

THE U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
PUBLIC HEALTH SERVICE
CENTERS FOR DISEASE CONTROL AND PREVENTION
NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH

convenes the

SUBCOMMITTEE FOR DOSE RECONSTRUCTION REVIEW
MEETING 2

ADVISORY BOARD ON
RADIATION AND WORKER HEALTH

The verbatim transcript of the Subcommittee Meeting of the Advisory Board on Radiation and Worker Health held in Mason, Ohio on February 7, 2007.

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February 7, 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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-- "*" denotes a spelling based on phonetics, without reference available.

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

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(By Group, in Alphabetical Order)

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MEMBERSHIP

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2
3

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GIBSON, Michael H.

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MAURO, JOHN, SC&A
ZIEMER, PAUL, ABRWH

P R O C E E D I N G S

(10:00 a.m.)

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22WELCOME AND OPENING COMMENTSDR. LEWIS WADE, DFO

DR. WADE: I think we're ready to begin. Ray, are you ready? Okay.

Well, welcome to a meeting of the Subcommittee on Dose Reconstruction of the Advisory Board. With apologies, my name is Lew Wade and I serve as the Designated Federal Official for the Advisory Board. I apologize for my -- my waning voice, but I'll do the best to be close to the microphone and speak loudly.

I would like to determine -- is Mike Gibson on the line? Mike, are you on the line?

MR. GIBSON: Yeah, Lew, I'm here.

DR. WADE: Can you hear us, Mike?

MR. GIBSON: Yeah, I can hear you fine.

DR. WADE: Okay, fine. Is Dr. Poston on the line?

(No response)

Okay. This is a subcommittee chaired by Mark Griffon. Its members are Gibson, Poston, Munn. There are two alternates. First alternate is

1 Clawson, second alternate is Presley. As Dr.
2 Poston is not with us, I would ask Brad Clawson
3 to participate as a member of the subcommittee.
4 Mark?

5 WELCOME AND OPENING REMARKS

6 **MR. GRIFFON:** I apologize for my late arrival.
7 I got canceled last night so I got in as soon
8 as I could. We're continuing with the -- the
9 case review process here, and I think I -- I
10 made a mini agenda to go through for this
11 meeting, which was not posted but I -- I just
12 did it on the plane, but the items include the
13 seventh set of cases, we want to try to select
14 the seventh set of cases and I think we've got
15 more information not that NIOSH has provided to
16 us. We've got a handout which I believe is
17 also in -- in the back. It might be slightly -
18 - it -- it is de-identified for the public
19 copies. This handout includes the extra --
20 additional information that we requested on the
21 cases, so we -- so we went through kind of a
22 two-step process this time in our selection, as
23 everybody recalls. We -- we -- we pre-screened
24 some cases and then we said give us some more
25 information so that we're not -- we're not

1 ending up reviewing cases that aren't really of
2 interest to -- to the Board. And we wanted to
3 -- the additional information included the date
4 the DR was approved, and this was important
5 because a -- a lot of the cases that were done
6 in -- using early versions of procedures, we
7 didn't want to re-re-look at those issues
8 again. We -- they've come up again and again
9 in our process, so we wanted to look at the
10 date of approval and get the more recently
11 approved dose reconstructions, if possible.
12 We also wanted to get information on the
13 methods for external and internal dose
14 reconstruction. Sometimes the simple ex--
15 explanation of overestimate or -- or full
16 internal/external is -- is not telling the full
17 story of -- of what was done for the dose
18 reconstruction, so we wanted more -- a more
19 descriptive field there of what -- how the DR
20 was conducted for that individual case.
21 We also wanted information on work area. We
22 weren't sure how productive this was going to
23 be, but the idea was -- especially for some of
24 the bigger sites, Savannah River, Hanford -- we
25 wanted to make sure we were getting a

1 distribution of not only -- some of the
2 criteria we were looking at is types of cancer,
3 things like that, but we also wanted a
4 distribution amongst the work areas, if
5 possible, so we wanted to see that -- that
6 field in our pre-selection criteria.
7 And of particular interest in the neutron dose
8 reconstruction aspect, pre- and post-1973; and
9 then job information, job title information.
10 I will say, you -- you know, to some extent
11 this information was and was not useful,
12 depending on the case. Sometimes there was a
13 number of jobs listed. Sometimes work areas
14 was, you know, various, things like that were
15 in the field. But I think overall it was
16 helpful. I really appreciated the information
17 on the DR methodology particularly. That was
18 helpful to me in looking at these cases.
19 So in -- in front of us we have this -- this
20 matrix. It includes the -- and I don't have a
21 count on this, but the cases that were selected
22 at our -- at one of our Board meetings. And
23 then if you go to like page 5 in this matrix,
24 at the very bottom it says the second pre-
25 selected set. And if you recall in our January

1 11th phone meeting, I -- I had mentioned that I
2 went through, after talking with -- with Lew
3 and Stu Hinnefeld, I went through the remaining
4 cases that we hadn't selected and -- and gave
5 Stu and NIOSH some more cases to give us more
6 information on. This was basically because Stu
7 had -- had looked at the ones we provided to
8 him and said there were a lot of instances
9 where you have -- for instance, you look at the
10 first ones on page 1, there's a lot of -- maybe
11 it's not all on page 1, but -- yeah, it does
12 fall on page 1, there's a lot of TIB-2s again
13 and again and -- and a lot of these -- these
14 TIBs that we've been over and over again on the
15 -- on the workgroup and now on the
16 subcommittee. So we thought we might be going
17 over ground that we've already covered, so he
18 added on additional cases for us to select
19 from. So -- so out of these, my goal -- I -- I
20 sort of went through on my electronic version
21 and I think our goal as a subcommittee now is
22 to come up with a -- a list of -- I would say
23 at least 20. I know that SC&A has mentioned
24 that they would like to possibly get 30 out of
25 this batch to keep sort of on -- on process on

1 -- on -- as far as production goals go for --
2 for annual cases completed. In looking through
3 these myself I think I came up with 20 that
4 look very good, and -- and I had some that were
5 -- that were -- that I thought needed possible
6 discussion here on the subcommittee. So I
7 think we sh-- that's our number one thing that
8 -- that I want to go through here, and we'll do
9 that in a second.

10 Other things on the agenda just -- just that we
11 can complete, and I think we can wrap this up
12 in an hour, but I want to update on the fourth
13 set matrix, and I have a -- a brief report on
14 that, as well -- just to -- to catch people up.
15 I mean I know it's been a while since we've
16 looked at this, but the fourth set of cases, we
17 had a matrix which NIOSH provided responses to
18 the matrix. We had a meeting where the
19 workgroup -- or now the subcommittee, along
20 with SC&A and NIOSH, went through item by item
21 and I've now added a resolution column and --
22 but I will say there's several items that are
23 outstanding. I know that NIOSH indicated in
24 several instances that they were going to
25 rework certain cases or redo certain

1 calculations and provide them back to the
2 subcommittee. So what I want to do on that is
3 just to -- to give an updated matrix to SC&A
4 and NIOSH and -- and get back on -- on track
5 with that and bring it back to the next
6 subcommittee meeting and -- and com-- you know,
7 work on comple-- work towards completion. The
8 fifth and sixth set of cases are also out
9 there, and I just want to do an update on that.
10 And the last -- last thing I wanted to discuss
11 was -- and this might be something for the
12 eighth set of cases that we cover, but it's
13 been mentioned in previous meetings that we, in
14 our original scope, talked about blind reviews
15 but we have not yet done any. So I think we
16 might want to, if -- if we have time today,
17 talk amongst ourselves about the process by wh-
18 - you know, if -- if we're going to do blind
19 reviews, and then how are we going to go about
20 it, you know, in terms of how do we select the
21 case, how do we de-identify it so that SC&A has
22 a truly blind case in front of them and -- and
23 so forth, so...
24 So that's sort of a sketch of an agenda. And
25 like I said, the meat of it is the selecting of

1 the seventh set of cases.

2 Anybody have anything to add to that that I --
3 Wanda?

4 **MS. MUNN:** No, not an addition, I just did a
5 quick count to know what we had from our random
6 selections here. And by my count we have 32 in
7 the first set and 29 in that second set, from
8 which we ought to be able to get 30 okay.

9 And then one last question. Do we -- do -- do
10 we have the copy of your -- you said that you
11 had done some review response on -- on the --
12 on the case four set?

13 **MR. GRIFFON:** No, I don't --

14 **MS. MUNN:** I don't have that.

15 **MR. GRIFFON:** Right, and --

16 **MS. MUNN:** So there's no point in my searching
17 --

18 **MR. GRIFFON:** No, I just --

19 **MS. MUNN:** -- my database for it? Okay.

20 **MR. GRIFFON:** -- I was just in -- working on
21 that yesterday, so --

22 **MS. MUNN:** Oh, okay. Thank you.

23 **MR. GRIFFON:** But I want to get -- yeah, I'll
24 get that back around, people.

25 **MS. MUNN:** Thanks.

1 **SELECT 7TH ROUND OF DOSE RECONSTRUCTIONS TO BE**
2 **REVIEWED**

3 **MR. GRIFFON:** Okay. So looking at the fourth
4 set, the -- just pulling it up on my computer.
5 I actually...

6 **MS. MUNN:** That was a long time ago.

7 **MR. GRIFFON:** I -- I was going to say, I -- I --
8 - it -- I'm not sure how we want to proceed,
9 but my inclination would be to start on page 5,
10 because I found several in a row that -- on
11 page 5, if you look at the methodology, we're
12 at best estimate cases, but I -- I guess we can
13 start right from page 1. It might be easier.
14 Did other members of the subcommittee have a
15 opportunity to go through this matrix or -- I
16 know it was provided electronically earlier on.

