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ADVISORY BOARD ON

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DAY TWO

The verbatim transcript of the Meeting of the Advisory Board on Radiation and Worker Health held at the Westin Hotel, St. Louis, Missouri, on August 25, 2005.

C O N T E N T S

August 25, 2005

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MITULSKI, JIM
MOSS, JOAN & GIL
NUGENT, MARY, GAO
OLSEN, DOROTHY, MALLINCKRODT
PRESLEY, LOUISE S., WIFE OF ROBERT PRESLEY
RANSPOTT, CHRISTINE
RANSPOTT, JOHN
ROSENTHAL, JAMES, MALLINCKRODT
SAMPSON, BOB, GAO
SCHWENNESEN, CLARENCE, UNWW

SCHAEFFER, D. MICHAEL, SAIC
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P R O C E E D I N G S

(8:45 a.m.)

WELCOME AND OPENING COMMENTS

DR. ZIEMER: I'd like to call the meeting to order. Welcome to the 32nd meeting of the Advisory Board on Radiation Worker Health here in St. Louis, a town that seems to have become a second home for this Advisory Board. I would like to make a couple of the normal regular announcements and that is, first of all, to ask you to register your attendance in the registration book out in the foyer, if you've not already done so. Also, those members of the public who wish to address the Board in the public comment session later today, please sign up in the public comment book there in the foyer, as well.

There's a table that includes many of today's handouts, plus other related materials. It's out in the foyer. Please avail yourselves of those materials. Also for members of the public, I'd like to tell you that there are NIOSH personnel here to assist individuals who may have specific problems with individual claims. Those individuals are at one of the tables out here in the foyer. They will be

here all day today and through noon tomorrow. At our last meeting Board member Mike Gibson was unable to be with us. He was here by phone but was not able to be here because of serious illness of his father. And I'm sorry to report to the Board that subsequent to that meeting Mike's father passed away. And we extend our sympathy to Mike Gibson and his family.

For today's meeting Larry Elliott -- who heads the OCAS program at NIOSH -- is unable to be here due to a health problem. Roy DeHart -- Board member Roy DeHart is traveling overseas and not able to be with us.

Let me add one other footnote sort of to get us up-to-date on people sitting around the table here. Our court reporter, Ray Green, over here on my right, recently went to Vienna where he competed in what I will call the world Olympics of court reporting, competing with hundreds of people from all over the world, actually, and we're pleased to tell you that Ray came away with the silver medal -- top two in the world. Now Ray, if you're second, you've got to try harder. But we're very pleased and proud of Ray's accomplishments.

Now let me ask our Designated Federal Official, Lew Wade, if he has any additional comments as we get under way.

DR. WADE: Just some general comments. First a note to Ray, just because he has the silver medal, we won't pay him more in terms of his services to us.

MR. PRESLEY: And where are the minutes for the last meeting?

DR. WADE: But I bring you welcome -- Certainly I bring you welcome from Secretary Leavitt and the Director of CDC, Dr. Gerberding, and particularly John Howard. I thank you for your service and your coming here.

I bring to mind -- to your mind the fact that this was sort of a special meeting we called to deal with the issue of the Mallinckrodt petition. We have expanded the agenda for some other issues, but that really is the business we've come here to do and to complete. I'll speak to a little bit more about that on Friday when we begin our deliberations on the SEC petition.

But again I thank the Board members for their service and I thank all of you for coming and

participating in the people's business.

REPORTS FROM SUBCOMMITTEE

DR. ZIEMER: The first item on today's agenda deals with the outcomes of the subcommittee work from yesterday, and so I'd like to turn to that here initially. I'll take them a little bit out of order.

SELECTION OF 4TH ROUND OF 20 DOSE RECONSTRUCTIONS

I want to begin with the selection of the fourth round of 20 dose reconstructions. If you have in your booklet today -- and many of you were here for the subcommittee meeting yesterday. Not all of you were, but in the tab that's labeled 20 dose reconstructions there are a couple of tables, the first of which is the next set of 100 random cases that were provided to us to select from. And then there is a separate list which is a list of all completed cases that involve full dose estimations as opposed to overestimates or underestimates that come through the efficiency process. That list of all completed cases with full dose estimates may in fact include some of the random cases that are on the first list. The subcommittee is recommending that in the

next 20 cases the Board predominantly weight the selection in favor of cases that require full dose estimates and, where possible, cases where the probability of causation was in the range of 45 to 50 percent. Based on that, the subcommittee is recommending actually 16 cases from the full dose estimate list, and I'll identify those momentarily, plus four additional cases from the random selection list.

Now let me identify the cases for the Board and then we'll have -- and this -- this comes as a recommendation from the subcommittee so it constitutes a motion before the Board, and we have the opportunity either to modify the recommendation or to accept it as given. Here than are the recommendations of the subcommittee, and I'm beginning -- to help you identify these, I'm beginning on the list called all completed cases with full dose estimates, the first page of that. Everybody have that? Okay, here are the cases. And I'll use the digits on the right under the ID number. All the IDs begin with 2005-08, and then a number beginning from 101 on forward.

The first case is case 105, a probability of causation listed as 44.56. It's a liver cancer from Savannah River. I'm just going to pause on each one here and make sure that everyone has a chance to record those. If I go too fast, slow me down.

The second case is number 108, probability of causation 63.25 percent, a colon cancer from Nuclear Materials and Equipment Corporation -- or sometimes called NUMEC.

The third case is 110, 48.16 percent probability of causation, a colon cancer from Savannah River site.

Next, number 130 with 19.64 percent probability of causation, pancreatic cancer from Hanford.

Number 138, with 53.26 percent probability of causation, a colon cancer from Bridgeport Brass.

Proceeding to the second page, number 155 with a probability of causation of 47.33, male genitalia, case is from Savannah River.

Number 159, with a 29.52 percent POC, stomach cancer from Chapman Valve.

Number 176, 50.29 POC, respiratory, West Valley Demonstration Project.

On page three, number 201, a 50.81 POC, bladder cancer from Oak Ridge National Laboratory X-10.
Number 204, 23.02 POC, colon cancer from Y-12, Oak Ridge.
Number 216, 44.74 percent, thyroid cancer from Hanford.
On page four, number 234, 19.65 POC, bladder cancer from Mound.
Number 253, 33.80 POC, esophagus, Jessop Steel.
Number 256, a 50.00 POC, melanoma, skin, basal cell, Hanford.
On page five, number 262, a 39.19 POC, acute myeloid leukemia, Heppenstall Company.
And number 264, male genitalia, 27.85 percent, from the Y-12 plant, Oak Ridge.
Now that should be 16 cases from that list, and now going back to the straight random list, the following additional four cases. On the first page of the random list, number 010, 38.16 POC, non-melanoma skin, squamous cell, from Pinellas.
Number 011, 32.78, pancreas, from Feed Materials Production Center.
Number 017, with 50.55 POC, non-melanoma skin, basal cell, Nevada Test Site.

And finally number 035, with 26.62 POC, breast cancer, Los Alamos.

Those then constitute the 20 cases recommended by the subcommittee for dose reconstruction review by our contractor as the next 20 cases.

Now let me ask if there's any discussion or questions from members to this motion.

Yes, Leon Owens.

MR. OWENS: Dr. Ziemer, I was unable to attend the subcommittee meeting yesterday, but I notice that Lawrence Livermore -- you know, we met -- the Advisory Board met in that area and had very good attendance at our meetings and there was a lot of interest in that area. I'm just wondering, was there any thought to including a dose reconstruction from that facility?

DR. ZIEMER: I don't think it was intentionally excluded, it just -- I'm actually looking to see. We were trying to spread the things around a bit. I'm looking on the full dose estimation list to see if there were any -- and particularly in the range of interest up in -- where we could, up in the 45 --

DR. ANDERSON: I don't see any.

MR. GRIFFON: Yeah, there weren't any.
DR. ANDERSON: There aren't any.
DR. TOOHEY: Dr. Ziemer, can I comment on that?
DR. ZIEMER: Yes, Rich.
DR. TOOHEY: We don't have final approval on Livermore site profile yet, so the only Livermore cases that have been done, as best I know, are the complex-wide maximum dose estimates, which they've already looked at plenty of, so I think the feeling was stay away from too many more of those.
DR. ZIEMER: On the random list -- I don't know if any showed up even on the random list, 'cause there aren't that many Livermore ones done yet and that -- but they will. There certainly will be opportunity beyond (unintelligible), it's certainly a valid question and at some point as we proceed and start to fill in our matrix, we have to look at those that have not been sampled and pick them up. So -- and Mark, you have a comment on that?
MR. GRIFFON: I just wanted to say, Leon, we did -- out of the first 60 we did have two cases from Lawrence Livermore that were

overestimates, so I didn't think we wanted to -- you know, that would argue to wait for the best-estimate technique to review another case, yeah.

DR. ZIEMER: Thank you. Any other comments, questions?

(No responses)

Let me ask then if -- is the Board ready to vote on this motion to affirm the recommendation of the subcommittee?

MS. MUNN: Yes.

DR. ZIEMER: It appears that we're ready to vote. I'll then call the question.

All in favor of this recommendation, say aye?

(Affirmative responses)

Any opposed?

(No responses)

Any abstentions?

(No responses)

Just for clarification, Dr. Wade, individuals are not required to abstain because there are individuals from the facility they're associated with on this list. Is that not correct?

DR. WADE: Correct, they can make the general

decisions. They don't need to talk about specific assignment.

DR. ZIEMER: Thank you. The motion carries, and thank you. That takes care of that action. Then we had a discussion on future candidate site profiles.

DR. WADE: Do we want to assign Board members to these particular cases that we've just --

DR. ZIEMER: Oh, yes, we do have to do that. But let us complete the subcommittee recommendations, then we'll have to come back and we'll have teams for these 20 cases. So keep -- keep that before you there.

The next item was the discussion on candidate site profiles. There is a tab in your booklet called candidate site profiles, if you will turn to that. And here the subcommittee is making a recommendation that we identify for the contractor the next group of site profiles to be addressed. This presumably would be in the next year, and we -- we were proceeding on the basis that we would try to identify, for example, the next six. It turned out that we had the six, and then we added a couple of additional ones that are sort of in the queue,

as it were. Let me identify those for you. They are as follows -- well, let me also indicate, just for the record, site profiles that our contractor has completed. They are Hanford, INEL, NTS, Rocky Flats -- or almost completed. They're either completed or well along, let me use -- put it in those terms. Hanford, INEL, NTS, Rocky Flats, Savannah River, Y-12 --

DR. WADE: Bethlehem.

DR. ZIEMER: -- Bethlehem Steel, Mallinckrodt, Iowa Ammunition Plant and -- is that it?

MR. GRIFFON: Is that nine?

DR. WADE: I believe that was.

DR. ZIEMER: That's nine. Right, that's it. Okay, here are the recommendations for the next group. We have -- just take them in the order they are on the list. This is not necessarily the order in which they would be done, nor is it a priority order for the Board. It's simply the group. Fernald, Los Alamos National Lab -- LANL, Mound, X-10 Oak Ridge, Argonne West, Pinellas -- hang on a minute -- let me just backtrack a minute. The first four -- Fernald, Los Alamos, Mound and X-10 -- are in the first

group of six. Also in that group was Bridgeport Brass and -- I have Combustion Engineering. Is that --

MS. MUNN: I have Pinellas.

DR. WADE: I think it was Pinellas.

DR. ZIEMER: Oh, it was Pinellas, yes, yes. I did -- yes, Pinellas was six. Okay, my notes are... Then the two additional ones, I believe --

DR. WADE: Argonne West.

MS. MUNN: Argonne and LLNL.

DR. ZIEMER: Argonne West and --

MS. MUNN: Livermore.

DR. WADE: Livermore.

DR. ZIEMER: -- Lawrence Livermore. I had Combustion, then crossed it out. So to make sure the Chair has it correctly, Fernald, Los Alamos, Mound, X-10, Bridgeport and Pinellas are the six, and then the additional ones from the queue are Argonne West and Lawrence Livermore. That is the motion before the Board then, to confirm those six. Jim.

DR. MELIUS: Yeah, I wasn't at that part of the meeting. What is meant by the additional ones? I guess --

DR. ZIEMER: Well, we -- we said we were going to identify six. And for example, the contractor, after our -- after we determined what the workload is next year, there may be six. If there are more, or even if there aren't, the other two are sort of the next two in the queue.

DR. MELIUS: Okay. I understand.

DR. ZIEMER: And in that sense, there is a priority. Those first six are the first set -- the priority. The next two are in the queue on down the road as we get to it.

DR. WADE: Right, now in the closed -- it'll be a closed session today where the Board will decide upon the work for the contractor next year. We had asked the contractor for a proposal for six, and we have that in hand. You have that in your files. It's quite possible when you look at the totality of that, you might want to fund more or less site profile work. This way we would at least have an opportunity to look at another two, should the Board decide to go in that direction.

DR. MELIUS: Can someone explain to me just -- some of these appear to still be underway at

ORAU, or large sections of them are, and I'm trying to understand now how that affects their placement on this list. For example, Pinellas -- there seems to be large sections of that that are still under --

DR. ZIEMER: Yeah. Well, we heard from Rich yesterday that Pinellas is very close to completion, I believe. Is that correct, Rich -- Rich Toohey.

MS. MUNN: That's what he said.

DR. TOOHEY: Let me check my list. We have the X-ray and the environmental sections approved. The site description and internal and external dosimetry sections are in comment resolution. So yeah, it's reasonably close.

DR. MELIUS: How about LANL? Well, excuse me, not LANL, Lawrence Livermore?

DR. TOOHEY: Livermore? The site description is approved. X-ray, environmental, internal and external dose are in comment resolution, and the two asterisks mean we have provided our responses to OCAS -- comments back to OCAS, so they're doing the final review and approval on those. And may be another round of comments, which is not unusual.

DR. ZIEMER: I think our feeling, though --
DR. TOOHEY: They're close.
DR. ZIEMER: These are both pretty far along, and since they are in the trailing group, certainly by the time the first six were done, these two would certainly be ready.
DR. MELIUS: Yeah, but some of my concern is related to do we have them -- the placement in the trailing group versus the first six, since I didn't have the benefit of some of this information. Before you sit down, Dick, could you just brief me on the Bridgeport Brass and Combustion Engineering? According to the information I have, all of the Bridgeport Brass is -- you're working on, and nothing's being done on Combustion Engineering, according to this table.
DR. ZIEMER: Combustion is not on the list.
DR. MELIUS: Oh, okay.
DR. TOOHEY: Bridgeport Brass, again, is in final comment resolution. I think it's very close. We've given a revised copy back to OCAS for their approval. And yeah, you're right, Combustion Engineering isn't -- isn't on the current list.

DR. MELIUS: Okay. Does anybody have information on the number of active -- pending cases at these various facilities?

DR. TOOHEY: Unfortunately, not with me. I can get it for you via Blackberry if you want --

DR. MELIUS: Did the subcommittee consider that in terms of -- I mean it would seem to me that -- Lawrence Livermore, since we have a lot -- a lot pending. I don't know off the top of my head about Pinellas.

DR. WADE: There's an attach--

DR. TOOHEY: We've got Livermore.

DR. WADE: I think your -- is -- we have that material. I don't know if it's in the booklet, however. Stu?

DR. ZIEMER: While they're looking for that, a couple of these are on the list because of concerns about getting the work done while there are still people around, such as Mound. One of them, Pinellas, is very different from the other sites and that's the reason it shows up on this list.

