You can hold it up.

22 **MR. GRIFFON:** Anyway, I -- I'd ask that you
23 look through that -- each member individually
24 look through that and highlight two or three
25 cases that they think would be good blind

1 review candidates. And if you can provide
2 those to me, I will talk with Stu then outside
3 of the meeting. This is one that we don't want
4 to discuss publicly 'cause the matrix has a lot
5 of identifiable information, and if we're going
6 to really keep these cases blind to the
7 contractor then we should not submit this
8 matrix to the public record. So that's what I
9 propose is that each subcommittee member select
10 two or three. We'll look for the overlap in
11 those and -- and get a few of those cases and
12 let's see if this passes the legal test.

13 **MS. HOMOKI-TITUS:** I'm very concerned about the
14 subcommittee doing its work in secret without
15 having an appropriately closed meeting, so we -
16 - maybe Lew and I need to discuss this at lunch
17 to decide how best to handle this.

18 **MR. GRIFFON:** Okay, okay. Yeah, we -- we don't
19 want to do our work in secret, for sure. The -
20 - what we're trying to figure out is the best
21 way to keep these cases blind to the
22 contractor. So -- all right, we can -- I still
23 think you should look through the matrix and
24 see what you think is appropriate cases and we
25 can --

1 **DR. WADE:** Mark is proposing, and we won't rule

2 --

3 **MR. GRIFFON:** Yeah.

4 **DR. WADE:** -- on this right now --

5 **MR. GRIFFON:** Right.

6 **DR. WADE:** -- that individual members look at
7 the list and make comments as individuals to
8 him, and then he as chair would make a
9 decision. We'll get back to you after lunch as
10 to the efficacy of that approach, but that's
11 what Mark is proposing.

12 **MS. MUNN:** If this is acceptable, when is our
13 homework assignment due?

14 **MR. GRIFFON:** Aft-- right at -- no, I don't --
15 as long as we do it before the conclusion of
16 this meeting, I think -- by -- by Friday, you
17 know, so...

18 **MS. MUNN:** All right.

19 **DR. WADE:** But no discussion or deliberation
20 with Mark.

21 **MR. GRIFFON:** No.

22 **DR. WADE:** If you give him a piece of paper
23 with some names on it, that's the proposal.
24 We'll let you know --

25 **MR. GRIFFON:** Right.

1 **DR. WADE:** -- if that's acceptable.

2 **SIXTH SET OF CASES**

3 **MR. GRIFFON:** And the only other note I'd make
4 is that we did, at our last meeting, discuss
5 the sixth set of cases, and I think the status
6 on those -- Stu, make sure I get this right --
7 is that you -- you provided -- NIOSH provided
8 responses. We did our first cut through in
9 that meeting as far as discussing the NIOSH
10 responses, and SC&A has not evaluated all those
11 yet. So we -- we will be bringing that back to
12 the subcommittee process as well, so -- is that
13 -- I think that's where we stand.

14 **MR. HINNEFELD:** I -- I believe that's where we
15 are. I've -- I've -- I've sent a -- a sixth
16 set matrix with at least some initial
17 responses. I won't guarantee that there's an
18 initial --

19 **MR. GRIFFON:** It may not have all the ones for
20 --

21 **MR. HINNEFELD:** -- response on every one, but -
22 -

23 **MR. GRIFFON:** -- correct, yeah.

24 **MR. HINNEFELD:** So there may be -- you know --
25 you know, candidly, I've really focused on

1 fourth and fifth for this and so --

2 **MR. GRIFFON:** Right.

3 **MR. HINNEFELD:** -- I'm a little at sea on where
4 we are on the sixth.

5 **MR. GRIFFON:** And the -- as far as my -- my
6 hope for the path forward with the subcommittee
7 is that we have a meeting before the December
8 6th meeting. Maybe we can time it for some of
9 the other work that's going to be going on, but
10 have a meeting to close out the fourth and
11 fifth, is my desire. And if we have time, we
12 can work -- you know, move on to the sixth set
13 a little bit, but I would like to at least
14 close out the fourth and fifth set and be able
15 to report to the full Board meeting phone call
16 with a final version of those two matrices on
17 December 6th.

18 **DR. WADE:** For -- for your consideration, Mark,
19 on -- on October 24th and October 25th there
20 are workgroup meetings in Cincinnati, so those
21 are the only face to face meeting for certain
22 schedule between now and the 6th. There are
23 calls on various workgroups, but the 24th and
24 25th there are face to face meetings scheduled
25 in Cincinnati. You might consider, you know,

1 before or after those meetings.

2 **MR. GRIFFON:** Well, I -- yeah, we'll -- we'll
3 have to work with a date -- I think we need a
4 technical phone call --

5 **MR. HINNEFELD:** Yeah.

6 **MR. GRIFFON:** -- for a couple of these issues.
7 We talked about technical phone calls prior to
8 that, so I'm not sure we're going to be ready
9 for around that time frame, but we'll -- we'll
10 -- we'll get a date --

11 **DR. WADE:** Well, you could also put a -- a
12 stake in the sand and decide you want to have a
13 face to face meeting in November --

14 **MR. GRIFFON:** November, right --

15 **DR. WADE:** -- and I'd bet others will cluster
16 around you then.

17 **MR. GRIFFON:** Right, right. Yeah, okay, we'll
18 -- we'll work on the date and I'll e-mail
19 others when we get some -- when I get some
20 sense of how clo-- you know, how long it's
21 going to take, so...

22 All right. Is there anything else for the
23 subcommittee before we close?

24 (No responses)

25 All right. I guess we're adjourning.

1
2
3
4
5

DR. WADE: Thank you all.

MR. GRIFFON: Thanks.

(Whereupon, the meeting was concluded at 12:00
p.m.)

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CERTIFICATE OF COURT REPORTER**STATE OF GEORGIA****COUNTY OF FULTON**

I, Steven Ray Green, Certified Merit Court Reporter, do hereby certify that I reported the above and foregoing on the day of October 3, 2007; and it is a true and accurate transcript of the testimony captioned herein.

I further certify that I am neither kin nor counsel to any of the parties herein, nor have any interest in the cause named herein.

WITNESS my hand and official seal this the 15th day of November, 2007.

STEVEN RAY GREEN, CCR**CERTIFIED MERIT COURT REPORTER****CERTIFICATE NUMBER: A-2102**

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