17 **MS. MUNN:** My review's been very incomplete,
18 but I'd be interested in knowing what your --
19 your --

20 **MR. GRIFFON:** Okay.

21 **MS. MUNN:** -- choices were out of that second
22 pre-selected set.

23 **MR. GRIFFON:** Okay, I can go --

24 **MS. MUNN:** And why.

25 **MR. GRIFFON:** And why? I have to give why,

1 too?

2 **MS. MUNN:** Yeah.

3 **MR. GRIFFON:** All right. Yeah, I can go
4 through mine. Let's see, if we start on page 1
5 then --

6 **MS. MUNN:** Oh, I thought you were going to page
7 5. Page 1.

8 **MR. GRIFFON:** Well, I'll just do -- I'll start
9 with page 1 and give you mine and then we can
10 go back -- I have 79, then I go down to 63,
11 which I think is on page 2.

12 **MS. MUNN:** Yes, it is.

13 **MR. GRIFFON:** I'm trying to work from the hard
14 copy, as well, here. Okay. Then 55 -- 455,
15 I'm sorry, right below that, 455. Then 335,
16 next one after that. Then 337, then 322, which
17 is at the bottom of page 3. Then 375, halfway
18 down page 4; 17, at the top of page 5 --

19 **MS. MUNN:** I have pages --

20 **MR. GRIFFON:** -- 306, then we're into the next
21 -- second selections, and I have 428, 377, 379,
22 470 and 370, the -- the whole first five of
23 those.

24 **MS. MUNN:** Whole batch.

25 **MR. GRIFFON:** And 352, which is on the next

1 page; 340, 360, 58, 421, and the last one,
2 which is 001, I think -- what if -- yes, 001.
3 So that -- that gives me, if I did this
4 correctly, I counted 20 before. I'm not sure I
5 did --

6 **DR. WADE:** I think 19.

7 **MR. GRIFFON:** You counted 19?

8 **DR. WADE:** Yeah.

9 **MR. GRIFFON:** All right. But now I -- I should
10 say, that was -- I have my computer here color-
11 coded. That was my yellow ones, which means
12 that I was pretty convinced that we should do
13 them. Then I have another category of pinks,
14 which were maybes, and I probably have another
15 15 or so in the maybe column, which I certainly
16 think we -- you know, we should go through.
17 But maybe we can start with these if you have
18 any discussion on these, whether we should or
19 should not include these.

20 **MS. MUNN:** Yeah, it looks like a good spread of
21 sites. On 322, Kansas City Plant was what --
22 who, what, which site?

23 **MR. GRIFFON:** 322, which page is that one?

24 **MS. MUNN:** Page 3.

25 **DR. WADE:** Three, bottom of page 3.

1 **MR. GRIFFON:** 322 -- it -- it -- I -- I don't
2 know much about the Kansas City Plant.

3 **DR. WADE:** Stu?

4 **MR. GRIFFON:** Maybe Stu can speak to this
5 better, but --

6 **MS. MUNN:** Stu will help.

7 **MR. GRIFFON:** -- I knew we hadn't covered this
8 at all, Kansas City Plant --

9 **MS. MUNN:** Yeah.

10 **MR. GRIFFON:** -- so...

11 **MR. HINNEFELD:** From my memory -- am I on?
12 From my memory, the Kansas City Plant did
13 largely instrumentation -- assembly type of
14 things, some modest amount of radioactive
15 material there.

16 **MR. GRIFFON:** Yeah, it was limited radio--
17 radioactive --

18 **MR. HINNEFELD:** It was largely a --

19 **MR. GRIFFON:** -- right.

20 **MR. HINNEFELD:** Most of their products were --
21 did not involve radioactive material. There
22 was some limited radioactive material there.

23 **MS. MUNN:** Is that -- is that -- was that its
24 name, just Kansas City Plant?

25 **MR. HINNEFELD:** Yeah, it's called the Kansas

1 City Plant. It's --

2 **MS. MUNN:** Who ran it?

3 **DR. WADE:** There were 20, Mark -- 20.

4 **MR. HINNEFELD:** I can find out. I can find
5 out. I don't -- I don't recall right off-hand
6 who ran it. I used to know --

7 **MS. MUNN:** A short-term AWE?

8 **MR. HINNEFELD:** Bendix.

9 **MS. MUNN:** Huh?

10 **MR. HINNEFELD:** Bendix ran it.

11 **MR. GRIFFON:** My sense was that it wasn't
12 really considered much of a radiological
13 operation, but I know we haven't looked at it -
14 -

15 **MR. HINNEFELD:** Right.

16 **MR. GRIFFON:** -- in any other venue, so --

17 **MR. HINNEFELD:** Right.

18 **MR. GRIFFON:** -- I thought we might want to at
19 least do one case from that --

20 **MR. HINNEFELD:** Correct.

21 **MR. GRIFFON:** -- facility, you know.

22 **MR. HINNEFELD:** Correct.

23 **MS. MUNN:** Yeah, I noticed we had two on the
24 list, and I --

25 **MR. GRIFFON:** I did have two?

1 **MS. MUNN:** No, you didn't, but there were two
2 on -- on this list here.

3 **MR. HINNEFELD:** They made mainly non-
4 radiological items.

5 **MR. GRIFFON:** Right.

6 **MR. HINNEFELD:** Components and -- but there was
7 some -- some limited amount of radiological
8 work done there. I believe the company that
9 ran it was named Bendix.

10 **MR. GRIFFON:** The other thing --

11 **MS. MUNN:** Oh, okay.

12 **MR. GRIFFON:** -- that caught my eye was -- was
13 none for internal, so obviously there's the
14 assumption that there was no internal exposure
15 at all.

16 **MS. MUNN:** Yeah.

17 **MR. GRIFFON:** So it -- you know --

18 **MS. MUNN:** That's --

19 **MR. GRIFFON:** -- I just thought it would be
20 worth looking at one of those -- one case from
21 that plant, probably not --

22 **DR. WADE:** But for the --

23 **MR. GRIFFON:** -- probably not more.

24 **DR. WADE:** For the record, Mark's first list
25 was 20.

1 **MS. MUNN:** Yeah. Good.

2 **MR. GRIFFON:** I can count.

3 **DR. WADE:** I can't.

4 **MR. GRIFFON:** It's hard counting those things
5 on a commuter plane with the --

6 **MS. MUNN:** Yes, it is.

7 **MR. GRIFFON:** Anyway -- and the other -- my
8 other criteria, generally, Wanda -- I don't
9 know if you have other specific questions, but
10 there were instances where -- for instance, the
11 -- on page -- I'm having trouble cross-walking
12 these, but number 55 and -- and 35, they were
13 Savannah River and Mound, and -- and part of my
14 interest there was -- was at least for the
15 Mound plant I saw something in the work areas
16 that was -- it seemed like the individual was
17 ov-- over quite a bit of -- number of areas, so
18 I wanted to -- even though it was an
19 overestimating approach, I wanted to see how
20 the overestimating approach compared to a
21 potential for all those work areas where he
22 would -- you know, whether it was truly
23 bounding that kind of thing. So I looked at --
24 ver-- I -- I skipped a lot of the TIB-2 cases,
25 especially if they were -- at the very top I

1 think we had a lot of TIB-2s that were --

2 **MS. MUNN:** Yeah, I think we did.

3 **MR. GRIFFON:** -- that were used, and this is
4 what -- I just used a hypothetical set of --

5 **MS. MUNN:** Uh-huh.

6 **MR. GRIFFON:** -- for the intake, so --

7 **MS. MUNN:** Uh-huh, yeah.

8 **MR. GRIFFON:** -- you know, if I saw that, I --
9 I generally skipped a lot of those.

10 **MS. MUNN:** Just went over them, yeah.

11 **MR. GRIFFON:** Yeah. And then sometimes, for
12 ones that aren't -- aren't obvious why I picked
13 them, sometimes it was a matter of picking the
14 site, because I didn't think we had a lot of
15 cases from that site.

16 **MS. MUNN:** Yeah, it looks like there's a good
17 site spread.

18 **MR. GRIFFON:** Yeah.

19 **MS. MUNN:** And I guess just no deeper into it
20 than I went, the job titles looked like they
21 were a good spread, too.

22 **MR. GRIFFON:** Now the other -- the -- you know,
23 there are definitely -- if -- if you want to go
24 through other potential ones, 'cause I think we
25 can probably get the list a little higher, I'm

1 not -- I don't want to focus on the number 30.
2 If -- if we don't have enough good cases, maybe
3 we can get to 26 or 8 or whatever, and then get
4 the balance the next time. But there -- there
5 were a number of cases that I was, you know,
6 looking at -- you know, they were potentials,
7 but not -- I wasn't convinced that we should or
8 should not do them. I'll read down those.
9 On the first page, number 28 I had as a
10 potential.

11 **DR. WADE:** On the first page?

12 **MR. GRIFFON:** Oh, I'm sorry. It's not on the
13 first page, it's --

14 **MS. MUNN:** I have --

15 **MR. GRIFFON:** -- top of page 3, sorry. I'm
16 going from the screen without page numbers
17 here.

18 **MS. MUNN:** I can't follow your page numbers
19 because I printed mine out at home. My page
20 numbers are different --

21 **MR. GRIFFON:** Yeah, sorry.

