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.

C O N T E N T S

February 7, 2007

TRANSCRIPT LEGEND

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P R O C E E D I N G S

(10:00 a.m.)

WELCOME AND OPENING COMMENTS

DR. 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

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

WELCOME AND OPENING REMARKS

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

ending up reviewing cases that aren't really of interest to -- to the Board. And we wanted to -- the additional information included the date the DR was approved, and this was important because a -- a lot of the cases that were done in -- using early versions of procedures, we didn't want to re—re-look at those issues again. We -- they've come up again and again in our process, so we wanted to look at the date of approval and get the more recently approved dose reconstructions, if possible.

We also wanted to get information on the methods for external and internal dose reconstruction. Sometimes the simple ex-- explanation of overestimate or -- or full internal/external is -- is not telling the full story of -- of what was done for the dose reconstruction, so we wanted more -- a more descriptive field there of what -- how the DR was conducted for that individual case.

We also wanted information on work area. We weren't sure how productive this was going to be, but the idea was -- especially for some of the bigger sites, Savannah River, Hanford -- we wanted to make sure we were getting a

distribution of not only -- some of the criteria we were looking at is types of cancer, things like that, but we also wanted a distribution amongst the work areas, if possible, so we wanted to see that -- that field in our pre-selection criteria.

And of particular interest in the neutron dose reconstruction aspect, pre- and post-1973; and then job information, job title information.

I will say, you -- you know, to some extent this information was and was not useful, depending on the case. Sometimes there was a number of jobs listed. Sometimes work areas was, you know, various, things like that were in the field. But I think overall it was helpful. I really appreciated the information on the DR methodology particularly. That was helpful to me in looking at these cases.

So in -- in front of us we have this -- this matrix. It includes the -- and I don't have a count on this, but the cases that were selected at our -- at one of our Board meetings. And then if you go to like page 5 in this matrix, at the very bottom it says the second pre-selected set. And if you recall in our January

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

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

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

calculations and provide them back to the subcommittee. So what I want to do on that is just to -- to give an updated matrix to SC&A and NIOSH and -- and get back on -- on track with that and bring it back to the next subcommittee meeting and -- and com-- you know, work on comple-- work towards completion. The fifth and sixth set of cases are also out there, and I just want to do an update on that. And the last -- last thing I wanted to discuss was -- and this might be something for the eighth set of cases that we cover, but it's been mentioned in previous meetings that we, in our original scope, talked about blind reviews but we have not yet done any. So I think we might want to, if -- if we have time today, talk amongst ourselves about the process by wh-- you know, if -- if we're going to do blind reviews, and then how are we going to go about it, you know, in terms of how do we select the case, how do we de-identify it so that SC&A has a truly blind case in front of them and -- and so forth, so...

So that's sort of a sketch of an agenda. And like I said, the meat of it is the selecting of

the seventh set of cases.
Anybody have anything to add to that that I -- Wanda?
MS. MUNN: No, not an addition, I just did a quick count to know what we had from our random selections here. And by my count we have 32 in the first set and 29 in that second set, from which we ought to be able to get 30 okay.
And then one last question. Do we -- do -- do we have the copy of your -- you said that you had done some review response on -- on the -- on the case four set?
MR. GRIFFON: No, I don't --
MS. MUNN: I don't have that.
MR. GRIFFON: Right, and --
MS. MUNN: So there's no point in my searching --
MR. GRIFFON: No, I just --
MS. MUNN: -- my database for it? Okay.
MR. GRIFFON: -- I was just in -- working on that yesterday, so --
MS. MUNN: Oh, okay. Thank you.
MR. GRIFFON: But I want to get -- yeah, I'll get that back around, people.
MS. MUNN: Thanks.

SELECT 7TH ROUND OF DOSE RECONSTRUCTIONS TO BE REVIEWED

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

MS. MUNN: That was a long time ago.

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

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

MR. GRIFFON: Okay.

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

MR. GRIFFON: Okay, I can go --

MS. MUNN: And why.

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

too?

MS. MUNN: Yeah.

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

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

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

MS. MUNN: Yes, it is.

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

MS. MUNN: I have pages --

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

MS. MUNN: Whole batch.

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

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

DR. WADE: I think 19.

MR. GRIFFON: You counted 19?

DR. WADE: Yeah.

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

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

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

MS. MUNN: Page 3.

DR. WADE: Three, bottom of page 3.

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

DR. WADE: Stu?

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

MS. MUNN: Stu will help.

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

MS. MUNN: Yeah.

MR. GRIFFON: -- so...

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

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

MR. HINNEFELD: It was largely a --

MR. GRIFFON: -- right.