DR. TOOHEY: Okay, we have 537 active cases from Livermore. And what were the other sites? I can get them and --

DR. MELIUS: Well, Pinellas.
DR. TOOHEY: Pinellas is on the order of 300, but I don't remember the exact number.
DR. MELIUS: Bridgeport?
DR. TOOHEY: Okay.
DR. MELIUS: There actually is a list of cases as of the end of December of '04 that in the attach-- the next tabs over under our site profile -- yeah.
DR. WADE: This material is in here.
DR. MELIUS: Yeah, okay. I mean I think that would reflect pretty closely -- at least relatively -- where we stand, so...
DR. TOOHEY: And if you -- okay, from December '04, which we were at about 18,000 cases at that point, we're pretty close to 20,000 now, so just --
DR. MELIUS: Yes.
DR. TOOHEY: -- I'd say roughly at ten percent.
DR. ZIEMER: Bridgeport is listed at 74 cases.
DR. MELIUS: Right.
DR. ZIEMER: Okay. Any additional questions, comments, amendments?
MR. MILLER: Dr. Ziemer?
DR. ZIEMER: Yes.

MR. MILLER: I realize that your comment period is going to follow after this discussion, but I just wondered if I could offer one comment on the AWE selection?

DR. ZIEMER: Please proceed.

MR. MILLER: This is Richard Miller. The Bridgeport Brass facility, which was one of the first extrusion facilities -- they had a giant press there and they basically extruded uranium and it's a straight natural uranium facility, and I -- I just -- in the course of looking over what's been approved, at least, and what's in the queue in terms of volume of cases, the Linde Ceramics plant, which is about 160 cases pending, is a very interesting and complex plant. It's not a traditional uranium extrusion or rolling processing plant like we've seen with Bethlehem and -- and some of the others. It actually resembles more of the complex issues we have at Mallinckrodt. They processed the African ores, as well, there, dealt with the pitchblendes. And -- and I just would suggest if, in terms of complexity and interest -- also 'cause there's some significant interest in that part of the state

at this facility -- it might be worth taking a look at it in lieu of Bridgeport Brass since Bridgeport Brass has had -- you know, it's -- it's a straight natural uranium plant and -- enough said.

DR. ZIEMER: Thank you, Richard. Jim?

DR. MELIUS: Yeah, I would also -- I would suggest that -- I mean that we move Lawrence Livermore up in the queue, so to speak, and move Pinellas down. Again, Lawrence Livermore I think -- there's more cases there, more pending cases there, more complicated facility, I think would be much more helpful to have a site profile review of that than -- I think that the Pinellas site is much more straightforward, but...

DR. ZIEMER: I think you're offering a motion to amend, that we in essence exchange the order of Pinellas and Lawrence Livermore, which would move Lawrence up into the first six and Pinellas into the next two.

DR. MELIUS: Uh-huh, yeah.

DR. ZIEMER: Is there a second to that?

(No responses)

No second?

MR. OWENS: I'll second it.
DR. ZIEMER: There is a second. Discussion on that move. I don't know whether it's friendly or not friendly, but just to make it. You've got some questions, Wanda?
MS. MUNN: My memory from our discussion yesterday is that Pinellas was chosen specifically because it was one of the two sites that's being rapidly closed down and will have very few knowledgeable personnel --
DR. ZIEMER: That was one of the reasons that Pinellas was -- that, plus it's a very different site -- primarily a tritium site.
MR. PRESLEY: Right.
DR. ZIEMER: Robert Presley.
MR. PRESLEY: That's exactly right, plus the fact that it's -- if we don't get it now it's going to be hard to find some people down there to even talk to about what went on down there. Livermore --
DR. ZIEMER: I guess you're speaking against the motion.
MR. PRESLEY: I'm speaking against the motion.
DR. ZIEMER: Any others?
DR. MELIUS: I would offer a -- well, let's

deal with this one first.

DR. ZIEMER: Any other comments? Let's vote on this amendment. If you vote yes, you're voting to move on Lawrence Livermore up and Pinellas back into that last group of two.

All in favor, aye?

(Affirmative responses)

Any opposed?

(Negative responses)

I'll declare that the -- opposed, no. I'll declare the no's have it and that the motion fails.

Okay, Jim, you have another comment?

DR. MELIUS: Yeah, I would like to offer another motion which is that we move the Linde -- replace Bridgeport Brass with Linde site.

DR. ZIEMER: Motion to replace Bridgeport with Linde. Is there a second to that?

MR. GRIFFON: Second.

DR. ZIEMER: Now discussion.

DR. MELIUS: Yeah. I would just like to point out in some of the meetings we've had out in -- to deal with -- actually to deal with the Bethlehem site, there have been representatives there from Linde and there is a lot of concern

about the site. As Richard Miller pointed out, it's a complex site and I think it's going to be controversial when we deal with it and I think it would be helpful to have a site profile review conducted, the sooner the better -- number of cases and also given the complexity of the site.

DR. ZIEMER: Thank you. Other comments, pro or con? Anyone wish to speak against the motion?

(No responses)

If not, we're ready to vote. Wanda?

MS. MUNN: I guess I would speak against the motion simply because this was the discussion -- not this specific discussion and of course we didn't have the benefit of Mr. Miller's input, but this was the discussion that took place in our subcommittee, and I feel that if we are going to make these decisions -- obviously it's the full Board's prerogative to do so, but the purpose in our subcommittee meeting is to try to iron these things out and we did discuss this matter earlier.

DR. ZIEMER: Thank you. Anyone else wish to speak for the motion or against? Jim.

DR. MELIUS: Yeah, I would just point out that

-- again, not all of us were at the subcommittee meeting and I'm trying to -- I'm also looking for the rationale. And in the case of Lawrence Livermore and Pinellas, you know, Bob provided a rationale which I hadn't -- hadn't heard before and understand and -- do that. I -- again, in the case of Linde, I'm somewhat -- I mean I think I would prefer -- I am obviously supporting my motion, but at the same time if there's a strong count reason to it other than procedural, then I'm willing to listen to that.

DR. ZIEMER: Mark.

MR. GRIFFON: I mean I think, having been the one to offer Bridgeport in the subcommittee -- I mean it was really based on my -- I didn't have the numbers in front of me and I was -- I was under the belief that there were quite a few cases there. That was part of my rationale. But I'm persuaded by the additional information that Linde's probably, you know, just as good to do. And I don't think we should skip Bridgeport Brass, but I think Linde can move up in the queue. I don't have a problem with it is what I'm saying.

DR. ZIEMER: I would point out that Linde has more than twice as many cases as Bridgeport, if that's of interest to the -- to the Board. Are you ready to vote on this amendment? If you vote yes you are -- you are voting to replace Bridgeport on the list with Linde Ceramics.

All in favor, say yes.

(Affirmative responses)

Okay -- caught you off guard, didn't I? Any no's?

(No responses)

Okay, the motion carries, so the amendment -- or the motion before us now is the original list, except for the replacement of Bridgeport by Linde.

Is there any further discussion?

(No responses)

Are you ready to vote then on the main motion? It appears that we're ready to vote on the main motion.

All in favor say aye.

(Affirmative responses)

Any opposed, no.

(No responses)

Any abstentions?

(No responses)

Motion carries. Thank you very much.

DR. WADE: Just again to put on our list of things to do before we finish, we would need some order to -- of these so we can get the contractor working on several immediately, so that's something we need to do.

DR. ZIEMER: Do we need to do that here now?

DR. MELIUS: I would think it would be better to do in the session when we talk about the actual contract, I think -- because the order may change, depending on the scope of the...

DR. ZIEMER: Well, what I'm really asking -- let me rephrase it. I'm asking whether we shouldn't -- it seems to me we should do it in open session once we establish how many cases -- is there any reason we have to do -- it seems to me we're almost obligated to make that selection in open session so that there's a public record of why we chose different sites.

DR. WADE: We can do it after the closed session, if that's your preference. We could do it --

DR. ZIEMER: Or -- or we can -- we can order these and then once the priority's established

on however many we select and the work order establishes it. It doesn't seem to me it's a closed-door issue.

DR. MELIUS: I agree with that part of it. I would just -- I think I'd feel a little bit more comfortable doing it after understood the scope of our contract and -- the order might be different depending on how many we could fit in.

DR. ZIEMER: Right, exactly, and we can wait until tomorrow to do that.

DR. MELIUS: Yeah, yeah.

DR. WADE: I just wanted to get it on the...

DR. ZIEMER: We do need to give the contractor the priority order or the rank.

DR. MELIUS: And just that -- I think we also -- there may be some personnel issues with the contractor that would also affect the order in terms of who they have available in terms of skill sets and so forth.

DR. ZIEMER: Right, and they may have input for us on that, as well.

DR. WADE: We might ask John Mauro to begin to think about that and inform our discussion possibly today or tomorrow.

DR. ZIEMER: We had a discussion on the path forward on the Bethlehem site profile. I think -- I know that Dr. Melius has a -- I think has a phone call at 9:30 and he also has the motion. Perhaps what we can do in the meantime is to go ahead and we can do our team assignments for the 20 cases. Now going to propose that insofar as possible we maintain the same teams that we had before, and we'll just move in order down through these and if there's any conflicts then we will just skip that team and move on ahead. So we have 20 cases --

DR. WADE: Team assignments.

DR. ZIEMER: Yeah, we're going to do the 20 team assignments on the cases. Do you remember who your team members are?

DR. ANDERSON: Absolutely.

MR. PRESLEY: Yes, sir.

DR. ZIEMER: Do you remember your team num--

DR. ANDERSON: This is the barbecue team.

DR. ZIEMER: -- your team number?

DR. ANDERSON: I don't know.

DR. ZIEMER: We have a team of Presley and Anderson, which today will be team one. Mark,

who are you with?

MR. GRIFFON: With Tony.

DR. ZIEMER: Okay, we need a new person for Mark. Let me get the other ones here first. Okay, let's see, Mike, you and I are on a team, so let's -- team two will be Gibson and Ziemer. Gen Roessler?

DR. ROESSLER: And Roy DeHart.

DR. ZIEMER: Huh?

DR. ROESSLER: Roy.

DR. ZIEMER: Roy DeHart, Roessler and DeHart. Okay. And Leon, you and Wanda, that'll be team four, Owens and Munn.

Was Melius with Espinosa, do we know?

DR. ROESSLER: That should be it.

DR. ZIEMER: Melius/Espinosa. Do any of you want to also be on the group with Mark? Well, that's not a good way -- who is willing to sacrifice?

DR. ROESSLER: I'll be with Mark.

MR. OWENS: We will.

DR. ROESSLER: Yeah.

DR. ZIEMER: Okay. Both of you?

MR. OWENS: It doesn't matter. He can be with us -- our group.

DR. ROESSLER: Yes.
DR. WADE: I think -- I think Paul is just thinking of a sixth team.
DR. ZIEMER: Yeah, team six. One of you -- you want to do it, Gen, or Leon?
DR. WADE: This is double duty.
MR. OWENS: Yeah, I'll -- I'll do it with Mark.
DR. ZIEMER: So you'll have an extra couple of cases.
We'll start with the full dose estimation cases --
DR. WADE: Keep in mind your conflicts as we go through this.
DR. ZIEMER: Now each group is going to end up with three cases and one group will have an extra one. Team one, Anderson and Presley.
DR. ANDERSON: Should we take the first three?
MR. PRESLEY: We'll take the first three.
DR. ZIEMER: You can take the first three?
MR. PRESLEY: I don't see any problems there.
DR. ZIEMER: If you have no problems, let's do -- that's 105, 108, and 111.
MR. PRESLEY: 111 or 110?
DR. ZIEMER: I'm sorry, 110. Okay, team two, Gibson and Ziemer, will be 130, 138, and 145.

Okay, Mike?

MS. MUNN: 155.

DR. ZIEMER: I'm sorry, 155, thank you -- 130, 138 and 155 for Gibson/Ziemer.

Okay, Roessler and DeHart, 159, 176 and 201.

DR. ROESSLER: That looks okay.

DR. ZIEMER: Okay. Owens/Munn, 204 -- I'm sorry -- yes, 204 --

MS. MUNN: I can't do 216.

DR. ZIEMER: Okay, skip 216 and look at 234 and 253.

MS. MUNN: Fine.

DR. ZIEMER: Then Melius/Espinosa will pick up 216, 256 and 262.

Griffon/Owens --

MS. MUNN: 264.

DR. ZIEMER: -- 264. I would like to have Mark involved in a full slate of these. Can a couple of you offer to -- I'm going to ask team one, will you lend Mark one of yours?

DR. ANDERSON: Sure.

DR. ZIEMER: Okay, I'm going to move 110 over and we'll pick up another one.

MS. MUNN: Are you going on to the other four?

DR. ZIEMER: We will in a moment. I'm making -

- I'm just moving one here. I'm moving 110 from Anderson/Presley to Griffon/Owens. I want to give Mark the opportunity to review three of the full dose cases. And then -- I don't know, how about -- let me pick up 262 from Melius/Owen (sic) and move that over there, if that's agreeable.

MR. GRIFFON: That's fine with me.

DR. ZIEMER: Okay. Now let's go back to the other cases.

MR. PRESLEY: Henry and I have no problem with 110 -- or 010.

(Whereupon, Mr. Espinosa joined the Board at the table.)

DR. ZIEMER: Okay. Then 0110 will go to Anderson/Presley. We'll put -- 105 we'll give to Melius/Espinosa.

UNIDENTIFIED: (Off microphone) 0105?

DR. ZIEMER: It's just -- I'm sorry. How many zeroes -- I'm looking at the wrong page here.

DR. WADE: The first one was just 10.

DR. ZIEMER: 0010. Then 011 we'll give to Melius/Espinosa.

Now we have two additional cases. I don't want to give those to Owens 'cause he's already got

six.

DR. ROESSLER: We'll take one. We'll take 10--017.

DR. ZIEMER: Okay, Roessler will take 17 -- 017?

DR. ROESSLER: Uh-huh, and DeHart.

DR. ZIEMER: That's Roessler/DeHart. And then --

DR. ANDERSON: We'll take the next one. I think --

MR. PRESLEY: I can't take (unintelligible).

DR. ZIEMER: Okay, then Anders--

DR. ANDERSON: You can't? Okay -- no, he can't.

MR. PRESLEY: No, I can't.

DR. ZIEMER: No, he can't. We have 035, maybe we can give that to Munn.

DR. ROESSLER: Yeah. But then that gives it to Leon, too, and he's -- he's on --

DR. ZIEMER: Oh, I'm sorry. Okay. Yeah, let's -- let's give that to Mike and Ziemer, Gibson/Ziemer, 035.

Now that covers our cases. Did you get those to --

DR. WADE: I did.

DR. ZIEMER: -- make sure we have those? And it looks like, John -- you guys are keeping track of this, too, so --

DR. MAURO: (Off microphone) (Unintelligible)

DR. ZIEMER: -- yeah, so you know who the principals are in this.

DR. WADE: For the record, I'll have legal counsel look at the conflict statements and this decision just to -- in a calm moment and make sure we're okay. I think we are, but for the record, we'll do that.

(Pause)

DISCUSSION OF CANDIDATE SITE PROFILES FOR REVIEW BY SC&A

DR. ZIEMER: Okay. Another item from the subcommittee had to do with dealing with the path forward on the procedures review. We had a motion basically asking that our -- asking that NIOSH proceed to respond to the SC&A report to identify those procedures which are still in effect -- 'cause some are no longer used -- and in any event to begin to develop their responses to the SC&A report procedures. I don't have the exact wording of the motion. In fact -- Mark, was it your -- did you make the motion? I think we would have to go back

to the recorded minutes to get the exact wording, but the sense of the motion is to ask NIOSH to proceed with their comments on the SC&A report on the procedures review.

MR. GRIFFON: In the normal resolution process.

DR. ZIEMER: Right, and then there would be a comment resolution opportunity. So that is the sense of the motion, if the Board is willing to take action. That comes as a motion before us.

DR. WADE: Could I add to that?

DR. ZIEMER: Yes.

DR. WADE: I do think that first there was this bifurcation that you wanted to take place, and that was to look at the items that were on the matrix and look at those that were still procedures to be used --

MS. MUNN: Yes.

DR. WADE: -- and then proceed with the resolution for those procedures. For those procedures that have now been superseded by workbooks, I don't think you were recommending that NIOSH respond to those procedures.