22 **MS. MUNN:** -- but --

23 **MR. GRIFFON:** So it's -- it's this --

24 **MS. MUNN:** -- you --

25 **MR. GRIFFON:** -- K-25/X-10.

1 **MS. MUNN:** Right.

2 **MR. GRIFFON:** Even though it's a overestimating
3 approaches, TIB-2, it was 30 years of
4 experience. It was a pipe-fitter, interesting
5 job at -- at this -- at these two plants,
6 actually. In terms of exposure potential, I
7 think the pipe-fitters at these places had a
8 fair potential for exposure, so this one was
9 interesting from that standpoint. But I think
10 what -- you know, again, we're looking at the
11 TIB-2 model used here, for the most part.

12 **MS. MUNN:** Yeah, and we have the same sort of
13 thing in one that I was a little interested in,
14 076.

15 **MR. GRIFFON:** Where is that?

16 **MS. MUNN:** Pinellas -- it's on my page 4,
17 probably close to your page 4. I guess the
18 combination of lung and esophagus looked
19 interesting, but it's also a TIB-2.

20 **MR. GRIFFON:** I'm still look-- okay, it's at
21 the bottom of --

22 **DR. WADE:** Bottom of 4.

23 **MR. GRIFFON:** -- bottom of 4.

24 **MS. MUNN:** So I have no strong feelings about
25 that, it's just one that caught my eye.

1 **MR. GRIFFON:** Yeah, I actually had that as a --
2 a potential one, too, Wanda, so -- for -- for
3 those reasons you just listed, 21 years of work
4 experience --

5 **MS. MUNN:** And maintenance.

6 **MR. GRIFFON:** It was al-- it was also Pinellas,
7 that we haven't --

8 **MS. MUNN:** Well, we have -- we so often have
9 issues with maintenance.

10 **MR. GRIFFON:** And maintenance, right, right,
11 and maintenance. So I could certainly add that
12 on our -- our potential.

13 **MS. MUNN:** I guess I'd appreciate that if you
14 would add that as a potential.

15 **MR. GRIFFON:** Let me read down some of these
16 other potential ones and we can just highlight
17 those and then go through everything and -- and
18 sort of vote up or down whether we want to
19 include them.

20 I'm trying to get back to my -- here it is.
21 Okay.

22 So I said 28, then I have 99. I -- this was
23 just from an intrigue -- this is really
24 intriguing, .2 years of work experience. Again
25 it's a hypothetical model, but if it was an

1 actual test -- I don't know the history on this
2 site, either, but if it was a test --

3 **MS. MUNN:** I don't either.

4 **MR. GRIFFON:** -- even though it was .2 years,
5 would this be bounding, this approach. That
6 was sort of my question.

7 **MS. MUNN:** That would be very interesting, I
8 think. He's shown as a drill machine operator.

9 **MR. GRIFFON:** So that's -- that's 99, yeah.

10 **MS. MUNN:** Uh-huh.

11 **MR. GRIFFON:** I'm going to circle these
12 potential ones -- 56, which is Los Alamos, 22
13 years. This was TIB-18 as opposed to TIB-2,
14 and I was trying to remember what the
15 difference was between TIB-18 and TIB-2. I --
16 I don't recall TIB-18 being discussed as much
17 in our case reviews. I -- Stu, can you help me
18 out there? Is TIB-18 very similar or...

19 **MR. HINNEFELD:** TIB-18 is based on -- it's used
20 at sites or places where there was -- it's
21 based on radiological monitoring that was
22 performed at sites, and it has to do with
23 assigning either intake at the exposure
24 standard for people who are radiological
25 workers, or some fraction of the exposure

1 standard --

2 **MR. GRIFFON:** Okay.

3 **MR. HINNEFELD:** -- for the duration of their
4 employment.

5 **MR. GRIFFON:** So I don't -- I don't think we've
6 discussed --

7 **MR. HINNEFELD:** I don't think there've --

8 **MR. GRIFFON:** -- that a lot on the --

9 **MR. HINNEFELD:** -- been many --

10 **MR. GRIFFON:** Right.

11 **MR. HINNEFELD:** I don't think many TIB-18s have
12 been reviewed.

13 **MR. GRIFFON:** Right.

14 **MR. HINNEFELD:** I don't believe they have.

15 **MR. GRIFFON:** So I think that might be a good
16 one for that reason. That's 56. Going on down
17 two cases from there, I have 302, this was just
18 a long history. Huntington Plant, I don't
19 think we've done a lot of reviews for --

20 **MS. MUNN:** I don't think so.

21 **MR. GRIFFON:** -- the Huntington Plant, you
22 know.

23 **MS. MUNN:** I don't remember it.

24 **MR. GRIFFON:** Multi-- multiple cancer, also, so
25 those were the main reasons I was looking at.

1 54 and 354, two in a row right there,
2 Bridgeport Brass and Aliquippa Forge.

3 **MS. MUNN:** Hmm.

4 **MR. GRIFFON:** And I -- I couldn't recall off-
5 hand whether we had done any Bridgeport Brass
6 Adrian facility.

7 **MR. CLAWSON:** I thought we did, the last go-
8 'round.

9 **MR. GRIFFON:** We did? Okay. So --

10 **MS. MUNN:** I think we did one, at least one.

11 **MR. GRIFFON:** That -- that's probably not as
12 intriguing then, if we've done one, because
13 it's --

14 **MS. MUNN:** Yeah.

15 **MR. GRIFFON:** -- probably a --

16 **MS. MUNN:** I'm pretty sure we have, and I know
17 we've done bone.

18 **MR. GRIFFON:** Yeah.

19 **MS. BEHLING:** Excuse me, Mark?

20 **MR. GRIFFON:** Yes.

21 **MS. BEHLING:** This is Kathy Behling. We've
22 done three Bridgeport Brass.

23 **MR. GRIFFON:** Okay. Okay, so --

24 **MS. MUNN:** Uh-huh, yeah.

25 **MR. GRIFFON:** -- I would probably take that off

1 my potential list.

2 **MS. MUNN:** Yeah.

3 **MR. GRIFFON:** 'Cause it's probably the similar
4 approach --

5 **MS. MUNN:** That's a lot for that facility.

6 **MR. GRIFFON:** Yeah. And Aliquippa Forge really
7 -- this was a -- the -- the thing that caught
8 my eye here mostly was this -- the job, not so
9 much the --

10 **MS. MUNN:** Uh-huh.

11 **MR. GRIFFON:** -- you know, the -- the site, but
12 the job as furnace operator, so I'll leave that
13 on our potential list. 13 -- if you go two
14 down from 354, there's number 13, Brookhaven.

15 **MS. MUNN:** Oh, yeah.

16 **MR. GRIFFON:** This was just because I don't
17 think we've hit Brookhaven.

18 **MS. MUNN:** I don't think we have, either, and I
19 don't think we've had a lab tech, as such.

20 **MR. GRIFFON:** No, and it was from the '50s a
21 lab tech --

22 **MS. MUNN:** Yeah.

23 **MR. GRIFFON:** -- 32 years experience, you know,
24 a fairly long work cycle. All right, then I
25 had 76, as you mentioned, Wanda.

1 **MS. MUNN:** Uh-huh.

2 **MR. GRIFFON:** And I skipped the next one
3 because I think we've done Bridgeport Brass
4 Havens Lab, too.

5 Then I'm way down to 315, this is into the --
6 the second set of selections, 315 was a
7 Savannah River case, pipe-fitter, some
8 interesting work areas. That -- that's sort of
9 what -- you know, I'm not completely convinced,
10 but it looks rather interesting.

11 **MS. MUNN:** Okay.

12 **MR. GRIFFON:** Then 342 and -- and number 60,
13 right in a row there, which are Savannah River
14 and a Paducah case. The Paducah case was
15 actually one I was mo-- more interested in the
16 work areas, but it --

17 **MS. MUNN:** Yeah.

18 **MR. GRIFFON:** -- doesn't tell you a whole lot.

19 **MS. MUNN:** No, it doesn't tell you.

20 **MR. GRIFFON:** Yeah.

21 **MS. MUNN:** Sounds like he might have been all
22 over.

23 **MR. GRIFFON:** Right, right. And I think I have
24 one more -- one or two more potential -- 174,
25 which is down a ways. This is a Y-12 case, 29

1 years experience, again the various buildings
2 and an engineer, and it was 1970s, so --

3 **MS. MUNN:** All right.

4 **MR. GRIFFON:** And you know -- and last one I
5 have is 344, which is a Hanford case. This was
6 a -- in the -- from the 1940s, started work I
7 guess. It might be a --

8 **MS. MUNN:** Yeah.

9 **MR. GRIFFON:** -- could have been out there in
10 the '40s? Yeah.

11 **MS. MUNN:** Yeah, the work --

12 **MR. GRIFFON:** 32 years --

13 **MS. MUNN:** -- descriptions are really
14 interesting.

15 **MR. GRIFFON:** Yeah, radiation monitor caught my
16 eye.

17 **MS. MUNN:** It really covers the -- a lot.

18 **MR. GRIFFON:** Yeah, so 344.

19 **MS. MUNN:** Yeah, I -- I think that would be a
20 good one.

21 **DR. WADE:** So on the pink list we have 12.

22 **MR. GRIFFON:** Twelve -- 12 in addition to --

23 **DR. WADE:** Twelve in addition to the 20.

24 **MR. GRIFFON:** So the -- the first 20 I
25 mentioned, were -- were there any objections to

1 -- to including -- or should I go through them
2 all one by one? If -- if we can agree on the
3 first 20 that I mentioned, then I'll go through
4 this last set of 12 and --

5 **DR. WADE:** Okay. Mike, any reaction to the
6 first 20?