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

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

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

City Plant. It's --

MS. MUNN: Who ran it?

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

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

MS. MUNN: A short-term AWE?

MR. HINNEFELD: Bendix.

MS. MUNN: Huh?

MR. HINNEFELD: Bendix ran it.

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

MR. HINNEFELD: Right.

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

MR. HINNEFELD: Right.

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

MR. HINNEFELD: Correct.

MR. GRIFFON: -- facility, you know.

MR. HINNEFELD: Correct.

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

MR. GRIFFON: I did have two?

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

MR. HINNEFELD: They made mainly non-radiological items.

MR. GRIFFON: Right.

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

MR. GRIFFON: The other thing --

MS. MUNN: Oh, okay.

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

MS. MUNN: Yeah.

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

MS. MUNN: That's --

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

DR. WADE: But for the --

MR. GRIFFON: -- probably not more.

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

MS. MUNN: Yeah. Good.

MR. GRIFFON: I can count.

DR. WADE: I can't.

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

MS. MUNN: Yes, it is.

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

think we had a lot of TIB-2s that were --
MS. MUNN: Yeah, I think we did.
MR. GRIFFON: -- that were used, and this is what -- I just used a hypothetical set of --
MS. MUNN: Uh-huh.
MR. GRIFFON: -- for the intake, so --
MS. MUNN: Uh-huh, yeah.
MR. GRIFFON: -- you know, if I saw that, I -- I generally skipped a lot of those.
MS. MUNN: Just went over them, yeah.
MR. GRIFFON: Yeah. And then sometimes, for ones that aren't -- aren't obvious why I picked them, sometimes it was a matter of picking the site, because I didn't think we had a lot of cases from that site.
MS. MUNN: Yeah, it looks like there's a good site spread.
MR. GRIFFON: Yeah.
MS. MUNN: And I guess just no deeper into it than I went, the job titles looked like they were a good spread, too.
MR. GRIFFON: Now the other -- the -- you know, there are definitely -- if -- if you want to go through other potential ones, 'cause I think we can probably get the list a little higher, I'm

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

DR. WADE: On the first page?

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

MS. MUNN: I have --

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

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

MR. GRIFFON: Yeah, sorry.

MS. MUNN: -- but --

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

MS. MUNN: -- you --

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

MS. MUNN: Right.

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

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

MR. GRIFFON: Where is that?

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

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

DR. WADE: Bottom of 4.

MR. GRIFFON: -- bottom of 4.

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

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

MS. MUNN: And maintenance.

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

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

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

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

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

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

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

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

MS. MUNN: I don't either.

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

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

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

MS. MUNN: Uh-huh.

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

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

standard --
MR. GRIFFON: Okay.
MR. HINNEFELD: -- for the duration of their employment.
MR. GRIFFON: So I don't -- I don't think we've discussed --
MR. HINNEFELD: I don't think there've --
MR. GRIFFON: -- that a lot on the --
MR. HINNEFELD: -- been many --
MR. GRIFFON: Right.
MR. HINNEFELD: I don't think many TIB-18s have been reviewed.
MR. GRIFFON: Right.
MR. HINNEFELD: I don't believe they have.
MR. GRIFFON: So I think that might be a good one for that reason. That's 56. Going on down two cases from there, I have 302, this was just a long history. Huntington Plant, I don't think we've done a lot of reviews for --
MS. MUNN: I don't think so.
MR. GRIFFON: -- the Huntington Plant, you know.
MS. MUNN: I don't remember it.
MR. GRIFFON: Multi-- multiple cancer, also, so those were the main reasons I was looking at.

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

MS. MUNN: Hmm.

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

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

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

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

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

MS. MUNN: Yeah.

MR. GRIFFON: -- probably a --

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

MR. GRIFFON: Yeah.

MS. BEHLING: Excuse me, Mark?

MR. GRIFFON: Yes.

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

MR. GRIFFON: Okay. Okay, so --

MS. MUNN: Uh-huh, yeah.

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

my potential list.

MS. MUNN: Yeah.

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

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

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

MS. MUNN: Uh-huh.

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

MS. MUNN: Oh, yeah.

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

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

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

MS. MUNN: Yeah.