MR. GRIFFON: Right --

DR. ZIEMER: Well --

MR. GRIFFON: -- just to indicate that, right.

DR. ZIEMER: To indicate which of those, and then we would be able to determine in fact whether we wanted them to go back, because there were dose reconstructions that may have been done under those procedures, and insofar as that might have affected previous actions, the Board may wish to have something done. But at least you make the determination which procedures are still in effect and then do the resolution on those. So that is the sense of the motion.

Are you willing to take formal action now based on the sense of that motion? Okay. Any discussion?

Okay, then I'll call the question.

All in favor of that process for moving forward on the procedures review process, please say aye.

(Affirmative responses)

Any opposed?

(No responses)

Any abstentions?

(No responses)

The motion carries.

DR. WADE: I would like to just have a brief

clarifying discussion so we're sure that our instructions are clear to NIOSH. So my understanding is NIOSH is to take the entire array of items that have been raised that -- all the items in that matrix -- and identify those that are still in place and then identify those that are not in place. For those that are in place, to proceed with their comments. For those not in place, to bring that back to the Board and the Board will then decide how to proceed.

DR. ZIEMER: Yeah.

MR. GRIFFON: Yeah, that's exactly it except for one -- first step I think is that SC&A has to complete the matrix. What we've been provided, as I said, was a partial -- they didn't quite get through the whole --

DR. ZIEMER: Yeah, that (unintelligible) --

MR. GRIFFON: They're basically --

DR. ZIEMER: -- (unintelligible) the motion. It was just understood that SC&A will give the full matrix to NIOSH to work with.

MR. GRIFFON: Right.

DR. ZIEMER: That's almost done, I think. We had most of the items on the matrix already.

MR. GRIFFON: And the matrix represents -- I mean it's going to represent all the findings in the binder -- task three that we got. They're just trying to slow it down to make it easier for discussion.

DR. WADE: Okay, could we have a brief discussion of time and timing, just so that we -- we -- we have expectations and we can see the people meet those expectations. So I guess the first step is SC&A's completion of the elements.

DR. MAURO: We're probably about two weeks away of having the complete matrix in your hands for you to work with. Bear in mind the matrix will have a walk-back to the report, so it really represents a tool to facilitate the process, notwithstanding reading the report itself. The same information is there, except in an abbreviated form in the matrix.

DR. ZIEMER: Yeah, the matrix is just a tool to help track the issues.

DR. WADE: Okay, and then once that's done and in NIOSH's hands, then NIOSH needs to undertake its activity, which is to identify those that are still in place and used, identify those are

not in place, and then respond for those that are in place. Dr. Hinnefeld, what say you?

MR. HINNEFELD: Dr. Hinnefeld is my brother and my sister. I'm Stu. Probably some four weeks' worth of effort, I would think, to provide some response to all this, given the fact that we don't have to wait two weeks to start. You know, we have --

DR. ZIEMER: Right, you have the report --

MR. HINNEFELD: -- a pretty long list --

DR. ZIEMER: Right.

MR. HINNEFELD: We have the report. We have a pretty long list of findings already nicely summarized. The matrix is very helpful.

DR. ZIEMER: It may be just a matter of plugging it into the matrix.

MR. HINNEFELD: Right. I would suspect that it may be on the order of about four weeks.

DR. WADE: Four weeks from now.

MR. HINNEFELD: Yes.

DR. ZIEMER: Okay. Which puts us in the situation to have this brought to our next Board meeting.

MR. HINNEFELD: Now we won't have gone through -- I don't think we'll be through that six-step

process at that point. Our normal -- normal process is for us to provide our initial response back in writing, and then to have these convergence meetings in terms of making sure we both are understanding what the other one is saying. And then our response might be changed in some fashion based on -- on that discussion. So if we're talking about being at a sort of a convergent -- you know, having a convergent opinion of responding to a -- a full understanding of what the comment was, I think we're going to go some period beyond that. And then that will depend upon our respective schedules and being able to -- to get together and either talk in person or a conference call or whatever.

DR. WADE: I'd like to get the sense of the Board as to -- I mean we're looking at a meeting in mid-October, which is six weeks from now. And you've heard the two weeks and the four weeks. So what would be your pleasure?

DR. ZIEMER: Mark?

MR. GRIFFON: I mean I think that we should -- I think we have another workgroup item that we talked about yesterday, potentially, and I

think we should try to schedule a workgroup meeting in four or four and a half or five weeks, you know, to have them bring it back to that. It's much easier to go through this laundry list of findings in a workgroup setting and iron out the details, and then come back to the full Board meeting in October. I'd propose that we do that.

DR. WADE: Okay, so the expectation would be SC&A completes its matrix in two weeks. In four weeks from now NIOSH has made its first response. Soon after that there'll be a workgroup meeting --

DR. ZIEMER: It'll have to be a workgroup with the two -- with NIOSH and SC&A to resolve issues.

DR. WADE: And then do you have expectations of what the full Board would see in mid-October and when they would see it before that meeting, or do you just want to leave that to the workgroup process at this point?

DR. ZIEMER: Appears to me it's going to depend on where the workgroup ends up at that meeting. They may or may not have --

MR. GRIFFON: Yeah.

DR. ZIEMER: I don't -- I don't think we want to end up with something that's sort of half-baked that the Board can't deal with, so if we're not pretty much at closure, then we need to extend it.

MR. GRIFFON: Yeah, it might -- you know, if we come to resolution on everything, we might have a full report back, but I kind of doubt it. It might just be an update -- a progress update and -- and we'll (unintelligible) --

DR. WADE: So we're looking at a progress update at the next Board meeting -- or more, depending upon the workgroup action, that workgroup action likely to take place in early October. The only thing left now is who is the workgroup or who are the workgroup members.

DR. ZIEMER: And one thing about the -- this process is little different from the others in that it's pretty much internal -- that is, as we come to closure on -- item by item. For example, if -- let's say NIOSH says yeah, that was a good comment; we need to change this procedure. They can do that. We don't -- even without the Board saying anything. Or the Board may take specific action, but it's --

it's not like a site profile where we are trying to meet some deadline in terms of particular cases. We -- procedures are going to continue to be developed and modified and so on. And as we look forward, we have a similar process as we come to the workbooks that probably need to be reviewed. John, you have additional comments?

DR. MAURO: Yes. As we recall, when we went through this closeout process on the task four cases, which was a very effective process, the relationsh-- the exchange between NIOSH and SC&A was very mature, to the point where -- as you recall -- it was really a matter of assigning a number, and this -- but that was an important point. In other words, it became clear that it's not just yes/no, resolved/unresolved. There are a lot of different categories that we placed each finding into. It may have been -- I think numbers one through seven --

DR. ZIEMER: Yes.

DR. MAURO: -- on that order, which was very well tailored to the audits of the cases. Now we're dealing with the procedures, which is a

different frame of reference, so to speak. I believe I would -- I would suggest that as we work through the comment resolution process we take advantage of that process to also begin to construct a scorecard. In other words, a closeout assignment number that will serve the purpose of the Board so that when we do come before the full Board to go through the closeout session, we'll have a clear vision of what -- the scoring system that we'll use for (unintelligible).

DR. ZIEMER: Right, and this may be similar to the one we had before, you know, where NIOSH agrees and has made this change; SC&A agrees and withdraws the comment; you agree to disagree -- whatever it may be, there would be a number of those. That's a good point. Thank you. Any other --

DR. WADE: At some point I'll need to know who the workgroup members are, and --

DR. ZIEMER: I think we can go ahead and appoint a workgroup right away. One thing is if we have the same workgroup every time, it starts no longer looking like a workgroup. It looks more like a permanent subcommittee. But

nonetheless, the Chair is willing to ask for volunteers for this workgroup. I would like to have four individuals involved --

MR. GRIFFON: Well, I --

DR. ZIEMER: -- and Mark, if you're agreeable, I'd like you to chair it.

MR. GRIFFON: I wonder should be a subcommittee, though. That's another question.

DR. ZIEMER: It may be that we would have it become a more permanent subcommittee with this specified membership. And in fact, frankly, I'm finding the current subcommittee structure a little bit awkward where everybody is a member of the subcommittee.

DR. WADE: Just considerations, if it's a subcommittee, then it's a public meeting. We'll need a task and a charter for the subcommittee.

MS. MUNN: It was a public meeting the last time.

MR. GRIFFON: Yeah, it was public, and the workgroup meetings are --

DR. ZIEMER: The workgroup is ad hoc to do a specific job at a specific time and that's it. And what I'm saying is if it's always the same

group of people it starts to look like it's a permanent group, so -- but nonetheless, the Chair -- Mark, if you're willing to chair it, I would like to ask you to be chair and I'd like three other volunteers.

MS. MUNN: I'd like to follow up, as long as they don't get --

DR. ZIEMER: Wanda, Bob Presley and Mike. And an alternate, Rich Espinosa. Is that agreeable? Any objections to that? The Chair has the prerogative but certainly if others object, I'd be willing to change that. Okay, that will constitute the workgroup then. Probably will meet in Cincinnati in approximately a month, but the date will be worked out between the staff as they reach the point of being able to handle -- or the point where the comment materials are ready.

DR. WADE: Right. Now again, by FACA rule, a workgroup does not have to be a public meeting. The last time we decided to hold the workgroup as a public meeting because of the interest surrounding the Mallinckrodt issue. Does the Board have instruction for me as to whether or not they'd like to see this workgroup meeting

be a public meeting or follow the more traditional approach which would be it would not be a public meeting?

DR. ZIEMER: Any Board members have comments? Yes, Wanda.

MS. MUNN: I guess my sense is that may vary depending upon the topics that are being addressed. These topics seemed to me to be primarily internal procedural issues and highly technical and would not be, it seems to me, of the same kind of interest as the previous working group might have been.

MR. GRIFFON: Yeah, I -- I agree with that. I think it's on an item by item basis. But for this one -- I think that for all of them we should transcribe them still and I think that would be the intent. But I don't think this one would -- I think we would be more successful getting the work done --

DR. ZIEMER: Leon?

MR. GRIFFON: -- to keep it small and not public.

MR. OWENS: Dr. Ziemer, I appreciate the comments that were made, but I think that having the meetings open would continue to

allow the public, those that are interested, to have access and also ensure that our overall process is transparent.

DR. ZIEMER: It is also possible to allow the meeting to be open without having the formal subcommittee structure, that -- that in fact the meeting is open; anyone is welcome to attend. And we could make it -- the information available to sort of the constituents. There is sort of a master list, I guess, of people we notify -- sort of aside from the *Federal Register* process, those that we know have ongoing interest, but that -- Richard, you have a comment?

MR. ESPINOSA: Kind of, just (unintelligible) all of what you're saying. Does -- if it's going to be public does the same structure have to be done, notifications and what-not?

DR. WADE: Well, technically if it's a working group meeting we could go about three ways of letting people know. We could do a *Federal Register* notice, which is required of subcommittee and Board meetings, not of working group meetings. We could post it on the NIOSH web site. We could send a notice to that

mailing list we have of concerned and interested people. We could do any combination of those.

MR. ESPINOSA: I would like to see the meeting go public. And if it does, I don't see the -- why (unintelligible) should go into a subcommittee rather than a working group if it's going to be public, but -- split hairs one way or another.

DR. ZIEMER: One of the sort of practical issues with doing formal subcommittee is that we do have to develop and approve a charter. That has to go up through the NIOSH and HHS process and it gets a little extended. We can have a workgroup and still have it fully open. And Leon, in terms of your suggestion, I know, don't know if -- are you thinking *Federal Register* notice or that -- just the less extensive but probably as effective list of notifications?

MR. OWENS: I'm thinking the less extensive but probably just as effective list, and possibly a note on the NIOSH web page. I think that would suffice.

MS. MUNN: I think so, too.

DR. ZIEMER: Do you agree with that, Rich? Rich says he agrees with that.
So Board members, if that's agreeable, we will identify a meeting as being open to any interested parties, even though it is not a regular *Federal Register* type of subcommittee. Okay? And --
DR. ANDERSON: Would that -- would that mean you'd have a dial-in that people would be able to call in to listen, or not?
DR. ZIEMER: This is not a full meeting of the Board at all.
DR. WADE: It is not. I wouldn't do that normally.
DR. ANDERSON: No, I was just thinking that from the public perspective to say they can attend in person --
MR. GRIFFON: Right.
DR. ANDERSON: -- the likelihood of people coming much less than if somebody's curious and interested, to sit on a phone call. If you're not going to have it --
DR. ZIEMER: That's very difficult, though, in a workgroup where you --
DR. ANDERSON: No, I wasn't -- the workgroup

would be there. I'm just raising the question --

DR. ZIEMER: It's very difficult for somebody to track along -- 'cause they'll have papers and so on that they're working from. Robert?

MR. PRESLEY: Like to speak against a phone call, and the reason being if you all remember the last two or three that we've had, we've had problems on the telephone calls with people with a -- I hate to say it -- with babies and dogs and flushing commodes and stuff like that, and it's really hard to get any work done when you've got stuff like that going on.

DR. ZIEMER: Leon?

MR. OWENS: Dr. Ziemer and Dr. Wade, I would ask, could the minutes -- or could the meeting have minutes that were transcribed and also be available at our upcoming Board meetings?

DR. WADE: Could I repeat what I think my instructions are?

DR. ZIEMER: Yes.

DR. WADE: We'll have a workgroup meeting. The work group will be chaired by Mark, consisting of Wanda, Mike, Robert, with Richard as an

alternate. We're aiming for early in October. The purpose of the workgroup is to look at the process of comment resolution and closure between NIOSH and SC&A on the procedures review, the task three report. The workgroup meeting will be open to the public. It will be noticed on the NIOSH web site. We will send out information about the meeting to our mailing list of interested people. We will keep a transcript of the meeting. We will not have a public comment period at the meeting, but the public will be invited. That's the model we followed before. Is that the sense of the Board?

MS. MUNN: Uh-huh, yes.

DR. ZIEMER: Is that -- everybody agree? Thank you very much.

Okay, we're going to take a brief recess. It's close to 10:00 o'clock. Take a 15-minute recess and then we'll reconvene and we can continue our discussions.

(Whereupon, a recess was taken from 9:55 a.m. to 10:20 a.m.)

BETHLEHEM SITE PROFILE

DR. ZIEMER: We're ready to proceed. We have

one additional item that comes out of the subcommittee work from yesterday, and that item has to do with the Bethlehem Steel profile. The Bethlehem Steel site profile was acted on by this Board in February. There has been a revision and we have a motion dealing with the action to be taken by our contractor relative to the revision and to the issues that were outstanding. Jim Melius made the motion at the subcommittee meeting. And since I don't have the wording here, I would ask Jim if he could somewhat reproduce the words of his motion. They may not be exactly as they appear on the transcript, but they will at least be the motion in principle. So Jim, if you can, give us today's version of yesterday's motion.

DR. MELIUS: Okay. The motion would be that we ask our subcontractor -- excuse me, our contractor, SC&A, to review the draft revised site profile from -- that NIOSH has recently produced, paying particular attention to the items that we had highlighted in our original comments to NIOSH based on SC&A's review of the earlier site profile.

DR. ZIEMER: Okay. That is the motion, and the

intent would be that there would be a report back to us from SC&A on their findings --

DR. MELIUS: At our next meeting, correct.

DR. ZIEMER: -- at our next meeting.

MR. ESPINOSA: Second the motion.

DR. ZIEMER: And the motion actually doesn't require a second, although the record can show that. It does come as a recommendation from the subcommittee.

Let me ask if there are any comments now, or questions on that.

(No responses)

Okay. You're ready to vote then?

MS. MUNN: Uh-huh.

DR. ZIEMER: All in favor of the motion, say aye?

(Affirmative responses)

Are there any opposed?

(No responses)

Are there any abstentions?

(No responses)

Okay, the motion carries and we will proceed then to have the revision of the Bethlehem site profile reviewed by SC&A and a subsequent report will come to us on that.