7 **MR. GIBSON:** No, sounds good to me.

8 **DR. WADE:** Okay. Wanda?

9 **MS. MUNN:** Looked fine.

10 **DR. WADE:** Okay.

11 **MR. GRIFFON:** So you want to go through those
12 last 12 and see if we can --

13 **MS. MUNN:** Last 12 maybe.

14 **MR. GRIFFON:** Okay, let's go through them --

15 **MS. MUNN:** Do we -- we specifically want to aim
16 for 30. Right?

17 **MR. GRIFFON:** Well --

18 **MS. MUNN:** Or not?

19 **DR. WADE:** I -- no, the reality is we -- we've
20 asked for 60 a year. SC&A is suggesting that
21 it would help their work planning if we could
22 give them two groups of 30, and I think we'd
23 like to accommodate, although not and
24 compromise the quality of what we're doing.

25 **MR. GRIFFON:** Right. I think if we had 32 --

1 if we end up with 32, I don't think it's going
2 to be a problem.

3 **DR. WADE:** Or 28.

4 **MR. GRIFFON:** Or 28, but let's go through and
5 just -- there's a couple of those I was a
6 little bit unsure on whether it's wor-- worth
7 it. So the first one I have on the list is 28,
8 if I'm correct.

9 **DR. WADE:** Correct.

10 **MS. MUNN:** Yeah.

11 **MR. GRIFFON:** 28 is -- again, is a K-25/X-10
12 case with 30 years experience and a pipe-
13 fitter.

14 **MS. MUNN:** I guess I would not find that one
15 particularly interesting. We've done a lot of
16 -- of work on the Oak Ridge Y-12/X-25 (sic)
17 complex.

18 **MR. GRIFFON:** I would actually probably
19 eliminate that one, yeah.

20 **MS. MUNN:** And yeah, I -- I wouldn't -- and
21 we've done that --

22 **MR. GRIFFON:** And Mike -- Mike, if you have any
23 reaction to any of these, just speak up.

24 **MR. GIBSON:** Yeah. Yeah, I'm looking at them.

25 **MR. GRIFFON:** Okay? All right. And Brad, any

1 reaction to that one, or...

2 **MR. CLAWSON:** I agree, I think we've done quite
3 a few of those.

4 **MR. GRIFFON:** Okay. All right, 99 is the next
5 one.

6 **MS. MUNN:** Now there you have the same cancer
7 but a very different situation, and that's
8 interesting just from --

9 **MR. GRIFFON:** Yeah.

10 **MS. MUNN:** -- the point of being interesting.

11 **MR. GRIFFON:** Right.

12 **MR. CLAWSON:** Yeah, I -- I like that one.

13 **MR. GRIFFON:** All right. We'll keep 99; 56 --
14 I think I'd vote for 56.

15 **MS. MUNN:** Same character-- same cancer, but
16 very different work experience and -- yeah,
17 that's interesting.

18 **MR. GRIFFON:** And the TIB-- and the TIB-18, we
19 haven't really --

20 **MS. MUNN:** Right.

21 **MR. GRIFFON:** -- focused on that a lot, so I
22 think that's a good -- all right. So that
23 gives us two. 302, Huntington Plant --
24 Huntington Pilot Plant, have we done -- we've
25 done -- we have done one of these or multiple

1 ones or -- couple -- couple of them?

2 **DR. WADE:** Kathy, could you help us with that,
3 Huntington?

4 **MS. BEHLING:** This is Kathy Behling. We've
5 done two Huntington.

6 **MR. GRIFFON:** I imagine the approach is the
7 same.

8 **MS. MUNN:** Yeah, it's --

9 **MR. GRIFFON:** Yeah, so I think we can skip that
10 one. I wasn't sure if we'd done it. Okay,
11 we'll -- we'll eliminate that one.

12 Brook-- or I'm sorry, I skipped one, 354,
13 Aliquippa Forge --

14 **MS. MUNN:** Yeah, interesting.

15 **MR. GRIFFON:** -- furnace operator.

16 **MR. CLAWSON:** I think -- I think that's one'd
17 be interesting.

18 **MR. GRIFFON:** Okay, we'll keep that one.
19 Thirteen, Brookhaven.

20 **DR. WADE:** A lab tech, yeah.

21 **MS. MUNN:** Yes.

22 **MR. GRIFFON:** Yeah, I -- I think that would be
23 interesting. We haven't done a Brookhaven case
24 yet, I don't think.

25 **MS. MUNN:** Even though it's another OTIB-2,

1 still, yes.

2 **MR. GRIFFON:** It is an OTIB-2, but it --

3 **MS. MUNN:** But it's a different thing.

4 **MR. GRIFFON:** Yeah. 76 --

5 **MS. MUNN:** Yeah.

6 **MR. GRIFFON:** -- Pinellas Plant.

7 **MS. MUNN:** Uh-huh, already --

8 **MR. GRIFFON:** You know, the other interesting
9 thing to me on this one was the -- the
10 description involving the use of coworker data
11 as opposed --

12 **MS. MUNN:** Uh-huh, yes.

13 **MR. GRIFFON:** -- to -- yeah, so --

14 **MS. MUNN:** Several things there that --

15 **MR. GRIFFON:** Right.

16 **MS. MUNN:** -- caught my eye.

17 **MR. GRIFFON:** All right, 76. I'm moving on. I
18 have 315 as the next one --

19 **MS. MUNN:** Uh-huh.

20 **MR. GRIFFON:** -- Savannah River case.

21 **MS. MUNN:** And as you pointed out, the only
22 really unusual thing there is all the different
23 work areas, and that's --

24 **MR. GRIFFON:** Yeah, the areas and the job
25 title, but other than that I'm not sure --

1 **MS. MUNN:** We've done a lot of Savannah River
2 and --

3 **MR. GRIFFON:** We have, I could go either way on
4 this.

5 **MS. MUNN:** -- done a lot of fitters. I --
6 despite the interesting work areas, I -- I
7 wouldn't put that on my priority list,
8 personally.

9 **MR. GRIFFON:** Okay. I -- I agree. Brad, I
10 didn't --

11 **MR. CLAWSON:** I -- I agree, I think we've done
12 quite (unintelligible).

13 **MR. GRIFFON:** All right. 342, another Savannah
14 River, a lung cancer close to the 50th
15 percentile, but overestimates on both sides,
16 so...

17 **MS. MUNN:** Uh-huh.

18 **MR. GRIFFON:** I'm not sure why I put that on
19 there.

20 **MS. MUNN:** I don't know. I wouldn't.

21 **MR. GRIFFON:** Yeah, cross that off. Next one
22 is a Paducah case, number 60, 32 years
23 experience starting in 1970.

24 **DR. WADE:** Groundskeeper.

25 **MR. GRIFFON:** Yeah, and -- and mechanical

1 maintenance, so -- I wish I knew more about
2 buildings or areas, but I was also -- well, I
3 don't know, that --

4 **MS. MUNN:** Why don't we probably find out more
5 if we review the case.

6 **MR. GRIFFON:** Yeah. Yeah, I think we can
7 include that. 174, this is -- is Y-12, 29
8 years, 1970s --

9 **MS. MUNN:** Overestimates, very low probability.

10 **MR. GRIFFON:** Low probability, yeah,
11 overestimates. It's not -- probably not that -
12 - all right, we can eliminate that one. 344, I
13 think you already expressed interest in this
14 one -- right, Wanda?

15 **MS. MUNN:** Yes, I did.

16 **MR. GRIFFON:** I think that's -- that looks like
17 a pretty good case.

18 **DR. WADE:** That's seven, so 30 -- 27 total.

19 **MR. GRIFFON:** 27? So that gives us 27 and of
20 course we're going to present this to the full
21 Board, but are there any others on the list
22 that you -- anybody's -- thinks we should have
23 included that I missed or -- we can at least
24 have this to present as a proposal to the full
25 Board.

1 **MS. MUNN:** Yeah, the other one that I found
2 very interesting just because if we've
3 encountered -- 166, even though the probability
4 is relatively low and -- and it's another OTIB-
5 2, I haven't seen that particular type of
6 cancer before. I don't know whether that's --

7 **DR. WADE:** What page of yours, Wanda?

8 **MS. MUNN:** The first --

9 **MR. GRIFFON:** Page 1.

10 **MS. MUNN:** -- very first page.

11 **MR. GRIFFON:** Yeah, it is an eye cancer.

12 **MS. MUNN:** Yeah.

13 **MR. GRIFFON:** It was only .7 years, th-- yeah,
14 a number of factors steered me away from that.

15 **MS. MUNN:** And don't know anything about the
16 job title. I guess I just -- you know, I can't
17 help but wonder, when you don't know the job
18 title and there's such a short employment
19 period, what -- you know, why was -- was there
20 a specific incident involved here? I guess --
21 it just raised a lot of questions. But I don't
22 know whether it's worth the effort to review it
23 or not.

24 **MR. GRIFFON:** Yeah, my -- my sense was that --

25 **MS. MUNN:** It's clearly an overestimate.

1 **MR. GRIFFON:** Yeah, yeah, my sense was that it
2 was the generic model approach and .7 years.
3 Any others, Brad? Any --

4 **MR. CLAWSON:** Well, on page 7 I was interested
5 in 100, and only reason is 'cause it -- he
6 calls out that he's -- personal monitoring,
7 kept radiation records, photographs, but it
8 calls out several different buildings. Most of
9 these that I see are in Hanford, but I see none
10 of these that -- in Idaho. It's a multi-site.
11 I kind of wanted to see -- it's another OTIB-2.