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

MS. MUNN: Uh-huh.
MR. GRIFFON: And I skipped the next one because I think we've done Bridgeport Brass Havens Lab, too.
Then I'm way down to 315, this is into the -- the second set of selections, 315 was a Savannah River case, pipe-fitter, some interesting work areas. That -- that's sort of what -- you know, I'm not completely convinced, but it looks rather interesting.
MS. MUNN: Okay.
MR. GRIFFON: Then 342 and -- and number 60, right in a row there, which are Savannah River and a Paducah case. The Paducah case was actually one I was mo-- more interested in the work areas, but it --
MS. MUNN: Yeah.
MR. GRIFFON: -- doesn't tell you a whole lot.
MS. MUNN: No, it doesn't tell you.
MR. GRIFFON: Yeah.
MS. MUNN: Sounds like he might have been all over.
MR. GRIFFON: Right, right. And I think I have one more -- one or two more potential -- 174, which is down a ways. This is a Y-12 case, 29

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

MS. MUNN: All right.

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

MS. MUNN: Yeah.

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

MS. MUNN: Yeah, the work --

MR. GRIFFON: 32 years --

MS. MUNN: -- descriptions are really interesting.

MR. GRIFFON: Yeah, radiation monitor caught my eye.

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

MR. GRIFFON: Yeah, so 344.

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

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

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

DR. WADE: Twelve in addition to the 20.

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

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

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

MR. GIBSON: No, sounds good to me.

DR. WADE: Okay. Wanda?

MS. MUNN: Looked fine.

DR. WADE: Okay.

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

MS. MUNN: Last 12 maybe.

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

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

MR. GRIFFON: Well --

MS. MUNN: Or not?

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

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

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

DR. WADE: Or 28.

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

DR. WADE: Correct.

MS. MUNN: Yeah.

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

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

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

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

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

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

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

reaction to that one, or...

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

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

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

MR. GRIFFON: Yeah.

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

MR. GRIFFON: Right.

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

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

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

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

MS. MUNN: Right.

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

ones or -- couple -- couple of them?

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

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

MR. GRIFFON: I imagine the approach is the same.

MS. MUNN: Yeah, it's --

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

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

MS. MUNN: Yeah, interesting.

MR. GRIFFON: -- furnace operator.

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

MR. GRIFFON: Okay, we'll keep that one.

Thirteen, Brookhaven.

DR. WADE: A lab tech, yeah.

MS. MUNN: Yes.

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

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

still, yes.

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

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

MR. GRIFFON: Yeah. 76 --

MS. MUNN: Yeah.

MR. GRIFFON: -- Pinellas Plant.

MS. MUNN: Uh-huh, already --

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

MS. MUNN: Uh-huh, yes.

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

MS. MUNN: Several things there that --

MR. GRIFFON: Right.

MS. MUNN: -- caught my eye.

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

MS. MUNN: Uh-huh.

MR. GRIFFON: -- Savannah River case.

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

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

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

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

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

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

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

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

MS. MUNN: Uh-huh.

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

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

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

DR. WADE: Groundskeeper.

MR. GRIFFON: Yeah, and -- and mechanical

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

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

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

MS. MUNN: Overestimates, very low probability.

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

MS. MUNN: Yes, I did.

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

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

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

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

DR. WADE: What page of yours, Wanda?

MS. MUNN: The first --

MR. GRIFFON: Page 1.

MS. MUNN: -- very first page.

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

MS. MUNN: Yeah.

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

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

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

MS. MUNN: It's clearly an overestimate.

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

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

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

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

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

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

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

MR. CLAWSON: -- (unintelligible) description.

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

DR. WADE: Wanda?
MS. MUNN: Well, I -- I agree, the -- the combination of sites makes it kind of interesting, but familiar as I am with the -- the sites listed there --
MR. GRIFFON: The areas are not -- yeah.
MS. MUNN: -- the areas really -- the Federal building doesn't count for anything except the granite, but I guess --
MR. GRIFFON: It does have the early year neutron thing, which I --
MS. MUNN: Well --
MR. GRIFFON: -- that was the one thing that intrigues me, kind of.
MS. MUNN: Well, and -- and the other thing that might be of interest is the last item on the -- the work-related stuff. Those folks went all over, and that might be a little more interesting than the average bear.
MR. GRIFFON: I think we can add that one.
DR. WADE: Okay, that's 100?
MS. MUNN: Yeah.
MR. GRIFFON: Let's add that one.
MS. MUNN: I -- I think yeah.
MR. GRIFFON: Does that give us 28?

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

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

STATUS OF ONGOING REVIEWS

Now I just -- I want to go through some updates on the other items, primarily updates.

The fourth set of -- fourth set case review, I do have an updated matrix. And as I said, I added in a resolution column. In -- in a couple of places I think I have question marks. I'll get together probably with Stu during this meeting, resolve those and then send that out. And I think -- my goal is to have another subcommittee meeting prior to our next Board meeting, in between Board meetings if we can, where we can have a full day to do more of the item by item discussions that we have to have to go through the resolving of the findings. So I'd like to take up the fourth set at that next meeting.