Again, we need to get some information on timing. What is the expectation -- John, can you comment as to what you think might be the timing on that?

DR. MAURO: We will start immediately, and I expect we will have a letter report in your hands and NIOSH's hands probably three weeks from now.

DR. ZIEMER: In possibly three weeks we'll have comments. If there are issues -- I don't know if the motion included proceeding with the resolution process. Was that part of the intent of the motion?

DR. MELIUS: I -- yes, it was, if necessary.

DR. ZIEMER: If necessary -- if there were issues raised where we needed to get feedback from NIOSH, we would feed that -- those comments to them and might proceed with the resolution process. The only thing promised at this point is the report.

DR. MAURO: Yeah, and right now the way I look at it is in three weeks you all will have our letter report, and then the extended review process would begin from there, which I suspect, given the limited number of issues

that are on the table, would be something that would be able to be accomplished relatively quickly. And we will either be in agreement or agree to disagree.

DR. ZIEMER: Yes.

DR. MAURO: And we will be at that point very quickly.

DR. ZIEMER: So there's a good chance that we would have something to act on at the next Board meeting.

DR. MAURO: Correct.

DR. WADE: Could I just explore a little bit what happens after three weeks, just so we have the wherewithal to do what we need to do. So if there are issues then that need to be discussed between SC&A and NIOSH after we receive the letter report, is it the sense of the Board that there would be discussions that would take place between the parties, notifying Board members of those discussions, allowing Board members to participate in those discussions? How do we want to see that next possible step take place?

DR. ZIEMER: It would be my understanding that that is exactly what would happen. If there

are -- particularly substantive issues, that they would have a resolution process similar to what we used before. Although it didn't appear that there was much -- many of the big issues on Bethlehem have already been resolved, and those were enumerated and identified in our February action where we -- we had the five specific motions where we dealt with those. So -- but in the event that there are major issues or differences, we would have to have that resolution process.

DR. WADE: I think the way we worded it before, there could be discussion between the two parties clarifying issues. But if there was anything substantive to be discussed, then we would notify Board members -- Board members could participate.

DR. ZIEMER: Jim.

DR. MELIUS: And could we also have a process similar that we had with Mallinckrodt where we also notify some of the key interested citizens, particularly Mr. Walker and his group? I think that would sort of facilitate communications rather than have them find out about it all at -- you know, at a later point

in time.

DR. WADE: So as I understand the discussion, if there -- if there were to be simply clarifying discussions between the parties after we receive the letter report from SC&A, we would allow those to take place between NIOSH and SC&A. Anything substantial that needs to be discussed would be discussed in a call where we would notify the Board members and notify and allow participation of Mr. Walker and others or --

DR. ZIEMER: That would be analogous to what we did with Mallinckrodt --

DR. MELIUS: Yeah, yeah.

DR. ZIEMER: -- so it seems to -- it seems to me it would be fair to keep Mr. Walker --

DR. MELIUS: Yeah.

DR. ZIEMER: -- apprised and he kind of heads up that group, I think.

DR. MELIUS: Yeah.

DR. WADE: We would contact him, and that would be --

DR. MELIUS: I think contact him -- now if he wants another individual be on the call, I don't think that's an issue. Again, those are

not -- we don't need casts of hundreds, but...

DR. ZIEMER: Yeah. John?

DR. MAURO: One additional question. During the three-week period as we read through -- it's not a large document, I think it's about 37 pages -- we may have certain clarification points where we're going to need a little help to understand exactly what NIOSH's position is on a given matter. To what degree are we free to call Jim and get clarification on do we properly understand this?

DR. ZIEMER: I would suggest this, and Board members can comment, that you do something similar to what was done with Jim and Arjun where -- keep us abreast of any exchanges. You can keep me abreast. I will pass any of that along to the Board so if -- if there's an ongoing commentary, let's say by e-mail, that we're simply kept apprised of that. Would that be agreeable, Board members?

MS. MUNN: Yes.

DR. MELIUS: Yeah.

DR. WADE: And if there are substantial issues to be addressed on a call, we'll transcribe that call and make the materials available.

DR. ZIEMER: Jim, did you have an additional comment?

DR. MELIUS: No, I'm -- I'm sorry.

DR. ZIEMER: Okay, any further comments on the -- any of those issues?

(No responses)

REPORT FROM SUBCOMMITTEE:

MALLINCKRODT SITE PROFILE REVIEW

Okay. The only other thing that we dealt with in the subcommittee session yesterday was a review of the six priority issues dealing with the Mallinckrodt site profile. We have scheduled that discussion for this afternoon, but it appears to me, if there's no objection, we can begin to receive that information. What we will have in that regard, we'll have -- we'll have a presentation by NIOSH on their approach to those six priority issues, a presentation by SC&A on their review of those same six items, and then further discussion on those. We would not be discussing -- the petition itself does not come under our schedule till tomorrow, but this is discussion of the six priority issues dealing with the site profile, Mallinckrodt site profile. And it appears to me that we do have time to begin

that discussion yet this morning. Is there any objection to proceeding with that?

DR. WADE: I mean I have no objection to that, but I would like to again put on our agenda to follow up -- that flowing out of our subcommittee discussions there were issues regarding, for example, the timing of the review of the Savannah River site profile. All of that leads to the need for this Board to start to look at sequencing and scheduling of things, and I think we need to reserve some time to talk about that. It doesn't have to be now.

DR. ZIEMER: Right. And as far as scheduling and prioritizing the site profiles, I think there was expressed a desire to do that after we have looked at -- with the contractor in closed session, looked at the workload for the upcoming year.

DR. MELIUS: Yeah, just to that point, I think I understood you, Paul, that we would -- that would -- that following our closed work session today might be a -- sort of timely to talk about sort of the scheduling --

DR. ZIEMER: Prioritizing --

DR. MELIUS: -- and priority issues --
DR. ZIEMER: -- for example --
DR. MELIUS: -- and so forth.
DR. ZIEMER: -- what's the next site profile that we want to deal with --
DR. MELIUS: Deal with, right.
DR. ZIEMER: -- in terms of resolution of issues and so on.
DR. MELIUS: Yeah, so for 3:00 o'clock and --
DR. WADE: I just want to say on the record that that discussion will flown out -- flowed from the subcommittee discussions.
DR. MELIUS: Right.
DR. ZIEMER: Yes.
DR. MELIUS: Yeah.
DR. ZIEMER: So we -- we had an informal presentation yesterday by both Jim Neton and by Arjun Makhijani on the six priority items relating to the site profile. Now -- and basically there was no specific recommendation that came out of that. There was one motion dealing with the Mallinckrodt-related issues, but that motion did not pass, so we had no specific recommendation, but we do need to now address the six items and hear from both NIOSH

and SC&A. So let us begin with NIOSH and, Dr. Neton, if you're prepared to present your material, we will proceed.

Yes, and --

MS. BROCK: Hi, I'm sorry --

DR. ZIEMER: Denise Brock, you have a comment?

MS. BROCK: I do, I have a question. I'm so sorry to interrupt. I was just curious. I know that we -- that you vote tomorrow on the SEC -- excuse me, I have a Tic Tac in my mouth -- you vote on the approval or not of the SEC petition, and I'm wondering if I could somehow get clarification from the Department of Labor in reference to the non-SEC cancers such as skin. I know at the Adams Mark I had brought that up in reference to the petition going through for '42 to '48, and there were some skin cancers and other non-SEC cancers. I wanted to make sure that they were still going to be dose reconstructed, and the -- I know Dr. Neton said yes, and I believe Shelby Hallmark had agreed. But I wanted to make sure I got clarification on that that if this is approved that the non-SEC cancers will still be able to have remedy, that they will be able to be dose

reconstructed. And I thought perhaps if somebody from Labor could get ahold of whoever they need to maybe to get clarification on that.

DR. ZIEMER: Okay. We will try to get that answered yet --

MS. BROCK: Great, thank you.

DR. ZIEMER: -- this week.

DR. WADE: Before you step back, Denise -- so your question is specifically regarding this petition that we're looking at, and if this petition is approved, what will happen to the non-SEC-covered cancers. You're not asking anything to do with the earlier petition at this point?

MS. BROCK: No, I know the earlier petition was covered. I -- and that was okay. They are going to be dose reconstructed. I just wanted to make sure -- just to cover all my bases, that in fact the non-SEC cancers would still be able to be dose reconstructed.

DR. WADE: I can only promise that we'll raise the question.

MS. BROCK: Thank you very much.

DR. ZIEMER: Okay, here's Jim Neton. Jim,

welcome back to the podium. And let's see, does everyone have a copy of these handouts? These were not in the book, right, Jim? Didn't we distribute these yesterday?

DR. NETON: That's correct, these were --

DR. ZIEMER: I'll make sure the Board members who were not here yesterday have a copy.

DR. MELIUS: I don't believe I got a copy.

DR. ZIEMER: We'll get copies here.

DR. NETON: I'm sorry, I thought they had been distributed. Apparently --

DR. ZIEMER: Yeah, I think they were yesterday, but not everybody was here yesterday.

DR. NETON: Yeah. There were plenty of copies so there shouldn't be a problem.

I wasn't quite sure where this presentation was going to fit into the meeting. I didn't know whether it was today or tomorrow's session, but I'm always willing and able to go whenever asked to -- to present.

We were asked to remind everyone -- NIOSH was asked at the last meeting to evaluate what was called high -- or not high priority, but six priority issues that were a result of SC&A's review -- I think it's the third supplemental

review, I forget where we're at now, of the Mallinckrodt site profile. So I've got a few slides here that -- I've attempted to summarize where I believe we're at. Of course you've all been on the distribution list of the large volume of documents that have been generated in the last month or so, trying to come to some resolution on these issues. And honestly, it's been a very technically interesting and rewarding process. I think it's just -- it's a very good, transparent scientific process, and I think SC&A would agree as well that we've all learned things going through this.

Just -- just to -- the first priority issue was the handling of raffinates. That sort of surfaced as possibly the key issue that was looming on the horizon for how we would do these dose reconstructions.

And just to remind everyone what we mean by the raffinate ratios, this is reproduced from one of the reports that we've generated. It's a general outline of the process, and you see when you're taking pitchblende ore that is in equilibrium -- presumed to be in equilibrium -- down the chain and you start doing a chemical

process on it, you end up modifying that ratio to some extent to where in the very first process you end up with this what's called K-65 residue. And that's the material that is very highly enriched in radium 226.

The way the chemistry is, they precipitate out as a sulfate and you get lead sulfate -- it's called lead cake, as well, but lead sulfate, radium sulfate. So that has a very large concentration of radium in it, as well as other daughters -- progeny, such as thorium and actinium and protactinium. But by and large, there's a huge concentration of radium.

The second step is a very similar process, the barium sulfate cake, not that different than the radium. It's just a sort of clean-up phase. When you get down here, we have Sperry cake, which is a precipitate out of the ether extraction column in the aqueous phase, which was known to be a very good source of protactinium.

And then at the very end of the process you have essentially the true raffinate, the junk that's left over that was not usable. It's known as airport cake or AM-7. This is the

material after the radium's been taken out that is fairly enriched in thorium 230. You'll see as we go through the discussion, thorium 230 is somewhere around 70,000 picocuries per gram in this material.

So you have -- what I'll be talking about is radium-bearing ore and thorium-bearing ore, and what I'm really referring to here is K-65, which is enriched in radium, and airport cake, which is highly enri-- it's not -- it's highly -- it has mostly thorium 230 as the consideration, so that's what I'm talking about.

How do we reconstruct dose to workers? Raffinate workers who worked in Plant 6 in the chemical extraction process. Once all of this stuff is gone and the airport cake is shipped out and the K-65 is shipped out, then you go into uranium metal fabrication, and you really have none of these problems -- for example, operations in Plant 4 where they're working with metals.

So -- so what have we done here to address this raffinate issue? We have developed process-dependent ratios. In other words, we could not

always tell if a worker was working with the radium end of the business or the thorium end of the business, so we bifurcated the process and developed a technique or a process for looking at exposure to radium-bearing residues and exposure to the airport cake residues.

And those two processes are the radon breath analyses that we have can be used to determine the radium intakes for those workers and then assign a radium intake with appropriate ratios.

And for the airport cake, that technique is not useful for assaying thorium, so we're going to use the thorium air concentra-- or the air concentration in the plants and take the 95th percentile of the time-weighted average and apply those to determine the intake for thorium-bearing ores. We will compare the dose from those two scenarios and pick the highest dose -- if we don't know, if you can't tell where the worker worked -- and assign that as their intake.

Kind of going through this, the radium-bearing residues are based on radon breath. We'll use the actual radon breath data if it's available. If not, we've developed a -- a distribution.

We'll pick the 95th percentile of that distribution for unmonitored workers who were residue workers and, like I said, use the coworker distribution. And then the thorium is based on the 95th percentile for residue workers.

If they did not appear to be a residue worker, we'll use the full distribution. The best estimate would be the 50th percentile, but they would also be assigned the uncertainty about that value. And as we discussed yesterday in the subcommittee meeting, this would be very -- we'd have to have conclusive evidence that they were not residue workers in order to apply this distribution. This would be a pretty -- a pretty tight standard here. If we couldn't tell otherwise, we're going to assign the 95th percentile.

Okay. Here are the ratios that we proposed to use, and I handed out yesterday at the subcommittee -- it was available -- a little write-up that describes how we arrived at these ratios. So for what we call radium enriched, this would be the K-65, we're proposing to use the ratios that were -- that -- determined from

the K-65 residues that are at the -- in the Fernald silos. That -- those residues came from Mallinckrodt originally. We believe them to be fairly representative of the ratios.

For the thorium enriched residues we're proposing these ratios, and those are based on some analyses that we've obtained. There's a few -- few publications on this. We believe the best for this -- I think it's the Figgins reference. We're using -- there are a couple of analytical results that indicate that this ratio -- the thori-- the protactinium is about 13 percent of the alpha activity.

The actinium 227, there's indications that it's lower than the protactinium, but we couldn't conclusively determine it, so we're going to assume that the actinium 227 is in equilibrium with the protactinium.

Okay, just continuing on a little bit more with the ratios, the uranium intakes are going to be calculated independently of the raffinate source terms now. In looking at the original data and doing some dose reconstructions, it became fairly obvious that workers rotated through jobs. They weren't always raffinate

workers and uranium workers. They worked around the plant. So the uranium intakes were highly inflated -- not inflated, but were -- were not representative of raffinate intakes necessarily. For example, I can show you later on -- we -- we had proposed earlier, remember, taking a ratio of uranium to radium and multiplying it times 100 and I think we even got as high as 400. If you do that, you end up with some very large intakes that are inconsistent with the air concentration data itself. So we ended up just independently calculating the uran-- the dose to the workers from the uranium intake, isolating that and then using the radon breath and the air concentration data for the raffinates. There were some questions raised about the reliability of the radon breath analyses. We've looked into this a fair amount, and in our opinion -- there were some missing analyses. Up to about 25 percent of the data were listed as either lost or not analyzed. We've talked to Dr. Naomi Harley at EML, who was there during this time period. She was aware of no selective censoring. It was more

likely, in her opinion, that the missing analyses, particularly where a set wasn't analyzed, had more to do with the availability of the analyst or the timeliness of the shipping of the samples since radon has a short half-life -- and Federal Express wasn't around during those days. It could have sat too long to be of use -- of use in the analysis. So we've looked at this. We don't see there to be any indication of selective censoring.

The distribution of the worker types appears to be consistent with broad sampling of the work force, as you'd expect.

And the analytical techniques that were used are -- are, to our knowledge, prone to overestimating intakes than anything. That is, there were some issues with people having their breath sampled in areas that had high radon in the air. That would tend to over-inflate the value. This postprandial effect, where after eating people tend to ventilate more radon, would also tend to overestimate. So there's a number of areas that are prone to make these values overestimates.