12 **MR. GRIFFON:** Yeah, it's an OTIB-2. Hanford
13 and Idaho. Does have 26 years in the early --
14 early period.

15 **MR. CLAWSON:** Yeah, it's in the '40s and 26
16 years of experience.

17 **MS. MUNN:** The Federal building, the 300 area -
18 -

19 **MR. CLAWSON:** I guess I've never seen that -- I
20 guess I've never seen that --

21 **MR. GRIFFON:** And it does involve the -- the --

22 **MR. CLAWSON:** -- (unintelligible) description.

23 **MR. GRIFFON:** -- neutron exposures prior to
24 '72, so -- yeah, I guess I could go either way
25 on this one.

1 **DR. WADE:** Wanda?

2 **MS. MUNN:** Well, I -- I agree, the -- the
3 combination of sites makes it kind of
4 interesting, but familiar as I am with the --
5 the sites listed there --

6 **MR. GRIFFON:** The areas are not -- yeah.

7 **MS. MUNN:** -- the areas really -- the Federal
8 building doesn't count for anything except the
9 granite, but I guess --

10 **MR. GRIFFON:** It does have the early year
11 neutron thing, which I --

12 **MS. MUNN:** Well --

13 **MR. GRIFFON:** -- that was the one thing that
14 intrigues me, kind of.

15 **MS. MUNN:** Well, and -- and the other thing
16 that might be of interest is the last item on
17 the -- the work-related stuff. Those folks
18 went all over, and that might be a little more
19 interesting than the average bear.

20 **MR. GRIFFON:** I think we can add that one.

21 **DR. WADE:** Okay, that's 100?

22 **MS. MUNN:** Yeah.

23 **MR. GRIFFON:** Let's add that one.

24 **MS. MUNN:** I -- I think yeah.

25 **MR. GRIFFON:** Does that give us 28?

1 **DR. WADE:** 28. Now the full Board, at 3:15
2 this afternoon, will take up the issue that --
3 the proposal you bring to them.

4 **MR. GRIFFON:** I'm sorry, okay. Okay, so I
5 think we'll -- we'll present that as a proposal
6 then, the 28 cases from -- for the seventh set,
7 and take it up this afternoon with the full
8 Board.

9 **STATUS OF ONGOING REVIEWS**

10 Now I just -- I want to go through some updates
11 on the other items, primarily updates.
12 The fourth set of -- fourth set case review, I
13 do have an updated matrix. And as I said, I
14 added in a resolution column. In -- in a
15 couple of places I think I have question marks.
16 I'll get together probably with Stu during this
17 meeting, resolve those and then send that out.
18 And I think -- my goal is to have another
19 subcommittee meeting prior to our next Board
20 meeting, in between Board meetings if we can,
21 where we can have a full day to do more of the
22 item by item discussions that we have to have
23 to go through the resolving of the findings.
24 So I'd like to take up the fourth set at that
25 next meeting.

1 The fifth set -- we have a matrix from SC&A.
2 Right? And I don't -- Stu's questioning that.
3 I know I have a matrix from SC&A.

4 **MS. BEHLING:** Excuse me, Mark. This is Kathy
5 Behling again. I provided you the matrix on
6 December 8th. However, I have not provided
7 that to NIOSH yet. I was waiting on your --
8 your direction.

9 **MR. GRIFFON:** Oh, okay. I apologize. Okay, so
10 I --

11 **MS. BEHLING:** That's all right.

12 **MR. GRIFFON:** -- I have a draft in -- in my
13 hands, then, and I think we'll -- we'll take
14 another look at that quickly and -- and -- but
15 get it -- get it to NIOSH, so I'll get back
16 with you, Kathy, and the next step'll be to get
17 that to NIOSH and get NIOSH response to the
18 findings.

19 **MS. BEHLING:** Very good.

20 **MR. GRIFFON:** I'd also like to be in a place
21 where we can bring that one to the next
22 meeting, if possible. So we'll try to turn
23 this around in the next week or so, Stu, and
24 give you a month and a half or whatever to, you
25 know, come back with a NIOSH response. Is that

1 -- I think that's probably doable. Okay. So I
2 would like to be in a spot where we could have
3 a subcommittee meeting in between the next two
4 Board meeting-- in between this meeting and the
5 next Board meeting where we can discuss the
6 fourth set, hopefully close most of those out,
7 and the fifth set begin our -- begin our
8 resolution process.

9 **DR. WADE:** Now we have a Board call scheduled
10 for April 5th, and then a face-to-face meeting
11 of the Board May 2nd, 3rd, and 4th in Denver.

12 **MR. GRIFFON:** So -- yeah, we might be able to
13 do it even before that Board call. Maybe we
14 can schedule a face-to-face subcommittee
15 meeting, but I'll check in for times later. We
16 don't have to do that here.

17 And then the sixth set -- what's the status on
18 that, Kathy?

19 **MS. BEHLING:** The sixth set I'm planning on
20 hopefully conducting the conference calls with
21 the two-member Board teams the week -- either
22 the end of next week or possibly the week of
23 the 18th is -- that's probably more doable.
24 I'm going to contact the Board members and
25 hopefully have conference calls that week, and

1 then we'll be ready to put a draft report out
2 thereafter.

3 **MR. GRIFFON:** Okay. Okay, so that's -- we're
4 well into the works there.

5 **MS. BEHLING:** Yes.

6 **MR. GRIFFON:** And -- and we -- we probably need
7 the time to catch up anyway on the fourth and
8 fifth sets so it sounds like our timing's
9 pretty good here.

10 The -- the other item I have left was the blind
11 reviews, and you know, our original scope
12 called for blind reviews. I think we've --
13 we've had comments over the last year or so
14 that we should include these, and we have yet -
15 - have yet to do that. You know, my -- my
16 inclination is to do so. I just think we need
17 to probably figure out how. I think it would
18 make sense to have it for the eighth set of
19 cases, maybe, and then how many we can -- we
20 can decide. But I think we -- you know, in
21 terms of how to do it, I think it would
22 probably make sense if the subcommittee worked
23 with NIOSH and selected a case for blind
24 review, but -- just thinking through how to do
25 this, I -- you know, the subcommittee operates

1 in a public forum. We want to keep the
2 identification of this case -- we want to have
3 it go de-identified to SC&A, so you know, we
4 could work on the selection and then provide --
5 John -- John, go ahead.

6 **DR. MAURO:** This is more from the point of view
7 of notwithstanding which blind review is
8 selected. It has more to do with a
9 conversation Hans and I have been having
10 regarding the -- what we're hoping to
11 accomplish with a blind review, which will
12 affect the status --

13 **MS. MUNN:** John, ex-- excuse me, I don't think
14 that mike is --

15 **MR. GRIFFON:** Yeah.

16 **MS. MUNN:** It's not coming through up here.

17 **MR. GIBSON:** Yeah, it's not.

18 **DR. MAURO:** It is on. I'll speak into it. I
19 guess it is on. You can hear me okay? It's
20 on, yes.

21 **MS. MUNN:** There you go.

22 **DR. MAURO:** Okay, I just was a little too --

23 **MS. MUNN:** Yeah.

24 **DR. MAURO:** Let me see if I can explain the
25 distinction.

1 **MR. GRIFFON:** Uh-huh.

2 **DR. MAURO:** My perspective, and this is -- and
3 Hans has a different perspective and I think
4 I'd like to put before the subcommittee, is a
5 blind review could take one of two forms.
6 Let's say you pick the case. One approach
7 would be SC&A -- here are all the raw data from
8 DOE on this case regarding bioassay, regarding
9 job description, regarding film badge, et
10 cetera. In other words, the fundamental raw
11 data. Here's your starting point. Reconstruct
12 the doses using your own sensibilities and
13 skill sets and resources, starting from
14 scratch. Okay? And this way, we would do it
15 the way we would do it. Okay?
16 The alternative is, no, don't do it that way.
17 Do it the way NIOSH would do it, using all
18 their workbooks, all their procedures, all of
19 their tools that they -- that you believe they
20 would use, which would test something a little
21 different. Other words, in one way it's really
22 do we come out in the same place if we were to
23 do it our own way from the raw data, which
24 would -- which would really answer one kind of
25 question. The other approach would really test

1 the entire process, which includes all the
2 workbooks, all the procedures, all -- you know,
3 there are 60, 70 procedures -- and test those,
4 because we would actually apply all of that to
5 it.

6 **MR. GRIFFON:** Uh-huh.

7 **DR. MAURO:** And so there really are two
8 different ways we could come at this. In
9 theory, we could do both and -- and see what
10 happens. So I just want to leave that with you
11 as a think piece when you make a decision.

12 **MR. GRIFFON:** Yeah, my sense -- you -- I was
13 just about to say the same two distinctions.
14 That's -- that's -- that's the way I saw it, as
15 well, it's either you work from the raw data or
16 you -- you follow NIOSH's procedures. My sense
17 was that we're -- we're testing the workbooks
18 in many of our other audit functions and many
19 of our other reviews, and my inkling was to
20 lean toward the work from raw data, with the
21 understanding that -- that you're not
22 necessarily going to come up with the same
23 exact answer, but if -- that -- that's where
24 it's going to be a little bit subjective on our
25 part to say, you know, they're -- they're in

1 the sa-- you know, all health physicists know
2 that you're not going to -- you know, two
3 people do internal dose calculations, you could
4 come -- you know, what -- what is a reasonable
5 closeness, I guess, is -- is going to be the
6 subjective part of this. But I think that --
7 that has some value. Go ahead, Hans.