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

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

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

MS. BEHLING: That's all right.

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

MS. BEHLING: Very good.

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

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

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

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

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

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

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

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

MS. BEHLING: Yes.

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

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

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

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

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

MR. GRIFFON: Yeah.

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

MR. GIBSON: Yeah, it's not.

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

MS. MUNN: There you go.

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

MS. MUNN: Yeah.

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

MR. GRIFFON: Uh-huh.

DR. MAURO: My perspective, and this is -- and Hans has a different perspective and I think I'd like to put before the subcommittee, is a blind review could take one of two forms. Let's say you pick the case. One approach would be SC&A -- here are all the raw data from DOE on this case regarding bioassay, regarding job description, regarding film badge, et cetera. In other words, the fundamental raw data. Here's your starting point. Reconstruct the doses using your own sensibilities and skill sets and resources, starting from scratch. Okay? And this way, we would do it the way we would do it. Okay?

The alternative is, no, don't do it that way. Do it the way NIOSH would do it, using all their workbooks, all their procedures, all of their tools that they -- that you believe they would use, which would test something a little different. Other words, in one way it's really do we come out in the same place if we were to do it our own way from the raw data, which would -- which would really answer one kind of question. The other approach would really test

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

MR. GRIFFON: Uh-huh.

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

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

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

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

MR. GRIFFON: Yeah.

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

MR. GRIFFON: Yeah.

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

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

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

MR. GRIFFON: Right.

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

MR. GRIFFON: Yeah, I --

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

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

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

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

MR. GRIFFON: Right.

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

MR. GRIFFON: Right.

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

MR. GRIFFON: No, I know.

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

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

want to caution you that --

MR. GRIFFON: Right.

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

MR. GRIFFON: Yeah. Wanda, go ahead.

MS. MUNN: No, go ahead, Larry.

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

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

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

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

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

MR. GRIFFON: Yeah.

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

MR. GRIFFON: Yeah, yeah.

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

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

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

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

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

DR. BEHLING: Yeah.

MR. GRIFFON: -- to get up.

DR. BEHLING: I think the validity of doing the first principle approach would also depend on the case selection. For instance --
MR. GRIFFON: Right.
DR. BEHLING: -- you wouldn't be able to select an AWE case --
MS. MUNN: Yeah.
DR. BEHLING: -- for which there is no data.
MS. MUNN: Yeah, no.
DR. BEHLING: You wouldn't be able to select a case for which coworker data is essential, because then --
MS. MUNN: Right.
DR. BEHLING: -- we would have to go to coworker data --
MS. MUNN: Yeah.
MR. GRIFFON: Right.
DR. BEHLING: -- in order to make that accommodation. So part of the credibility of a first principle approach would be based upon the type of case that is being selected.
MR. GRIFFON: I agree, the --
MS. MUNN: Yeah.
DR. BEHLING: There is a complete dataset of external/internal dosimetry, I think that's a

doable approach, but --

MR. GRIFFON: I agree, I --

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

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

DR. BEHLING: Yes.

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

MS. MUNN: Yeah, Brad has...

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

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

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

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

MR. GRIFFON: Right.

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

consider the -- the AWE situation in that regard.

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

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

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

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

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

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

MR. GRIFFON: Paul, did you...

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

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

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

MR. GRIFFON: Yeah.

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

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

MR. GRIFFON: Yeah.

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

MR. GRIFFON: Yeah.

DR. ZIEMER: -- lose sight of that.

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

MS. MUNN: Yeah, very.

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

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

MR. GRIFFON: Right.

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

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

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

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

MR. GRIFFON: Yeah.

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

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

MR. GRIFFON: Right.

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

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

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

MR. GRIFFON: Yeah.

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

MR. GRIFFON: Right.

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

MR. GRIFFON: Yeah.

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

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

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

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

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

MR. GRIFFON: Wanda?

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

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

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

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

DR. MAURO: (Off microphone) (Unintelligible)

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

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

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

MR. GRIFFON: Yeah.

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

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

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

MS. MUNN: It's a possibility.

MR. GRIFFON: Yeah. Anything else on blind reviews?

(No responses)

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

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

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

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

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

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

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

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

MR. GRIFFON: Yeah.

(Whereupon, Dr. Poston joined the group.)

MR. GRIFFON: All right?

DR. WADE: Okay.

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

DR. WADE: I will adjourn the subcommittee then --

MR. GRIFFON: Okay.

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

MS. MUNN: Five minutes.

MR. GRIFFON: Yeah. Subcommittee's adjourned. Thanks.

(Whereupon, the meeting was adjourned at 11:24 a.m.)

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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.

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STEVEN RAY GREEN, CCR

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