I just have a couple of graphs here looking at

the distribution. About 60 percent of the sampled workers came out of the operations -- and these are all based on the job titles assigned to the radon breath numbers in the database -- 13 percent trades and crafts, laboratory workers about 10 percent. There was a laboratory right there in Plant 6, I think, which was doing a lot of these analyses. Some warehouse workers and some miscellaneous categories -- engineering, administrative. But in general it looks to be like a reasonable sampling of the workers who were likely to have been exposed to radium.

This just breaks it down a little further by year to show that the sampling distribution didn't appear to change substantially through the years of those different categories.

And then finally the issue of the lost or not-analyzed samples we looked at. There was a period of time in August of -- I can't exactly remember which year now, '53 or '54, one of the years in August -- one of the months -- August of one of the middle years that had a high percentage of missing samples, the lost -- lost samples or not analyzed. We went back and

said well, of the samples that were missing or lost in that time period -- and there was a total of 40 -- we went back and looked and said did -- do we have additional data for any of those samples. And the answer is, within a year, we have some sample for 98 percent of those people. So it's not like those samples were lost -- those people were lost from the database. The radon breath tends to be an integrating measurement because we're assuming that it's an integrating measurement of the amount of radium in your skeleton. That's not going anywhere very fast, so a sample within a few months or a year later is not much of a changing picture. So in essence, what this really, I think, depicts is that even though the samples weren't analyzed, we have some way of looking at the intakes for those workers, as well.

Okay, issue two, the handling of radon exposures. If you remember at the -- at the last Board meeting the issue was raised, does -- first of all, do we have enough radon samples to reconstruct radon exposures to the workers. And secondly, if -- given that there are large

radon exposures, is there not some contribution of radon inhalation to systemic organs other than the lung. That was raised in the SC&A report.

So we took a look at this and we actually analyzed and fit lognormal distributions to about 5,000 radon measurements that were taken over the period of time between '49 and '57, got some very nice fits to that, and I think it's all in -- in the sheets -- in the reports that were provided to the Board. So we believe the radon fits a pretty good distribution. The fact is that almost all the lung cancers have been paid thus far, so radon dose to lungs is really not an issue at this point.

But the dose to systemic organs still is out there. What we've done there is looked at SC&A's analysis and determined that -- their analysis had some technical issues related to this half-life of these radon progeny in the lung. We've re-evaluated it using our own models and came to the conclusion that there is some dose. Most of the dose is due to the inhalation of -- the dissolution of radon gas in the body. So we needed to account for it.

I mean we agreed that we needed some way to account for it, but when we looked at the radon breath monitoring techniques -- in other words, we're assuming that everyone in the process area at a minimum had the 50th percentile of the radon breath values -- then that analysis will bound the dose from -- the systemic organ dose from radon. And there's about a five or six-page write-up that we provided the Board, and I believe SC&A has looked at this and they -- they are in agreement with that. So we think that we have a way to address the radon issue.

The external dose correction factor, we talked about this yesterday some. There were -- there was -- SC&A's opinion that there were certain job categories where a badge worn on the lapel on the upper torso would not adequately sample the exposure from a worker who had what we would call a near-field exposure scenario, someone working near a pot of uranium or milling or grinding an ingot, or cleaning up a spill, so we modeled those. We have this software program called Attila that does nice modeling of external dose fields for us. And

based on those analyses, we agree that there are some exposure geometries -- such as pitchblende clean-up, ingot machining and people working close to de-nitration pots -- where the film badge itself could possibly underestimate the dose by about a factor of two.

So we've written a Technical Information Bulletin on this. It's in draft form. I think SC&A has looked at this and they agree that this value is appropriate, so we will be multiplying doses for workers in these exposure geometries by a factor of 2.1. It looks like, based on our -- looking at the claims that we have in-house right now, it will be applicable to about 57 percent of the current cases, and that's based on an analysis of where these people were working and what they were doing. Essentially what we're saying is people in the administrative area and engineering areas were probably not doing these type of activities, so these would have to be people working directly in the plants.

This is just a nice little picture -- I like to show colored pictures -- of one of the Attila

runs with a de-nitration pot, and the nifty color is just to sort of show the differences of the exposure rates near the badge. So the pot here is a higher dose. Here's the dose where the badge is, and these different gradations, you can see the doses down here to the lower torso tend to be a little bit higher than the doses that would be measured up near the badge.

Okay, the assessment of intermittent exposures. SC&A was concerned that the chronic exposure model that we would normally default to when we had bioassay data would not sufficiently bound the exposure scenarios of these workers. And we went through a number of scenarios. We've developed a few graphics and discussed this at some length in our face-to-face meeting that we had in Cincinnati at the Hilton Hotel.

And I won't go through all the details of these, but just to point out that -- this is an actual exposure scenario for a worker from '47 to '58, the bioassay samples. If we fit a chronic exposure model through all those data points, you end up with the highest intake for the worker than if you start inferring certain

acute intakes, whether it happened shortly after employment, the first day of employment, several intakes -- the bottom line here is that the more refined you make your analysis, the lower the intake goes. It's just the way that works. And in fact at one point we just said let's assume one of these values we didn't even know about, you end up right in about the same ball park as -- as with the chronic exposure model. So it's fairly insensitive to these -- these perturbations. And I think SC&A has -- has looked at this and I think they're at least convinced in general that this is true, although there may be certain exposure -- unique incidents, exposure scenarios that we need to be sensitive to and aware of and make corrections as appropriate.

Okay, issue five, dose reconstructions for unmonitored workers. The question is, you have administrative workers assigned -- who have no -- no exposure. What about environmental doses to these folks?

What we ended up agreeing to is unmonitored administrative workers would be assigned the full distribution of the monitored workers'

exposures. We believe that to be appropriate. We've looked at some of the environmental monitoring data available, and I certainly believe that, from a routine exposure scenario, this is a claimant-favorable approach. So all administrative workers will be assigned the same dose as if they were working in the plant. The issue of unmonitored workers in the Plant One and Two decommissioning area and the airport storage site, we're going to assign those workers the 95th percentile of the monitored worker exposure.

Okay. And then the final issue was, given what you're doing, could you give us a couple of examples of how this comes out? And I have some examples I'm just going to step through real quickly just to give you a sense of what the doses look like, and I'll just have to switch gears here quickly.

The first scenario was a residue worker where we had uranium bioassay and we also had radon breath. So here is someone who started employment in 1951, finished in 1958. We had dosimetry data. He was listed in NOCTS as a chemical operator, but the dosimetry records

indicate that he worked in the pot room, the ore room, clean-up -- a wide variety of different job functions.

Summarize, we have external exposure data, internal exposure data. We have no thorium data for this person. We ended up with -- here are the urine samples that we have between 1951 and '56, and then these are the radon breath samples, which are percent of tolerance. That is, one picocurie per liter was the tolerance level in those days, so something indicated as 20 percent of tolerance would be really .2 picocuries per liter radon breath.

And so the approach here was let's use the uranium intake from uranium bioassay samples, take the radium intake using -- estimate the radium intake from the breath radon, and determine what this person's internal dose was.

And you've got the fits here, I won't go through them. But when we get to the dose, you'll see here -- these are the projected doses to the highest non-metabolic organ, which would be indicative of the prostate gland or other glands that don't concentrate uranium or aren't explicitly modeled in the ICRP, and the

colon dose, which is the two cancers here. And so you see we end up with about 21 rem and 13.6 rem in this exposure scenario. Projected PC's in the 20 percent range.

Now this doesn't include external dose at all. This is just -- yeah, Mark.

MR. GRIFFON: As someone who's followed this pretty intimately, I'm wondering now, with the addition of the AM-7 in this question about -- I mean in general you're saying -- and this may only apply for coworkers, but the radium source term versus the thorium source term, you're saying you'll take the higher of the two. Would that apply if an individual had their own individual radon breath data, you back-calculate your radium intake, would you still look at the possibility of applying the thorium from the other -- the thorium source term table in your document?

DR. NETON: That's what we're doing.

MR. GRIFFON: So these num-- so these numbers -- these doses don't apply now, or did you do that already in this model?

DR. NETON: Well, this is just the one example where we have radon breath. We're going to do

a thorium intake and then compare the two calculations and pick the highest of the two for assignment.

MR. GRIFFON: Okay. But you only show the doses as calculated from the radon breath there. You didn't --

DR. NETON: This is just -- just -- this will be the first part. I've got the third one. I'll be getting to that. This would be -- okay, so the first thing we do is say we have radon breath. This is the worker's dose. And then we were also asked to look at alternative organs, and you can see that the doses to -- you know, those were -- those are non-metabolic type organs. Here's the organs that have some concentration of radionuclides, and you can see these doses are fairly large -- 3,000, 21,000 rem -- these are all well over 50 percent for what we would call metabolic organs, organs that concentrate the activity. So that is the first analysis. We have radon breath.

Now let's -- let's assume that we don't have radon breath. Let's say this worker -- we just didn't have those seven radon breath samples,

and so this would use the -- it's the same case, we're just pretending we don't have the radon breath, and so what we're doing here is -- again, calculate the uranium intake from the uranium bioassay data. The radium intake would now be calculated from the 95th percentile of the radon breath data. So now let's go down and look what happens. You end up with higher doses -- not tremendously higher because this guy had some pretty positive radon breath -- but you end up with 40 rem for the highest non-metabolic and 25 rem to the colon, and your PCs are in the 30 and 40 range here -- without any external dose added, remember, so that's not really representative of what this case would come out. Medical's not in here or external. And then the --

MR. GRIFFON: But the -- the -- the fractions on that one for actinium, protactinium, thorium --

DR. NETON: Uh-huh.

MR. GRIFFON: -- were based on the radium source term?

DR. NETON: Still. Still we're looking at -- we're looking at the radium portion of the

source term.

MR. GRIFFON: Right.

DR. NETON: This would just be assuming we had no radon breath. I think that's what we were instructed to look at. And then the non-metabolics -- or the metabolics, same -- similar pattern, very high doses to the non-metabolic organs, all well over 50 percent. Okay, now let's take the same worker again, and the analysis would be what if -- let's look at -- forget the radon breath now. We're going to assume that he was breathing this -- what the -- the 95th percentile of the air concentration was and using the ratios derived for that source term, the thorium-bearing ores. Again, same worker, same uranium intake -- 'cause the uranium is de-coupled now from this analysis. But we're going to take the uranium intake from the uranium bioassay; the thorium 230, actinium and protactinium are from the 95th percentile of the air data, which we determined to be 607 dpm per cubic meter. So what happens here -- and apply it -- now I have to -- this -- this number has changed slightly. The data that I handed you yesterday indicated that this value

here is now I think 13.3 -- .133. It's gone up a little bit, based on our most recent analysis of the literature, but it's not going to be too far off.

What you end up seeing here is the person ends up with about a 1,580 picocurie per day intake of thorium 230. So again, going through all these calculations, same worker, you end up with not that different of a dose, actually. You end up with 24 rem to the non-metabolics and 18 rem to the colon. And you're in the 30 percent range for the colon, 23 percent for the highest non-metabolic. And again, as typical here, the non-metabolic -- the metabolic organs -- liver, bone surfaces -- are showing very, very high doses.

So under any of these scenarios, the metabolic organs are well over 50 percent. The non-metabolics will depend upon the individual scenarios, but they can be very large.

We still have this discrepancy that we're trying to iron out. I've had some discussions with Arjun and Joyce Lipsztein and others at SC&A this morning, and we got some feedback from Keith Eckerman yesterday. There's a

disconnect between the dose conversion factor for protactinium in the literature. The ICRP document we have indicates -- it's similar to -- you'd end up with dose similar to this. The Federal Guidance Report ends up where your protactinium dose would probably end up being similar to your actinium dose. So if anything, these non-metabolic values are going to go -- go higher. And in fact, these values will probably be -- will be driven higher, as well, if -- once we can iron out that -- that discrepancy. It's -- it's not related to our program, fortunately. It's -- it's a difference between the ICRP and what's in the Federal Guidance Report, and we certainly need to get to the bottom of that. I mean this is a -- an issue that needs to be resolved. But I think in general the patterns would hold where your metabolics are going to be easily over 50 percent and non-metabolics are going to be high and, depending on the individual scenarios in the external dose, they can go over.

Okay. That -- and then the last scenario was -- we were asked to look at a worker who may have been in the ionium extraction area. We

had one bioassay sample for this person, which we modeled. He started in 1949. He finished in '58. He did have a break in employment in 1953, had various job categories but did work in Plant 7-E at one point, which is where the ionium extraction occurred. And as I mentioned, we had -- we have uranium in urine like we do for almost all these folks, some radon breath, and a thorium in urine taken in -- April 8th of '55, which was right during the March/April processing time -- of 1.4 dpm per liter. We know it was a very short processing time, so we believe it's sort of in the middle of that. We've modeled that with a chronic intake and come up with a fairly high thorium intake. Just to give you the representative doses here, the dose to the pancreas ended up being about 110 rem, which put the PC at over 50 percent without even inclusion of any external dose at all. Pancreas is a non-metabolic organ for these models, by the way -- I think. I'm pretty sure.

If you look at the alternative doses, of course, they're huge. The bone surface is 2.3 times ten to the fifth rem; liver dose ten to

the fourth; kidneys 1,600. So again, metabolic dose is extremely large, and -- and I can't -- you know, most of these folks with any positive bioassay working in the thorium/ionium area more than likely for metabolic cancers are going to be well over 50 percent.

Okay, I think that's all the prepared remarks I had.

DR. ZIEMER: Thank you very much, Jim. Now I'll open the floor for questions from the Board.

MR. GRIFFON: Jim, I guess what I was trying to clarify was -- was the -- I -- I understand the cases, and that is what we asked for. Now I'm looking at the August 12th document that -- that sort of has the table one with the fractions that you just talked about, and then there's a table two that shows example intake scenarios, and you have your choice of your uranium source, thorium source, radium source. I guess my question is now -- I thought I understood this before, but now -- if an individual has radon breath data -- I'm trying to think of a circumstance where that would be the driver for the overall intakes of thorium,

actinium and protactinium. It seems like that's going to generally give you a lower number so you're going to default to the thorium source.

DR. NETON: No, I think if you look at the examples I just showed, the 95th percentile of the radon breath gives you -- with these current dose conversion factors -- a higher dose.

MR. GRIFFON: The 95th percentile --

DR. NETON: Of the radon breath.

MR. GRIFFON: I'm saying if the individual has his own personal radon breath data --

DR. NETON: Right.

MR. GRIFFON: -- will that ever be the driver? It doesn't -- it seems unlikely to me.

DR. NETON: Unlikely, unless you're at the 95th percentile of the radon --

MR. GRIFFON: Right.

DR. NETON: -- intakes, yeah.

MR. GRIFFON: Unless you had a -- yeah, you had a personal result always out there at the edge of your (unintelligible).

DR. NETON: Correct.

MR. GRIFFON: Right.

DR. NETON: Right.
MR. GRIFFON: So really you're not going to -- I mean I don't see a circumstance where you're often going to rely on an individual's bioassay data. You're going to use distribution data. I mean is that fair to say for most of the cases? It seems like it to me.
DR. NETON: For the radon breath? It's hard -- it's hard to -- it's hard to unilaterally make that decision. I don't know. Depends on -- I think 1949 -- well --
MR. GRIFFON: Well, let me -- let me rephrase the question. If a person has their individual radon breath data from which you back-calculate a radium intake, you apply fractions as in your table one of this document --
DR. NETON: Right.
MR. GRIFFON: -- you would then still compare that to that thorium source term to see which one's going to result in a higher dose. Right?
DR. NETON: Right, right, right, yeah.
MR. GRIFFON: So you wouldn't -- just 'cause they -- they have their own personal data, they're not going to be --
DR. NETON: That's correct.