8 **DR. BEHLING:** Yeah, you're exactly right, and I
9 think that's was my comment. You have to
10 accept the fact that if we deal with first
11 principles, totally independent --

12 **MR. GRIFFON:** Yeah.

13 **DR. BEHLING:** -- the level of sophistication
14 will not be there. We will probably not have
15 the statistical models to do -- run Crystal
16 Ball equivalencies. We will not run all kinds
17 of statistical models that deal with the
18 uncertainty. We will probably deal with
19 deterministic values. And of course under
20 those conditions, when you use lognormal
21 distributions versus a deterministic model,
22 you're going to end up with significant
23 differences. Now --

24 **MR. GRIFFON:** Yeah.

25 **DR. BEHLING:** -- the question is, what are we

1 willing to accept as a difference that's
2 acceptable, recognizing that we're dealing with
3 a very different approach.

4 On the other hand, if we do use their method,
5 which we have obviously reviewed and -- and
6 scrutinized, the question is, given the option
7 of using the same methodology --

8 **MR. GRIFFON:** Right.

9 **DR. BEHLING:** -- that NIOSH has used, we should
10 in principle become very -- get very close
11 results.

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

13 **DR. BEHLING:** And -- and -- and so you have to
14 look at those two options and say which one do
15 you really want to look at.

16 **MR. GRIFFON:** And I think -- but I think John
17 raises a -- another -- a third option, which is
18 we could select both, and I think that ha--
19 that has some merit to -- 'cause I think on the
20 one hand you're -- you're right, Hans, you're --
21 -- in -- in this scenario you're sort of testing
22 the application of the tools, you know, so
23 you're going to use the same tools, but how you
24 take the -- how you go from your raw data and
25 use those tools, is it consistent with what

1 NIOSH did, and that's a good test, that's a
2 good thing to test.

3 **DR. BEHLING:** And there's still -- still
4 variables. I mean in many instances --

5 **MR. GRIFFON:** Right.

6 **DR. BEHLING:** -- NIOSH has options for choosing
7 which guidance, which documents, which protocol
8 they want to use --

9 **MR. GRIFFON:** Right.

10 **DR. BEHLING:** -- so it's not cast in stone,
11 either.

12 **MR. GRIFFON:** No, I know.

13 **DR. BEHLING:** There are certain options
14 available for NIOSH to do a dose
15 reconstruction. And -- and even there, there
16 are likely to be variables, depending on
17 subjective selection of which guidance document
18 do you want to use.

19 The second down side to the use of -- of that
20 particular approach is that some of the
21 guidance documents and books -- workbooks are
22 quite sophisticated and would probably require
23 some training on the part of some of the people
24 who will do the blind dose reconstruction
25 because we have not had that benefit. So I do

1 want to caution you that --

2 **MR. GRIFFON:** Right.

3 **DR. BEHLING:** -- probably different training
4 will be necessary for us to do that.

5 **MR. GRIFFON:** Yeah. Wanda, go ahead.

6 **MS. MUNN:** No, go ahead, Larry.

7 **MR. ELLIOTT:** Well, I feel compelled to come to
8 the mike and speak. I think that both
9 approaches bring useful information to us.
10 They have their utility, and we would look
11 forward to the use of either approach. Just
12 would say that we stand ready to help in
13 providing what information you wish, whether
14 it's just the raw data solely or it's raw data
15 and the workbooks and all of the tools that are
16 used in -- in the way we go about doing this
17 dose reconstruction program. I think that
18 certainly all of the reviews of claims and all
19 of the reviews of the procedures that the Board
20 has conducted have really looked -- in my
21 opinion, have looked at are we applying our
22 methodology as -- as we say we are. And to
23 look at a blind dose reconstruction that starts
24 with raw data and uses professional judgment,
25 uses deterministic values and approaches and

1 assessments and states assumptions and how
2 they're treated I think goes more toward is
3 there another method, is there another way of
4 going about doing this work, and that's
5 certainly of interest to us as well.

6 **MR. GRIFFON:** Yeah, I'm -- I -- I actually --
7 you know, and I don't think we -- we ever
8 planned on doing a lot of these blind reviews,
9 but I think there might be some usefulness in --
10 -- in doing both approaches, but -- go ahead,
11 Wanda, what --

12 **MS. MUNN:** This is really a fairly thorny issue
13 if you parse it and really get into the guts of
14 it. It's not like doing trigonometry. You
15 don't have a set of -- of theorems that you're
16 going to work by. You have processes, but all
17 of us who've done any kind of calculations know
18 your calculation is likely to be different than
19 your colleague's calculation, even though
20 you're using the same methodology. And I'm --
21 I personally am very comfortable with the work
22 that SC&A has done reviewing the procedures and
23 approving and commenting on how those are done.
24 Doing it an entirely different way would give
25 us information; I'm not sure whether that's the

1 information that we want when we're analyzing
2 our basic reason for wanting blind reviews.
3 Perhaps it would benefit us to think for a
4 little bit about exactly what we want from the
5 blind review before we try to decide how to go
6 at it. My first instinct is, if we really
7 wanted to thoroughly analyze this, that we
8 would do -- use John's suggestion to use both
9 methods. But as Hans pointed out, this is not
10 just a cut and dried issue for SC&A folks.
11 That would require -- depending on the case
12 that we chose for blind review, that might
13 require some extensive training, and I don't
14 have a feel for how extensive that training
15 might need to be. I know that -- that the
16 NIOSH folks have spent a great deal of time in
17 training on their -- on -- on some of these --

18 **MR. GRIFFON:** Yeah.

19 **MS. MUNN:** -- more complex issues. So it might
20 -- I -- I guess I'd like for this subcommittee
21 to have a little better grasp of precisely what
22 we want out of these blind reviews. What do we
23 want?

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

25 **DR. WADE:** It's always good to go back to the -

1 - the charter, and let me read from the charter
2 and I don't know if it'll inform the discussion
3 or not. Under "Function," (reading) The
4 Advisory Board on Radiation and Worker Health
5 shall (b) advise the Secretary of HHS on the
6 scientific validity and quality of dose
7 reconstruction efforts performed for this
8 program.

9 So really that's your chartered responsibility.
10 You have to think about that as you decide what
11 you want to do here.

12 **MR. GRIFFON:** Right, right, and I -- I think
13 when we were drafting the scope -- I mean part
14 of -- part of the thought process was -- was
15 just the -- instead of rev-- reviewing a
16 prescriptive approach that -- understanding
17 that -- that -- especially with -- with a more
18 complicated case, we could get fairly -- fairly
19 good differences in the doses that we come up
20 with, but it -- it was this -- this sort of
21 question that -- that Larry talked to and that
22 Hans mentioned, that, you know, even if --
23 without the aid of some of these tools, you
24 know, I would still expect that, given the same
25 set of raw data, that SC&A, our -- our

1 contractor is going to come up with something
2 close to -- and I'll put that in parentheses,
3 or in quotes, close to the dose that NIOSH got.
4 And then that -- that -- that sort of gives us
5 the reassurance that, you know, the approach --
6 you know, now we're -- we're testing sort of
7 the scientific validity of all the models, I
8 guess, more than the quality side of it. You
9 know, we're saying, you know, sort of just a
10 total different approach from a different
11 standpoint and they got -- you know, the answer
12 came close or didn't clo-- you know, and that's
13 more reassurance that the methods -- you know,
14 it's just another reassurance. I know we've
15 reviewed the procedures and we're reviewing all
16 the site profiles. You know, this is just
17 another step to say let's go back to the raw
18 data and see -- you know, put me in a room
19 alone and, in a vacuum, what would I come up
20 with without the -- without using pre-existing
21 tools to -- to work from, and I would hope I
22 would get, you know, pretty close to the dose.
23 Hans, you were about to --

24 **DR. BEHLING:** Yeah.

25 **MR. GRIFFON:** -- to get up.

1 **DR. BEHLING:** I think the validity of doing the
2 first principle approach would also depend on
3 the case selection. For instance --

4 **MR. GRIFFON:** Right.

5 **DR. BEHLING:** -- you wouldn't be able to select
6 an AWE case --

7 **MS. MUNN:** Yeah.

8 **DR. BEHLING:** -- for which there is no data.

9 **MS. MUNN:** Yeah, no.

10 **DR. BEHLING:** You wouldn't be able to select a
11 case for which coworker data is essential,
12 because then --

13 **MS. MUNN:** Right.

14 **DR. BEHLING:** -- we would have to go to
15 coworker data --

16 **MS. MUNN:** Yeah.

17 **MR. GRIFFON:** Right.

18 **DR. BEHLING:** -- in order to make that
19 accommodation. So part of the credibility of a
20 first principle approach would be based upon
21 the type of case that is being selected.

22 **MR. GRIFFON:** I agree, the --

23 **MS. MUNN:** Yeah.

24 **DR. BEHLING:** There is a complete dataset of
25 external/internal dosimetry, I think that's a

1 doable approach, but --

2 **MR. GRIFFON:** I agree, I --

3 **DR. BEHLING:** -- it has to be --

4 **MR. GRIFFON:** I was thinking of a best estimate
5 with both --

6 **DR. BEHLING:** Yes.