MR. GRIFFON: -- in any way --
DR. NETON: Yeah.
MR. GRIFFON: Right.
DR. NETON: Right, so -- you're right. If a person's individual bioassay results in a lower dose than the 95th percentile of the air concentration data --
MR. GRIFFON: For the --
DR. NETON: -- source term, thorium source term --
MR. GRIFFON: -- thorium model source term.
DR. NETON: -- then we're going to use the --
MR. GRIFFON: Then you go to that --
DR. NETON: -- highest value.
MR. GRIFFON: -- model anyway. Okay, it's not just for coworkers that that applies.
DR. NETON: No. It's everybody. In fact -- you're right, mayb-- for radon breath, most cases I can envision using the thorium air concentration data as a bounding value if we don't know where the worker --
DR. ZIEMER: But you would always check it.
DR. NETON: We're going to do both, yeah. We're going to do both every single time. I was trying to indicate that here. Case one,

case -- case one and the third one are the --
MR. GRIFFON: Right, right.
DR. NETON: -- two examples.
MR. GRIFFON: I mean this just fur-- I mean just to further point out what I was mentioning yesterday that -- that we have a lot of individual radon breath data and -- or a fair amount. I think maybe for 20 percent of the claimants. Is that --
DR. NETON: Yeah, that's fair, 20, 25 maybe.
MR. GRIFFON: And we have, you know, probably close to -- maybe not 100 percent, but a lot of people have the uranium urinalysis data. But as far as the drivers of the dose, neither one of those are going to play much of a role --
DR. NETON: Well, I --
MR. GRIFFON: -- I don't think.
DR. NETON: I think they do. I think you need to look at the claimant-favorable nature of these calculations that we're doing.
MR. GRIFFON: Yeah.
DR. NETON: I mean we're saying -- I think probably the radon breath is probably reasonable, but we can't tell, so you know, in our program we've always taken the policy that,

given two scenarios and we can't conclusively determine one way or the other, we're going to go with the higher driver. And if that happens to be the source term that was unmonitored because it was not real high, maybe, we're going to do that.

MR. GRIFFON: (Off microphone) No, I understand, but -- but you can't tell. As you said, you can't tell, that's why your default (unintelligible).

DR. NETON: We can't definitively tell, that's correct.

DR. ZIEMER: Thank you. Other comments? Dr. Melius.

DR. MELIUS: Yeah, I have a few questions. I'm trying to mainly clarify some things that you -- came up at the subcommittee meeting, and just understand some of the documentation. You handed out yesterday this two-page table references to Sperry cake and so forth. Have those references and so forth been shared with SC&A, have they had opportunity to review any of this information prior to the meeting?

DR. NETON: They have not.

DR. MELIUS: Okay. And then there was some

discussion I think yesterday about sharing some of the back-up calculations with this, I think with Mark and so forth. Has that taken place or is that --

DR. NETON: Well, Mark has picked off our computer the air monitoring data that we have for the Plant 7-E, but I was not able to get the spreadsheet electronically last night. My computer just won't -- won't work with the CDC computer here. I am having FAXed that spread-- a FAX -- the spreadsheet is being FAXed here, hopefully as we speak, as well as some of the reference materials that were used for those calculations.

DR. MELIUS: Okay.

DR. NETON: I will say that SC&A has had access to those documents because they're on our site research database, but we're going to make them available to them.

MR. GRIFFON: There -- there's no way to get that spreadsheet electronically? I'm worried about -- FAXed version is -- it's a lot easier if I --

DR. NETON: Yeah, I understand, I -- I just can't get my computer to hook up with CDC. We

changed systems and it's --

DR. ZIEMER: Any follow-up --

DR. MELIUS: Yeah, I have some other questions, at least one more here. In regarding to the issue of -- I think I asked you about it yesterday -- selectively censoring the data, I guess I have -- have two questions. The table you showed which was related to the missing August data, has there been any analysis other than that --

DR. NETON: No.

DR. MELIUS: -- for -- so, okay, just --

DR. NETON: We took the section of the data where we believed there was the highest -- the highest percentage of missing data, and it was August of that year, so we just felt --

DR. MELIUS: So it's just that -- that's the only example that you've --

DR. NETON: Correct.

DR. MELIUS: -- pursued. Okay, that's fine, trying to understand it -- and do that. And is there any documentation -- I guess I'm -- I'm a little -- as I understand it, and this may be a time issue, but the site profile has only had a very minor or modest change since the last

time, at least in terms of documentation, so -- which is the one paragraph of a note that Larry sent us. Is that --

DR. NETON: No, there's more than that. What we've done is taken out all the prescriptive language that was in section six related to the internal dose.

DR. MELIUS: Okay.

DR. NETON: There were some -- some statements in there to say you should do this and do that. We believe that these approaches that we have -- that we've evolved in -- and I -- in a sense are becoming the workbook for Mallinckrodt -- which is what we've really done, we've created the Mallinckrodt workbook here -- were not necessarily consistent with some of the language that was in that site profile, so you know -- but the -- the actual data that are tabulated in those 250 pages, by and large there's nothing changed there. I mean the information contained in the site profile is -- is essentially intact. I mean there's no -- we've refined it and developed more -- further analyses of data, but the information in there is not necessarily incorrect. It was a couple

of prescriptive items in there -- are inconsistent with what we're proposing here.

DR. MELIUS: But -- but you've made I think pretty significant procedural changes in terms of how you're handling some of this data.

DR. NETON: Well, yes, I think that would have evolved over time as we're doing dose reconstructions. As SC&A is seeing, you have a site profile that tells you a lot of information. Now what you end up doing with that at the end of the day when you're -- when you're doing these dose reconstructions does evolve over time, that's true.

DR. MELIUS: That's all I was asking. I think that's all the questions I have.

DR. ZIEMER: Additional -- yes, Mark has a question.

MR. GRIFFON: More of a minor point on the -- our question on the thorium data that you provided yesterday. Was there any -- I mean I'm trying to understand why they had a two-month urinalysis program and then after that did they -- was there -- maybe you don't have documentation to support this, but why all of a sudden was it air sampling and no urinalysis,

or is it just that you can't --

DR. NETON: I don't know.

MR. GRIFFON: That's all you could find --

DR. NETON: That's all we found, right.

MR. GRIFFON: -- (unintelligible) data, right?

DR. NETON: There may be urinalysis. If it was, it might have not been done by the HASL laboratory in 1956/'57. There was a sort of diminution of HASL's role later on in the process, so I -- I really can't speak to that other than we have what we have.

DR. ZIEMER: Further questions?

(No responses)

Okay, thank you, Jim. We can -- I'm checking the time here. We -- we can perhaps -- Arjun Makhijani, how -- how much time do you need for your presentation?

DR. MAKHIJANI: (Off microphone) I think I can do it (unintelligible).

DR. ZIEMER: Okay, why don't we do that. We may have to extend the question period till afternoon after we reconvene, but let's proceed with Dr. Makhijani's presentation from SC&A, then see how far we get. We're scheduled for lunch at 11:30. We might run over a little

bit, but we have a -- we have a closed session at 1:00 o'clock dealing with our contract, so we -- we need to allow enough time for folks to eat lunch.

DR. MELIUS: No one will know if we don't come back, though, so -- or if we're late.

DR. ZIEMER: We'll have a problem. Okay, Dr. Makhijani.

DR. MELIUS: You'll keep track of me, though, I know.

DR. MAKHIJANI: I prepared this -- you'll have a copy of a report. The Board directed SC&A to essentially review, as Jim said, in real time as NIOSH was responding to these priority issues. I just -- my team is formally mentioned at the end of the slide, but I just wanted to give you maybe a little bit more detailed idea of who did what and how -- how significant an effort this was.

I coordinated the effort, but -- and did the work on the residues. John Mauro and I did the work on the environmental side of this review. I had Mike Thorne do the memorandum on radon breath as to whether it was a suitable method. And Joyce Lipsztein, who's here, and Dunstana

Melo, her colleague, reviewed that. Hans Behling covered the external dose. Bob Anigstein and Joyce Lipsztein and Dunstana Melo covered the radon issues, and all of us looked at the dose reconstruction. So this has been a very significant effort on the part of a lot of different people.

This is the third supplemental review of Mallinckrodt, as you know. And mainly, as Jim has described, the question of all of these trace radionuclides that do go together with uranium 238 and U-235 were seen to be significant and have -- have been the focus of the effort.

As a process matter, the Board directed us to keep track of how all of this was done. And really it's been a very fruitful and very open collaboration with NIOSH. We kept a record of the communications, including all the e-mail record, which is there in Attachment 5. The petitioner participated in the August 4 Cincinnati meeting. There's a -- there is a transcript of that meeting, I understand now, that is available. Jim and I cooperatively prepared a summary of the conference call,

which is there in the report. And all of the documents that were sent to SC&A, up to August 14th, are in the attachments from 2 through 7. They should have been labeled actually NIOSH documents, but they're -- they're so described in the report, and they clearly are documents produced by NIOSH. Jim -- Jim has shown you the slides. So it was -- it's been a very, very open interchange with the full participation and communication with the petitioner, and it's been very fruitful for us. And as Jim said, we -- we certainly have also learned a lot in this process.

Our objectives were to track the six priority areas. I just -- just as a reminder, we -- our emphasis was on methodology. We did not verify all of the calculations. We tried to verify some of the work on the ratios and the radon breath and the radon dose issues which were very critical. Specifically we did not re-run IMBA and do all of that work. And also, obviously this is not a full SEC petition evaluation. This is in the context of a TBD report, and an SEC petition evaluation review is sort of obviously beyond the scope of what

we were asked to do.
So I won't repeat the six priority issues. You've already seen that with -- with Dr. Neton.
Our overall conclusion is that NIOSH has developed an approach that can be applied to estimate maximum doses with plausible worst-case estimates. But there's a proviso that defensible values still need to be developed for certain critical parameters.
Our conclusions are as of August 16th. You have my slides, but just now as I was sitting there, some new information has come to light, obviously, which Dr. Neton has described, and I've added a slide as to some of that new information, which I'll discuss at the end. So I'll go through the critical issues that still need to be completed. There is a table -- a sort of a checklist table in the report which goes sub-issue by sub-issue as to the status of it.
Our specific recommendations on the major issues are, in terms of the ratios associated with the radon breath data -- which I haven't specifically mentioned -- those -- the use of

the K-65 ratios for those areas, for the K-65 areas in Plant 6 and associated areas, seem to be appropriate to us. They're well established, there's some good measurements, the measurements are internally consistent. I've personally gone to the Fernald document database and reviewed some of that information, and that seems appropriate to us.

The question of the non-equilibrium radionuclide exposures in regard to the thorium 230-dominated areas, the AM-7 areas in that chart that Jim put up, which is also in your attachments, are a little more difficult because there is a much thinner volume of information, at least as of August 16th. And this morning I've been reviewing this new information -- which is quite significant; I'll talk about that -- but from a broad point of view there's the question of job types. The Board did say to whom does this information apply. And NIOSH has proposed that general -- to most workers, these non-equilibrium ratios which produce the high doses, high thorium, high protactinium, would be applied to most workers, and that equilibrium ratios which

produce lower doses would be applied only when it is clear that it's a uranium worker in areas that did not involve these raffinates and K-65 residues and so on. And we're in agreement with that, al-- I'll -- we would like to emphasize that because of the very large difference in doses and potential outcome, that this assumption of equilibrium exposure should be very carefully made and documented because it needs to be very defensible 'cause there's going to be a very significant difference in dose. And reviewing the radon breath data -- raw data, it's not -- it's not clear that it's -- it's not clear-cut that certain workers in certain places can be excluded from this higher values.

Now one area of significant kind of outstanding issue and detail is this 95 percentile of air concentrations for -- for the high thorium areas, the AM-7 areas. NIOSH has proposed to compare this radon breath with air concentration results for the thorium areas. And the question is what air concentration should be used? In the calculations that NIOSH has presented, they have taken the 95

percentile of the daily weighted averages for all of Plant 6 where the uranium processing went on. And of course that doesn't appear to us to be representative of the AM-7 areas. It's is a 95 percentile of the daily weighted averages, but -- and that is -- that has been said by NIOSH, and I have not reviewed the data myself, but accepting at face value that it is double the daily weighted average of the thorium, it doesn't tell us what is the relation of the proposed number to the 95 percentile value of the air concentration in the AM-7 areas. I just wanted to be very clear about this, that -- that the air concentrations in the areas where thorium was dominant need to be the reference point for doing the dose calculation for those areas, and the 95 percentile of the value of the air concentration needs to be developed for that. This is -- in the April report that we presented to you, the first supplemental report, we -- SC&A presented some calculations about how one might go about this. This is a non-- non-trivial issue where some work needs to be done, and presumably the data are there

and it can be done, but this is not a resolved issue of detail as yet. We believe some work needs to be done here.

I won't dwell too much on the radon breath data. I think there's been quite a lot of discussion about illegible data and so on. The only point I'd like to make here is that there are workers with -- the way the calculations are now set up, the -- the workers with radon breath data may be at some disadvantage because the full distribution is being used. That's in the nature of the process, we understand. But the measurement uncertainties, as well as how to fill the gaps in the data in a claimant-favorable way should -- should be assessed somewhat -- somewhat differently and -- and perhaps some -- some method to -- to have 95 percentile values for missing data points should be developed to make it appropriately claimant-favorable for workers, 'specially who have just a few radon breath data points.

So that's -- that's the major recommendation we have regarding completion of the dose reconstruction procedure.

And there is the question of Plant 7-E, which

Jim discussed, where thorium was extracted for part of '55 and '56 and '57. At the time that we prepared the report it wasn't clear how much bioassay data was available. We understand now there's quite a bit available for the two months, and at the time we wrote the report there wasn't -- it wasn't clear how much -- at one -- the air concentration data that was in the TBD and associated documents was clearly inadequate. And as an indicator -- I can point out to you that the indicated annual intake from the TBD-derived values and the case study presented by NIOSH -- in the case study the intake is about 100 times bigger than was suggested as an intake in the TBD. So we're talking about very significant differences. And the new information that's been presented would -- would help of course carry this forward, but it is new information.

There are two external dose -- there are three external dose issues. NIOSH was asked to address one of them, but we did raise three issues in our last review. We agree with NIOSH regarding how they have handled the organ geometry versus the badge geometry. And we've

reviewed the Attila results and are in agreement with them.

But there are these two issues regarding dose conversion factors, which Dr. Behling talked about yesterday afternoon, which are the angle of incidence on the badge because the shielding absorbs some of the radiation, and the dose conversion factors need to be corrected. These are complex-wide issues, but they do need to be resolved to do Mallinckrodt dose reconstruction, and we did raise them in this context because if there's going to be some resolution to this, these are part of the issues that need to be resolved. That could be very critical, especially for the non-metabolic organs which -- for which external dose may be the most important, or at least one important factor.

The correction factors for lower torso organs could be as much as a factor of six to eight. That is, you'd have to multiply the dose of record by six times to eight times. And they would be higher for lower photon energies and lower for higher photon energies.

Okay, many priori-- in several priority areas

we arrived at agreement with NIOSH, on the radon exposures. We think on the unmonitored exposures NIOSH has a suitable approach. We don't have any new recommendations. On the incidents, generally NIOSH has devel-- has convinced us that the continuous intake approach is claimant favorable. However, there may be unusual incidents, like when the raffinates boiled over on a worker in 19-- in the ionium plant. That kind of incident has to be looked at particularly, but it's not a Technical Basis Document issue. It's a dose reconstruction issue, however.

The routine environmental dose approach, NIOSH has developed a satisfactory approach. They've not yet developed an accidental environmental dose approach, but looking at the documents that -- that Denise Brock gave me on August 4th, it appears that the basis for doing that is there, but it has not yet been done.

So these are the critical issues, other than the corrections to the radon database, just as a summary. The ratios in the thorium areas need to be developed -- this is as of August 14th; the 95 percentile air concentrations need

to be developed for the AM-7 areas and we're not in accord that the 95 percentile that's being used is the correct one. The dose correction factor for external dose need to be completed.