7 **MR. GRIFFON:** -- with both sets of data. That
8 was sort of in the back of my mind, but I
9 didn't know we were that far. But yeah, I
10 think you're right, the case selection's very
11 important and -- and we can even do -- you
12 know, we can even -- you know, to keep this
13 blind to SC&A, I think we as the subcommittee
14 can select a case and -- and you know, we're
15 not going to -- I mean John, Hans, you guys
16 will have the opportunity to come back to us
17 and say we've looked at this and we don't think
18 this is a -- appropriate case for blind review.
19 We don't want to do this one. You know, you
20 can throw it back at us and say bad selection.
21 I think that would be another, you know, sort
22 of way to triage this. We don't want to -- you
23 know, we want something that's going to be a --
24 appropriate for a blind review, you're right,
25 so --

1 **MS. MUNN:** Yeah, Brad has...

2 **MR. CLAWSON:** Yeah, I just wanted to say that I
3 think it's kind of critical that we -- we do do
4 this because, going back to the charter, we're
5 supposed to be able to say that this is what
6 we're doing, and we've got to be able to take -
7 - I agree that we've got to pick out a case,
8 we've got to sit down with both sides. But you
9 know, even in my work, it's always good to have
10 another set of eyes run through what I've done.
11 We may get a little off there at the end, but I
12 believe that we gain knowledge from each side
13 of the process and better understand how we're
14 getting into it, and I think that's quite
15 important.

16 **MR. GRIFFON:** And I -- I think we still -- we
17 still have our same resolution process where,
18 you know, if the number looks quite a bit
19 different, when we get down at the table and
20 start going through the resolution process we
21 might -- we might find out that in fact, you
22 know, they're not that far off given that you
23 didn't have the -- the Crystal Ball approach
24 and you -- you know, we can probably discuss
25 through why -- if there is a difference, why.

1 And you know, I think -- I think it does just -
2 - just gives another tool to examine the
3 scientific validity of -- of NIOSH's
4 approaches, so...

5 **MR. ELLIOTT:** Hans brings up a very interesting
6 point about doing a blind review and working
7 with the raw data, and not -- not -- not
8 looking at AWE cases in that regard because
9 AWEs typically don't --

10 **MR. GRIFFON:** Right.

11 **MR. ELLIOTT:** -- have data for us. In some
12 cases they do, but the majority, they don't.
13 And I'm not -- I don't -- I don't -- I would
14 not argue with that point. But I would suggest
15 that it still -- it still merits discussion and
16 consideration about should a blind review be
17 done for AWE approaches where you're only
18 dealing with the process information and the
19 source term and how you -- how you go about
20 trying -- attempting to reconstruct dose for
21 that. I -- I just -- you know, I don't want to
22 be argumentative, but I think it does merit
23 some -- some further consideration. I wouldn't
24 just select them out and say we're not going to
25 do blind reviews on them. I'd ask you to

1 consider the -- the AWE situation in that
2 regard.

3 I think it also needs to be said here that the
4 -- the tools and the various approaches that we
5 use at NIOSH in dose reconstruction, there --
6 there's a -- you know, there's an underlying
7 premise for why we have developed what we have
8 developed in order to reconstruct dose, and
9 that is -- that underlying premise is that we
10 want to make sure that a variety of health
11 physicists who are brought to bear on doing
12 dose reconstructions do so in a consistent
13 manner. Because if you put 100 of these good,
14 fine fellows in a room and let them have their
15 will at it and their way at it, they're going
16 to come out with 100 different ways of doing
17 this job. Some are going to come out with the
18 same -- same answer and some are going to be
19 farther away from -- from what that answer is.
20 So you know, our intent was is to provide some
21 consistency in approach and how we go about
22 doing our work, and so that leads me back to
23 saying what I said earlier. If there's another
24 way of doing our work, we'd like to see that
25 brought to bear and identified for us, so...

1 **MR. GRIFFON:** We've got a couple of -- John and
2 then Paul.

3 **DR. MAURO:** I'll be very -- I'll be very brief.

4 **MR. GRIFFON:** I don't disagree with the AWE
5 point, by the way. I don't know that we
6 necessarily are ready to -- I think we just
7 have to be careful in the case selection, but I
8 would point out on the AWE side that I think --
9 when we do the site profile reviews, if it's an
10 AWE site profile review, we do spend a fair
11 amount of time looking at those models. So
12 that sort of is a review in of itself, so --
13 you know, but anyway...

14 **DR. MAURO:** Another dimension to the selection
15 of the cases that might undergo blind review,
16 whatever scope and approach is used, is right
17 now before us there are a number of issues that
18 we're engaged in and closing out on site
19 profiles, and SECs. An example -- as we all
20 know, there is some discussion about to begin
21 regarding neutron dosimetry, neutron-to-photon
22 ratios in the early years of Hanford. We all
23 know we're going -- we will be meeting on that
24 subject. There are issues certainly that
25 emerge from Fernald. I know that we -- you see

1 our report. We have certain issues that we've
2 raised related to thorium, internal dose from
3 thorium. There are many of these types of
4 technical issues that are before us and that we
5 will be discussing. The degree to which
6 selecting cases or selecting a blind dose
7 reconstruction with an eye toward will that
8 help inform the other aspects of the program
9 that we're involved in -- in other words, in
10 the process of engaging in a blind dose
11 reconstruction or a selection of a particular
12 case, the degree to which going through that
13 case will add value to help achieve closure on
14 some of the issues we're dealing with on the
15 site profile or SEC is another way to look at
16 it. It's almost like an integrating factor.
17 So I wanted to sort of leave that with folks.
18 That's another way to think about it.

19 **MR. GRIFFON:** Paul, did you...

20 **DR. ZIEMER:** Just want to make two points. One
21 is that in the case selection process I think
22 it'll behoove the subcommittee -- and the full
23 Board, 'cause I guess the full Board will have
24 to recommend this -- to identify the parameters
25 of the type you describe and whether it

1 includes AWEs and so on. But we've got to do
2 the selection in the open, so I think at some
3 point we're going to have to have Stu or
4 somebody come to us with a -- a list of just
5 items, with no specs on their characteristic
6 other than the general characteristics that we
7 provide for the preliminary selection process,
8 and then choose some of those at random so that
9 there's nothing known to us or -- other than
10 whatever parameters we -- we determine, and
11 particularly to the contractor, about the case
12 in advance 'cause -- if they're really going to
13 do it blind.

14 My second point is that whether you do it by
15 first principles or by NIOSH process, you're
16 probably going to get a different number. Hans
17 has suggested how close is close enough. It
18 seems to me we've got to focus on -- the
19 ultimate criteria is would the number change
20 the decision, because --

21 **MR. GRIFFON:** Yeah.

22 **DR. ZIEMER:** -- if you give a health physicist
23 a dose problem and tell him to solve it first
24 principles, they will get a very different
25 answer unless they make the kinds of

1 assumptions we do, which are claimant friendly.
2 Most of those aren't done by health physicists
3 when they do dose reconstruction. So we'll
4 have to think about --

5 **MR. GRIFFON:** Yeah.

6 **DR. ZIEMER:** -- those parameters, but
7 ultimately I think that question is would it
8 change -- if it's going to change the decision,
9 then we really have to look at what's being
10 done. If it's not going to change the
11 decision, that's ultimately the focal point I
12 think we've got to get to, but I just want to
13 make sure we don't --

14 **MR. GRIFFON:** Yeah.

15 **DR. ZIEMER:** -- lose sight of that.

16 **MR. GRIFFON:** No, you're right, you're right.
17 Couple of good points there.

18 **MS. MUNN:** Yeah, very.

19 **DR. BEHLING:** And one more thing, and I guess I
20 would like to have some understanding -- what
21 are the bottom line limitations. For instance,
22 we might receive a dose reconstruction for
23 blind review. Would we know where that person
24 worked, which is highly essential, because we
25 have to have some understanding when we talk

1 about urine data involving uranium, what type
2 of uranium was used, where was the facility.
3 So we would ultimately end up still with a TBD,
4 which in itself has at least the fundamental
5 approach for dose reconstruction embedded in
6 it, so that there is always shades of
7 differences that separate us from a total blind
8 review where you know absolutely nothing, only
9 the data sheets that DOE provides with regard
10 to bioassay.

11 **MR. GRIFFON:** Right.

12 **DR. BEHLING:** But in this case, that's not
13 enough. We would have to also know where he
14 worked and a few other things because they're
15 very pertinent in making a decision when you
16 look at a bioassay.

17 **MR. GRIFFON:** Right. I -- I agree with you
18 there. There's shades, because I -- I also
19 don't thi-- you know, if -- if you think about
20 that, you want to know -- you have to have some
21 baseline information such as the site they
22 worked at, the jobs they wor-- either the areas
23 or jobs they worked at, but also I don't think
24 we want to have you reinvestigate to find out
25 what the badging protocols or urinalysis

1 program was for that time. It's in the site
2 pro-- you know, so there is some baseline
3 information I think that we would say you
4 should use, you know, and -- and state those
5 assumptions in your review that, you know, we -
6 - we took this from NIOSH's site profile that
7 the MDA for this time period was X, you know.
8 So I -- you're right, there -- there's degrees
9 which we have to work through. All right.

10 **MR. ELLIOTT:** I think Hans makes a very good
11 point as well. Here again, from my
12 perspective, I've always thought your blind
13 reviews would start with the claimant file,
14 without our dose reconstruction report in it.
15 So you would have all the things that the
16 claimant submitted to the -- to the file at
17 DOL, plus the things that have been developed
18 at NIOSH, such as the interview. You want
19 that. That would aid you in understanding
20 where the person worked, as best we could --
21 could develop that. I would think that would
22 be your starting point.