I'd like to say a little bit -- I'd like to go to my update slide. We've had some new information. I added this slide; it's not your handout. I just added it. Now the -- the analysis that we have of the residues I have not had -- I've read it, but I have -- it contains very significant new information about process chemistry. It could -- it's important new information. It's from complex-wide -- you know, I did re-- re-visit the database, but the database off NIOSH is exceedingly big, and so these are -- these are data from Argonne, from Mound, from -- from Oak Ridge and various parts of the complex. There's very significant new information. It could result in improved ratios, but we have not reviewed it. So we knew that NIOSH was continuing to work on this when we submitted the report. NIOSH did inform us, that's part of the e-mail record. But we've obviously not had a chance to review the

information -- the air concentration data, the underlying documents, the new production data -- that has been presented at this meeting. I have read this and I agree that it is significant and important new technical information.

Now in SC&A's -- between our submittal of the report and coming to this meeting, I did try to go over the IMBA calculations and cast an eye on them to see if -- if everything looked okay. And I picked up this discrepancy between the dose conversion factors for actinium and protactinium. There is some significant issue that remains to be resolved as to which is the appropriate one. There is a -- quite a big difference, order -- about three orders of magnitude, I think, between the ICRP published values and the Federal Guidance Report published values, and they're all supposed to be based on similar documents. But I think the Federal Guidance Report documents may be more recent. This is important because it goes to the fact as to how important protactinium is in -- in the thorium areas and whether you need to worry about the ratios or not.

This was the teams that prepared the report. Thank you.

DR. ZIEMER: Thank you very much. We might have time for a couple of questions before we break, but it is past our break time. We will have extensive time after our closed session for discussion on this paper.

Arjun, could you clarify, though, what is the discrepancy between the ICRP value and the Federal Guidance -- this was on what nuclide or nuclides?

DR. MAKHIJANI: Well, it was for protactinium 231. That's the only one that kind of leapt out at me because the dose for protactinium 231 -- it's not in my slides, but it'll be in attachment -- if you look at Attachment 3-A of your report -- if I might go and actually bring Attachment 3-A -- since I have a portable mike, I'll just do that.

(Pause)

Attachment 3-A is NIOSH's first case study. This is a slightly older version of it. There's an updated version. It's on page -- it starts on page 69 of the report -- of the SC&A report. And let me see, if you go to page 72

and look at the alternative organ doses, the last table on page 72 --

DR. ZIEMER: Yes.

DR. MAKHIJANI: -- and you look at the liver dose, for protactinium it's 1.64 time ten to the minus one rem. If you look at actinium, it's 2,000 rem. That's four orders of magnitude difference. And that doesn't correspond with the dose conversion factors that are in Federal Guidance Report 13, but it does correspond with what's in ICRP. So obviously the two documents are inconsistent and we stumbled upon this. And Jim has some recent information about it from his office, which he mentioned.

DR. NETON: Well --

DR. ZIEMER: Jim?

DR. NETON: -- I'd just like to point out that, first off, the Federal Guidance Report documents are EPA documents that I believe only provide 50-year doses -- is that correct?

DR. MAKHIJANI: No, actually the Federal Guidance Report -- well --

DR. NETON: I think -- they're committed doses, and --

DR. MAKHIJANI: Yes.
DR. NETON: -- and so we are using the ICRP models that we have programmed to do annual dose increments for our program, so that's where we're at. Now this discrepancy --
DR. ZIEMER: Right, you wouldn't use a 50-year dose in a given --
DR. NETON: No.
DR. ZIEMER: -- case in any event.
DR. NETON: Now it doesn't mean that there's not a difference, though --
DR. ZIEMER: Right.
DR. NETON: -- but that's indicative of a problem --
DR. ZIEMER: Right.
DR. NETON: -- or a disconnect.
DR. ZIEMER: 'Cause it's a dose conversion factor.
DR. NETON: Right, but what we have done is IMBA has programmed the most recent ICRP models that are out there, and that's what we've done. Now the Federal Guidance Report was issued I think in 2002 time frame. They've clearly taken a different tack, and we need to look at this. Keith Eckerman I think was involved in

both, and it really comes down to which model they used to -- which metabolic model they used for actinium and protactinium. I think they used surrogate nuclide models, like thorium for one of them and americium for another, and I think that's where the issue is going to lie, but we can certainly -- you know, we certainly need to look at this and run this to ground.

DR. MAKHIJANI: Yeah, we have no disagreement here. I think Jim -- Jim and I have discussed this and Jim discussed it with Joyce --

DR. NETON: Right.

DR. MAKHIJANI: -- today, I mentioned the issue to her. I'm very glad she's here. And it won't make much difference in terms of -- because the doses for liver are very big. But it will make some difference to other organs.

DR. NETON: Correct.

DR. MAKHIJANI: And the one that's highlighted here from the Federal Guidance Report -- maybe you can't see it very well -- is breast, where the dose conversion factor for Type M is 1.6 time ten to the minus five sieverts for becquerel, and I think it's -- it's several orders of magnitude less in the ICRP. Which

let me see if I can bring up. I have it somewhere here. Well, maybe I'll get it ready after lunch if you actually want to see the -- ah, yes, here -- I can bring it up.

DR. ZIEMER: Basically, though, the issue is whether or not it's a true difference in the model versus some kind of an error that's been introduced into one or the other. Is that correct?

DR. MAKHIJANI: Doctor?

DR. NETON: I think it's a -- I think it's selection of the appropriate model. I mean we committed to this program to use the current ICRP models and that's what we've used. Federal Guidance Report has taken a different tack and clearly they have a different approach to the dosimetry. And if that is the most reasonable approach, then we would certainly look into and adopt it.

DR. MAKHIJANI: Yeah. Yeah, it's about four orders of magnitude difference -- the breast.

DR. ZIEMER: Thank you. We do need to take our lunch break. We're going to reconvene at 1:00. Dr. Wade, if you will give us appropriate instructions and information for the public on

the nature of -- and limitations of that particular closed session.

DR. WADE: Right, I wanted to -- for the record now, and I will also do it at 1:00 o'clock -- state that -- let me read from the decision to close the meeting.

(Reading) The Advisory Board on Radiation and Worker Health will be meeting in closed session on August 25th, 2005 from 1:00 p.m. to 3:00 p.m. The closed portion of the meeting will involve a review and discussion of the finalization of contractor cost and scope of work issues for the following fiscal year. Again, we're talking about SC&A issues for the next fiscal year. During that discussion company confidential information will be discussed, particularly labor rates used by SC&A in their proposals, and therefore, by statute, we closed that portion of the meeting. When we return at 3:00 o'clock either the Chair or I will make a public statement as to any action that took place, any motions or work that was done during that closed session, so that will go on the public record. And again I'll repeat the statement when we get back

together.

DR. ZIEMER: There is no other business that will be conducted during the closed session. That should be noted.

Thank you. With that, we'll recess for lunch and try to be back by 1:00 o'clock.

(Whereupon, the public meeting was in recess from 11:43 a.m. to 3:30 p.m., during which a closed Executive Session was held from 1:07 p.m. to 2:55 p.m.)

CLOSED SESSION REPORT

DR. ZIEMER: As we reconvene, I'd like to report to the assembly the results of the closed session. During the closed session the Board approved the following, relative to our contractor. We approved the scope and cost for task one, site profile reviews for the upcoming year, the -- and I am allowed to give you the bottom line figures, we -- and I'll do that. That's been approved in the amount of $1,204,948.

Procedures review, task three, approved in the amount of $416,224.

Task four has not yet been approved. There will be additional discussions on the scope,

and we expect to have that resolved at the October meeting, so task four will continue through the next four to six week, roughly, on existing funds.

Task five, Special Exposure Cohort, which is a new task, has been approved for -- that is the funding for the -- for the contractor to assist in the reviews of the Special Exposure Cohort petitions, funded in the amount of $917,341, and a new task for program management by the contractor in the amount of $217,891.

Issues relating to task four, the scope of task four, will be taken up in open session by the Board, probably at the next meeting. I expect it to be on the agenda for the next meeting. It has to do with the numbers of reviews of basic and advanced reviews.

Now the other -- other quick issue I need to take care of is it's been discovered that in the assignment of our dose reconstruction teams we have assigned to the Roessler/DeHart team an X-10 Oak Ridge case where Dr. DeHart has conflict of interest. So we need to reassign that. It's case 201. I think an easy solution for that would be just to reassign that to a

different group. Why don't -- why don't we just move that to Owens/Munn, if that's agreeable?

MS. MUNN: Sure. Which one is it?

DR. ZIEMER: That's case 201. It's an Oak Ridge X-10 case. I believe that will solve the issue. I'm not aware of any other conflicts in --

DR. MELIUS: I'm okay.

DR. ZIEMER: Oh, and -- okay, Melius is okay. He hadn't seen their list earlier. So with that change, if there's no objection to that, we'll make that change in the team assignments for dose reconstruction reviews.

Prior to the lunch break we had just heard from Dr. Makhijani on -- oh, I'm sorry.

DR. WADE: Could I make just one quick comment on the work in the closed session, and now I've lost my point -- oh, you know, we -- we've done this action based upon an assumed action on the part of Congress. We don't know what action Congress will take in terms of, you know, budgets and appropriations and -- so what we've done is based upon assumed action on the part of Congress. We'll adjust accordingly.

DR. ZIEMER: Right, I forgot to mention that, that those approved numbers are based on a Congressional request. If -- if the budget numbers are different, then we may have to adjust.

REPORT FROM SUBCOMMITTEE:

MALLINCKRODT SITE PROFILE REVIEW

(CONTINUED)

Dr. Makhijani had just completed his presentation prior to our lunch break. We want to open that back up for discussion. And Arjun, if you're prepared, we'll just open the floor -- you can use the mike right there, I guess, unless you need to get your slides back out. But Board members, do you have questions -- go back to Dr. Makhijani's presentation.

(Pause)

DR. ZIEMER: I want to clarify something on the illegible data issue. It was my understanding that now we are going back and getting better copies of that for both the contractor and the Board -- Jim?

DR. NETON: That's correct, I forgot to mention that this morning, that we have gone back to Germantown to the Office of Worker Advocacy and recaptured the 451 pages of radon breath data

that are in their possession.

DR. ZIEMER: And was it correct that it appears that the main issue there was where the decimal points occurred on some of those, or were there some other --

DR. NETON: Well, there are other issues.

DR. ZIEMER: Other issues as well?

DR. NETON: Just illegible entries, and there were some entries that appeared to be fairly high values, and it wasn't clear -- at least to me -- whether the decimal point was missing or they were actually high. We're going to, you know, zero in on those entries and make sure that we understand what they are.

DR. ZIEMER: The original sheets are in your possession or are they at Germantown?

DR. NETON: They're in Germantown at the Office of Worker Advocacy. They were originally at the Health and Safety Laboratory, which was a DOE laboratory, but then they have since moved them to Homeland Security, so OWA assumed possession of them.

DR. ZIEMER: Do we have a fair amount of confidence that new copies of those will solve this problem or do -- does someone need to go

on site and verify or will you go on site and verify the numbers?

DR. NETON: We are on site. I mean we've --

DR. ZIEMER: You will --

DR. NETON: -- had a team there the last two days.

DR. ZIEMER: Okay. Okay.

DR. NETON: And they are looking through every image and where, if the copy is not legible even under their best of circumstances, they --

DR. ZIEMER: They will so identify it.

DR. NETON: -- they will be working with a team to make sure that, you know, the page that is not -- can't be scanned properly is going to be -- the data will be captured in some form.

DR. ZIEMER: Okay. And then you'll share these with the contractor?

DR. NETON: Absolutely.

MR. GRIFFON: Just to clarify 'cause I think I initiated some of this, it's not only illegible. I mean I've -- and I -- you know, not to dispute completely, but I -- I pulled off from the raw records the ones that I could clearly see with discrepancies in '54, and if -- if you still are concerned about that -- I

mean there's -- there's three or four dates in 1955 where the whole day of data is missing, which includes about 15 data points. So it's not -- it's not simply --

DR. NETON: Well --

MR. GRIFFON: -- an issue of illegibility. It's -- you know, there's some disconnect between the raw data sheets and the database.

DR. ZIEMER: Thank you. Jim?

DR. NETON: And that's -- I think we tried to address that this morning. When we looked at those dates, and I believe they were August mostly, where we actually had samples for those people at a later time -- 98 percent of the samples that were missing in the snapshot we took, anyways, in August -- we found additional data. And we need to remember that radon breath samples are integrating samples. I mean in the sense that you're looking at a cumulative body burden of radium, so it's not like you would have missed some large intake if you had to wait three to six months to recollect the sample.

DR. ZIEMER: So you are able to identify the individuals for whom those points were --

MR. GRIFFON: Yeah, that's --
DR. NETON: The names are in the data-- on the data sheets.
MR. GRIFFON: This is not -- I'm not talking about lost versus not analyzed ones. I'm talking about data points, and I -- 9/19/55, 9/12/55, I got about 16, 17 data points on each of those days.
DR. ZIEMER: Those are September --
MR. GRIFFON: That were not in the CER database, right. And --
DR. NETON: Right, right --
MR. GRIFFON: -- I'm not disputing that the -- you're -- you're correct, Jim, in that assumption for an individual basis radon -- radium dose estimate off the -- off the radon breath, but we're looking at the distribution of this data and back-calculating intakes for the coworker evaluation.
DR. NETON: Right, and I think -- I hope I got the message -- I gave the message properly, that we are going to re-code the entire 451 pages and not leave -- leave -- you know, not just rely on the CER database. I mean this will be the HASL dataset that will be coded and

analyzed.

DR. ZIEMER: Thank you. Okay. Other questions now for Dr. Makhijani?

Yes, Wanda, uh-huh.

MS. MUNN: Do we have a hard copy yet of that last slide of yours, Arjun, that we didn't -- is it possible for us to get that?

DR. MAKHIJANI: Yes, I haven't printed it out, but I will -- I will go to the business center -- will tomorrow be all right or should I do it right away?

MS. MUNN: Just -- even an electronic version, just as long as I can add it to the material we already have.

DR. MAKHIJANI: Sure, I'll get -- I'll get an electronic -- I'll send an electronic version to the Board by e-mail tonight.

DR. MELIUS: Yes.

MS. MUNN: That -- that would be most appreciated. It seemed there was some pertinent information there that we hadn't had before and I --

DR. MAKHIJANI: Yeah, I just -- I wrote it up actually this morning, so --

MS. MUNN: I'd appreciate it. Thank you.

DR. ZIEMER: Okay. There are no other questions for Dr. Makhijani? Okay, thank you very much.

DR. MELIUS: Just --

DR. ZIEMER: Oh, yes, there is.

DR. MELIUS: Wanted to know -- it's a logistical -- assumption is that you will be around tomorrow morning, Arjun, for the --

DR. MAKHIJANI: Yes.

DR. MELIUS: Okay.

DR. MAKHIJANI: I'm scheduled to leave about -- I think 3:30 or 4:00 o'clock.

DR. MELIUS: Thanks.

DR. ZIEMER: Okay. Thank you. Board members, do you have any additional questions or comments relative to the site profile review, the Mallinckrodt site profile review?

(No responses)

We will return to -- oh, Mark, are you --

MR. GRIFFON: Are these questions for Jim or Arjun?

DR. ZIEMER: Jim or Arjun or just points you wish to raise.

DR. MELIUS: I just have one more logistical question regarding tomorrow morning. Is there

going to be a presentation by NIOSH relevant to the Special Exposure Cohort petition evaluation tomorrow?

DR. ZIEMER: My understanding is that NIOSH is planning a --

DR. WADE: A very brief presentation.

DR. ZIEMER: -- presentation. The peti--

DR. MELIUS: Is there a handout or something relevant to that?

DR. WADE: No.

DR. MELIUS: So -- okay.

DR. WADE: It'll just be some comments made.

DR. MELIUS: Okay.

DR. ZIEMER: Okay. And the petitioners also will --

DR. WADE: The petitioners have an opportunity --

DR. ZIEMER: -- have a presentation.