23 **MR. GRIFFON:** Yeah.

24 **MR. ELLIOTT:** I -- another point I need to make
25 here is that when we talk about methods --

1 methodology as -- and application of the
2 methodology, where do you draw the line on
3 methodology and the way we go about doing our
4 work in dose reconstruction at NIOSH with
5 regard to what the law and what the regulations
6 say about methodology for these claimants. I
7 think it's important that you understand that a
8 claimant can appeal on whether we applied our
9 methodology correctly. But there is no appeal
10 on whether our methodology -- they can't
11 question the methodology. The methodology has
12 been developed from the law and in -- into the
13 regulations that have been publicly commented
14 on and reviewed. Okay. That's not to say that
15 we're not interested in is there another way of
16 going about doing this work.

17 **MR. GRIFFON:** Right.

18 **MR. ELLIOTT:** But if you -- if you delve into
19 the methods to -- you know, to the point of
20 trying to prove the methodology wrong, that --
21 that -- I think that's going to cause some --
22 some issues legally.

23 **MR. GRIFFON:** But when -- when you say methods,
24 you're talking about sort of the hierarchy of -

25 -

1 **MR. ELLIOTT:** I think you start with -- the
2 methods are our regulations and our two --

3 **MR. GRIFFON:** Yeah.

4 **MR. ELLIOTT:** -- implementation guides.
5 Everything else below that, all of the site
6 profiles, the Technical Basis Documents --

7 **MR. GRIFFON:** Right.

8 **MR. ELLIOTT:** -- the coworker data
9 distributions, the Technical Information
10 Bulletins, these are -- these are tools to
11 apply the methodology that are -- that is
12 stated in the regulations and in the
13 implementation guides. And some might argue
14 that you take the implementation guides out of
15 that picture, and that -- that may be okay.

16 **MR. GRIFFON:** Yeah.

17 **MR. ELLIOTT:** But the regulation is what's been
18 publicly commented upon and, like it or not,
19 that's what we're operating under.

20 **MR. GRIFFON:** Right, we're not -- yeah, I agree
21 with that. We're not going beyond that. We're
22 not questioning that. That's a -- that's a
23 starting point, I agree.

24 And that -- you know, the other -- I think Paul
25 raised that question. I mean I think a big --

1 a critical thing in this review is did -- did
2 you get the deci-- decision correct, and that
3 was sort of why I was leaning toward, you know,
4 best estimate on internal/external with
5 something near the 50th percentile 'cause
6 that's where you're going to see -- yeah,
7 that's going to play out, so -- but -- but --
8 but let -- you know, at least we got some
9 discussion on this. I'm not sure we're going
10 to -- I know we're not going to resolve it
11 today, but my goal in the subcommittee I think
12 is to develop a written sort of protocol for
13 our blind reviews, and -- and maybe we can
14 start to -- you know, I can draft something and
15 bring it to the next subcommittee for -- for
16 further discussion.

17 **DR. WADE:** Right, and then while the issue of
18 did the -- did the decision change, I think
19 it's also valid to say did the blind review
20 point out anything that would raise issues or
21 concerns relative to the scientific quality --
22 scientific validity or quality of the dose
23 reconstruction. I think you have to focus on
24 that.

25 **MR. GRIFFON:** Wanda?

1 **MS. MUNN:** Remind me how many blind reviews we
2 said we were going to do.

3 **MR. GRIFFON:** I think we said two per year --
4 two per year, and we haven't done any yet, so -
5 -

6 **MS. MUNN:** We haven't done any, yeah.

7 **MR. GRIFFON:** -- we could probably do six --

8 **DR. MAURO:** (Off microphone) (Unintelligible)

9 **MR. GRIFFON:** Yeah, but we don't -- you know,
10 like I said, we -- we might want to do two in
11 the -- in the eighth round and see how it --
12 see how our process works, you know, something
13 like that. That would be my goal would be for
14 the next -- the eighth round of cases to
15 include two blind reviews. Which means we have
16 to, in that time, outline our protocol for --
17 for selection and for conduct of those blind
18 reviews. So I think this was good today. We
19 got a -- we had a good initial exchange of
20 ideas. We can -- you know, I can -- I can take
21 a crack at an initial draft of some protocols.
22 I'll circulate it and get some feedback on it.
23 I think we can get feedback on the protocol
24 from -- from all parties, SC&S, NIOSH and --
25 and internally, you know, just in -- in terms

1 of what's -- what's the best way to do this.
2 And then we -- I -- I have to -- I think we
3 also have to think through more of the process
4 of -- of the selection 'cause we have to have
5 enough information there to make sure we're
6 going to get the kind of case we want, but like
7 Paul indicated, we do -- we're doing this in a
8 public forum. We want to keep the case blind
9 to the -- to -- to us and to the subcontractor,
10 so how we -- how we meet that goal we might
11 have to talk through a little bit.

12 **MS. MUNN:** Protocol is crucial I think to what
13 we're going to do. How we're going to do it is
14 -- is almost more important than -- than the
15 other issue.

16 **MR. GRIFFON:** Yeah.

17 **MS. MUNN:** But one of the things that comes to
18 my mind is whether blind reviews should always
19 be necessarily new cases that we have not
20 looked at, or whether they should legitimately
21 be drawn from the pool that we have already
22 reviewed in other aspects. It would be a
23 double-check sort of to do some of those blind.

24 **MR. GRIFFON:** That -- that -- that's a good
25 point. I haven't -- hadn't thought of that,

1 but we could pro-- could possibly not exclude
2 those cases we've previously reviewed from the
3 pool of candidates, so...

4 **MS. MUNN:** It's a possibility.

5 **MR. GRIFFON:** Yeah. Anything else on blind
6 reviews?

7 (No responses)

8 The -- the last thing I'll mention, and I know
9 Wanda has a workgroup coming up, but I'll --
10 I'll just --

11 **MS. MUNN:** We won't take much time.

12 **MR. GRIFFON:** The -- the -- the only other
13 thing I wanted to -- to ask about was -- if you
14 go back to the scope, which -- which I haven't
15 done, I'm mentally going back to the scope of
16 work, we had the basic and advanced review
17 difference. And I'd like to take that up
18 again, too, in our subcommittee deliberations
19 because I -- I think that the -- thus -- I
20 think there's some components of the advanced
21 review that we haven't really gotten into in
22 our -- in our case reviews thus far. I think
23 that -- the other side of this is I think that
24 -- and -- and I know we-- we've discussed this
25 with SC&A, but I think -- my sense is that I --

1 I don't need to see every line item of the IREP
2 input sheet calculated by SC&A to make sure
3 every line item was -- was -- was correct.
4 Sometimes there's hundreds of these line items
5 going into the IREP input file, different doses
6 by year, segregated out by different radiation
7 types.

8 On the other hand, I don't think that -- in a
9 lot of cases on the advanced review, for
10 instance, if -- if we've gone back to the raw
11 data in our review, I don't know that we've --
12 I -- I -- and maybe I'm wrong on this, but I
13 don't think we've taken that next step of --
14 you know, if -- if there were gaps in certain
15 types of data, and this is an example but I
16 want to explore the advanced protocol and see
17 if we're -- if we're missing some of these
18 other scope items. But if there were gaps in
19 external or internal data, NIOSH used a certain
20 approach to -- to fill in those gaps, different
21 methods, coworker, LOD over 2, whatever. And -
22 - and I think our audits sort of looked at that
23 and examined whether that was applied
24 correctly, but I don't think that we took the
25 next step to go back and say -- questioning

1 whether those people should have been monitored
2 at the time, was this missing data, was this --
3 you know, was it a blank or a zero, exploring
4 whether the -- the -- the requirements for the
5 site -- this does get into our site profile
6 reviews to some extent, but the requi-- did the
7 -- did the site require that that person should
8 have been monitored, and if they -- if the site
9 did require monitoring, why were there four
10 years of no data, you know, notwithstanding --
11 you -- you know, so -- so then that sort of
12 leads to the question of was LOD over 2 the
13 appropriate way to fill in the gap. I don't
14 think we did that sort of drill-down to see if
15 -- if the approach used was consistent with
16 sort of what -- what's in the site profile,
17 what's in other documentation about the site
18 procedures and protocols at the time. So that
19 -- that's sort of one example. I want to --
20 and I'm not going to get into that much here
21 because we're running short on time, but I
22 guess I want to take up that question of let's
23 go back to our original scope and sort of
24 examine the scope items within the advanced
25 review versus basic and see if we didn't miss

1 some and see if it will be worth including
2 those in some of our future reviews. That --
3 that -- I'll just leave that out there as a --
4 unless you want to respond now. I would just
5 offer -- let's continue that discussion at our
6 next --

7 **DR. WADE:** Right, we'll capture that as an
8 agenda item for the next subcommittee meeting.

9 **MR. GRIFFON:** Yeah.

10 (Whereupon, Dr. Poston joined the group.)

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

12 **DR. WADE:** Okay.

13 **MR. GRIFFON:** Any parting thoughts? I'm going
14 to leave Wanda time for --

15 **DR. WADE:** I will adjourn the subcommittee then
16 --

17 **MR. GRIFFON:** Okay.

18 **DR. WADE:** -- and take a stretch break and
19 reconvene the workgroup in five minutes, Wanda?

20 **MS. MUNN:** Five minutes.

21 **MR. GRIFFON:** Yeah. Subcommittee's adjourned.
22 Thanks.

23 (Whereupon, the meeting was adjourned at 11:24
24 a.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 February 7, 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 12th day of April, 2007.

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