DR. MELIUS: No, I -- yeah, that's just -- I'm trying to see if there's other -- follow up on Wanda's question, was there other material that it'd be nice to have tonight to look at and --

DR. ZIEMER: Right. Thank you. Mark?

MR. GRIFFON: I just was wondering if -- if Jim might go in -- a little bit into the -- how the

air sampling data was used and how the 95th percentile was established. I believe it was -- this -- the full set of data was the DWA data from the CER database --

DR. NETON: Correct.

MR. GRIFFON: -- as well? If you can just explain -- is it --

DR. NETON: Actually --

MR. GRIFFON: -- using the same procedure as the radon breath? 'Cause I -- I actually spent a lot of time with the radon breath, with the assumption that that was the driver, and a few days ago I think that's kind of --

DR. NETON: Well --

MR. GRIFFON: -- turned on me and now I want to look at the --

DR. NETON: Well, I'd like to correct -- I think that was a misconception. I think at the last Board meeting we clearly indicated that we would use the higher of the two values, which included the air sampling data. I mean the only thing that's really changed here is that rather than rely on the ratio of radium to uranium -- or the uranium to radium values, we decided to use the radon breath to bound the

radium intakes. And I think I indicated that at the last Board meeting, but we had -- we had committed, at least as of the last Board meeting, that we would rely on the higher of the two values. You -- in relying on air data. So we are doing that.

Now the daily weighted averages, we do not use the information that was in the CER database. Those were individual daily weighted averages assigned to people. What we did was we went back to the dust study reports themselves. If you recall, on an annual basis for a while they -- they went through -- you know, during the operations, and would conduct a dust study campaign where -- for instance, in 1950 they took -- I didn't count it exactly, but I would say somewhere probably around 500 air samples over a period of time -- a month or whatever it was, I've forgotten the exact period -- and tried to describe in some detail the air concentration distribution, and then they collapsed those values into individual job -- occupation categories, so you have a ranking of occupational exposures by -- you know, by dust concentration. And so we took all that data --

those data, analyzed them and we did look at the entire plant.

Now the reason we did that is it was somewhat difficult to decipher -- you know, it's a judgment call as to which was -- you know, when I say raffinate, I'm particularly speaking about a thorium-bearing area. It's hard to judge exactly what those are. Now keep in mind that the radium-bearing ores are at least a factor of ten higher in specific activity. I mean the radium concentration of those ores is at least ten times higher on a unit basis per milligram of material. So if you use the entire plant distribution, you're -- you're certainly going to bias your results higher than if you only looked at the raffinate areas. And the samples that we could find, we did determine that we're about a factor of two higher using the general plant description, and we just felt more comfortable that we had bounded and bracketed the exposures doing that. So I don't know if that --

MR. GRIFFON: And these individual -- you went back to the -- the dust studies and hand-entered the data again?

DR. NETON: Yes.

MR. GRIFFON: Okay. And did -- did you guys look at that -- did SC&A look at that data? 'Cause I didn't.

DR. MAKHIJANI: No, actually one of my questions for Jim that -- is how much data that's clearly identifiable as AM-7 air concentration data is there? Because I looked at the site profile and then I did a scattered search -- not systematic 'cause there wasn't the time -- for AM-7-specific air concentration data, and I don't have a good sense of what the raw databases is like, actually, on which this judgment was made that 607 dpm per cubic meter is double the daily weighted average of the thorium areas. I don't know what that database for the thorium areas is.

DR. NETON: I don't have an exact number of individual air samples, but I do know that we were looking again at daily weighted averages by job code, or job category. So when you collapse 500 air samples into -- I'm -- I'm -- remembering, but something like 40 or 50 job categories in the plant, we only ended up with around 11 of those job categories that were, in

our judgment, uniquely tied to an AM-7 type area. And those values were the ones that came out about a factor of two lower than using the entire Plant 6 distribution, which included, you know, ore handlers and a lot of other areas where there certainly were more -- operations that were more inclined to have higher airborne activities.

I will say we did exclude some areas that we thought would be lower job categories, like in the warehouse operation and that sort of thing. So you know, we tried to pick what we thought was a representative -- not representative, but a good indication of what the range of exposures were, but we did not truncate it to the AM-7 areas, and I think it's fairly reasonably bounding of the air concentrations.

MR. GRIFFON: I'm try-- Jim, one last on that. I'm trying to understand the difference for the CER database versus the dust studies in this case. And I think, if I'm correct, in the dust studies they did daily weighted averages for -- for say a maintenance mechanic in a certain area --

DR. NETON: Right.

MR. GRIFFON: -- but then they might have assigned that to six or seven maintenance mechanics --

DR. NETON: Well, exactly, and that's why we didn't -- yeah, that's right.

MR. GRIFFON: Is that correct?

DR. NETON: That's correct.

MR. GRIFFON: So you didn't want to use the CER database data because that would be weighting it, essentially, or --

DR. NETON: Yeah, it would weight it by -- you know, if there were five -- 90 percent of the samples were one -- you know, in one cate-- one work category, so this is truly a representation of the job category distribution in the plant. So in other words, if they -- if they over-sampled a lot of people that were of low categories, you would end up biasing your values low. But this is by occupation code, the distribution, so -- and I don't recall where -- it'd be interesting, I don't have this off the top of my head, but what -- what job category the 95th percentile ended up be-- you know, approximating. But again, you know, keep in mind that the K-65 areas are at least ten

times higher in specific activity than the AM-7 areas. You have huge concentrations of radium in those ores. Or not in the ores, in the raffinates.

DR. ZIEMER: Yeah. Thank you. Arjun, please.

DR. MAKHIJANI: Yeah, I -- you know, I think that as a general matter, in terms of expecting higher concentrations in certain areas, on average this would be okay. The thrust of our recommendation in terms of the work remaining in a proper -- I mean in a technical sense, it almost doesn't matter whether it's higher or lower. I know it matters to the dose result, but if you're doing -- if you're doing a dose reconstruction based on the AM-7 area or job descriptions, assuming that there's thorium-dominated material there, then -- and assuming that radium and so on doesn't exist, it appears to us not quite technically kosher, if I might say that, to use the plant-wide 95 percentile of the averages. It appears to us to be more technically sound to limit the air concentration study to the 95 percentile of the area values of the samples that were taken and -- and that -- that database we haven't studied

or tried to evaluate. We did illustrate the method to be applied, to some extent, in April. And that's -- that's one of the important recommendations we've made.

DR. ZIEMER: But you don't yet know the impact of doing that way, is that right?

DR. MAKHIJANI: No, we do not know whether that number will be bigger than 607 dpm per cubic meter or not. I think it -- there's a fair chance that it will be bigger, based on what NIOSH has told us, that -- that the average to be expected in the AM-7 areas is on the order of 300, because they said it's doub-- 607 is double. So --

DR. NETON: (Off microphone) (Unintelligible)

DR. MAKHIJANI: You've said that 607 is double of the AM-7 are average, so I would imagine then the AM-7 area average is on the order of 300.

DR. NETON: (Off microphone) (Unintelligible)

DR. MAKHIJANI: Right, it -- but the 90-- I don't know what the 95 percentile of the AM-7 area would be.

DR. NETON: (Off microphone) (Unintelligible) was the 95th percentile.

DR. MAKHIJANI: That has not been my understanding.

DR. NETON: I'm sorry, there's a misunderstanding here. The 95th percentile of the AM-7 area data is a factor of two lower than the 95th percentile of the K-65 area samples.

DR. MAKHIJANI: (Off microphone) (Unintelligible) was not what was said.

DR. NETON: Well, I mis-spoke then, if that were true -- if that -- and I certainly would wish to correct that.

DR. ZIEMER: Okay. While Arjun is checking that, let me see if there's any other questions or comments -- yes, Denise, would you like to add to this?

MS. BROCK: If I could, and I think -- poor Arjun, I think this one may be directed at him. I was just wanting to ask -- according to NIOSH, the protactinium to the thorium and the actinium, the ratios of the protactinium to the thorium and the actinium to the thorium are approximate, and I was curious if -- if there is a one percent error in the protactinium to thorium ratio, what is the impact on the dose

to the organs, and how important is it to get this correct, the ratio correct, and could you give an example?

DR. ZIEMER: You're really asking about the sensitivity of the -- of the results to those particular ratios --

MS. BROCK: (Off microphone) The dose to the (unintelligible), right.

DR. ZIEMER: -- I think is the nature of the question. I don't know if -- Jim or Arjun, if you can address that.

DR. MAKHIJANI: I think --

DR. ZIEMER: It's certainly a good question.

DR. NETON: Well, it depends on which organ and -- and to have some clarification on the discrepancy in the ICRP versus the Federal Guidance Report, those conversion factors. But certainly for -- for metabolic organs where actinium and protactinium drive the dose right now, there'd be almost a corresponding difference. So you know, one percent change might change the dose by one percent. But I think one needs to consider that the ratio that we've developed has selected protactinium concentrations based on the Sperry cake, which

is known to have elevated concentrations, is a good source of protactinium, compared to the AM-7 ores. So we believe this 13.3 percent value that we've -- we've assigned is -- is a -- in our opinion, a conservative limit on the value for protactinium.

DR. ZIEMER: Okay. And Arjun?

DR. MAKHIJANI: I agree with Jim that -- my reference point -- I've been assuming that the ICRP and Federal Guidance Report were the same, and we seem to have stumbled upon this --

DR. ZIEMER: Right.

DR. MAKHIJANI: -- discrepancy kind of through a back door or backed into it, and it will depend on -- if you accept the Federal Guidance Report values as being the more recent, or apply those, it would make some difference. So I think Jim is entirely right. We're not in disagreement.

Well, I think -- you know, I currently, looking at the state of the write-up in terms of -- NIOSH has found quite a lot of documentation about process chemistry, about where these various radionuclides went, that I have not had a chance to evaluate. I do think that a lot of

good work has been done in terms of establishing what these ratios are on the -- on first reading, but I -- I cannot tell you my own opinion of -- we recommended that this issue should be studied further, and they have studied it further, so I don't know whether -- you know, what my opinion would be if I reviewed it.

DR. NETON: Just a brief follow-up on that remark. I do have the documents here so that they can be reviewed, if -- if wanted to. I think one of the references -- and it's important to point out, also, not only did we assume protactinium was there in the concentrations represented by the Sperry cake, which we believe to be an overestimate, but we also have assumed that the actinium -- which, as you may have seen earlier today, delivers a very large dose per unit intake -- is in 100 percent equilibrium with the protactinium. And we have at least one publication that indicates that that is not -- not the case, an Argonne laboratory analysis indicated that it was from in equilibrium, but you know, one reference does not make a whole study and so we're -- you

know, we're willing to -- to, you know, take a -- make the assumption that it is in 100 percent equilibrium.

DR. ZIEMER: Okay. Further comments or questions on... Okay. Thank you. Then we're going to leave that topic for now. We will of course be returning -- well, this evening of course we'll have public comment period from many local folks, and then tomorrow will be more of specifically addressing the petition.

TASK FOUR SCOPE DISCUSSION

One of the other kind of carry-forward issues that emerges from our closed session is an issue related to task four, and that is the scope discussion for task four in terms of basic and advanced reviews. And we began to talk about that in our session and realized that the scope discussions certainly are appropriate in the open session, so we reserved discussion of that to this time. And I'm going to suggest, if the Board wishes to open that issue now, discussion with our contractor, with the Board, as to what you might wish the contractor to do this next year with respect to the issue of advanced dose reconstructions

versus basic.
And I might add that in the description of the task, as the contractor described it to us, the contractor indicated that many of -- many, perhaps all, of the dose reconstructions to date are probably more advanced than basic, but less advanced than advanced. In other words, they are somewhere in between the two.
In any event, we have a kind of dilemma in terms of defining what next year's scope would be, so I'm going to open the floor if any of the Board members wish to have input on that, or our contractor -- and John is prepared to talk about this, too.
DR. WADE: If I might, in adding to the framing of the issue I'd also like to know from the Board what specifically we would like to see the contractor prepare for us and submit to us before the next meeting so that we could take our decision in light of that information.
DR. ZIEMER: 'Cause the -- this particular item -- we did not reach closure on the cost because we had not -- we really have not defined what we want the contractor to do in terms of scope now, vis-a-vis the so-called advanced dose

reconstructions.

Okay, Wanda Munn.

MS. MUNN: Based on the discussion that we had and the comments of the contracting officer with respect to allowing some flexibility and such -- some judgment call on the part of the contractor, it might be wise for us to consider looking at the upcoming 20, 22 cases --

DR. ZIEMER: Twenty.

MS. MUNN: -- that we have -- 20 that we have.

DR. ZIEMER: Oh, yes, we have 22 that are in process, yeah. Yes, you're correct.

MS. MUNN: Perhaps we could identify a range of percentage, from ten to 25 percent of those cases, at their discretion, to be identified as advanced cases since SC&A has indicated to us, and I think with some validity, that sometimes it's hard to identify what really should be considered an advanced case till you've had an opportunity to look at it.

DR. ZIEMER: And while you're pondering that, Board members, I also remind you that there was some concern that we sort of leave it up to the judgment of the contractors as to when to do an advanced case and when not, so there is that

issue, also -- as opposed to assigning a priori certain numbers or actual cases to be advanced and certain others to be unadvanced.

Okay, Richard, you have a comment, and then Henry.

MR. ESPINOSA: I'm afraid to tie the contractor's hands on this issue and would like them to have the ability to decide which ones are the advanced cases and which ones aren't the advanced cases, although I am afraid that the cost of this could also get out of hand. And I'm in agreement with Wanda, if we can stipulate a percentage of this, I would feel a lot more comfortable with that.

DR. ZIEMER: Henry?

DR. ANDERSON: My question kind of is what -- what is the -- what is our purpose for doing the advanced? If what we wanted to do is do a sample of these and then select some to do an advanced on so that it would be a mix of kinds so we get a sense of is the current process that they're using catching all the information, we would use, you know, the review of the site profile here that (unintelligible) have been as much attention to the raffinates

if we hadn't raised that issue. I'm not sure when the contractor goes through and they say well, we'd like to pursue this more in depth, that may capture some of that, but I'm not sure that -- unless you necessarily look -- that you would know whether the underlying process -- that we probably want to do -- we may want to focus more of the in-depths on those that were done comprehensively versus those that went through either the overestimate or the underestimate. And I think we probably want to run the whole thing on some of those -- run the over and under and see what it would actually be. Now we may not need to do many of those, but I'm not sure those'd come up in their standard review if they look at it and it basically seems to be following their procedures if you didn't go and do the actual dose reconstruction on the whole thing, we wouldn't know what -- how effective it really is. That's my only question, it's kind of what -- what do we want from these reviews? If what we want to do is let them determine that when we look at it -- gee, you know, we're a little worried here, this seems to be a softness or a

-- that's one approach to it. But that isn't necessarily as systematic as I think our original intent is.

DR. ZIEMER: Okay. Robert, then Jim.

MR. PRESLEY: I think our original intent was to have an audit of cases. I would like to see us come back or -- or do the fir-- this 20 or 22, whatever it is, and then let them come back with us. Do it on a basic, then y'all come back with us -- SC&A come back to us and say okay, here's two or here's 22 that we think need to be re-evaluated, and this is why we need to be re-evaluating these things. To me, that's the audit. And then we tell you which ones we want to be re-evaluated.

DR. ZIEMER: Okay. Jim.

DR. MELIUS: If you look at the page 6 of the proposal that we received from SC&A, they indicate that there are two elements of the advanced review that they have not pursued and they basically aren't -- not intending to pursue. The first one is to evaluate other relevant sources of data, and it lists a bunch of them, that are included in the site profile database. And so I mean it -- regarding that

particular site. And the second one is the issue of an adequate effort has been made to research co-located workers and other historical records to characterize the individual's work history.

Now it seems to me that the first issue of identif-- evaluating other documents and so forth for a -- a site where a site profile review has been done, that it is appropriate that that be -- that task should be included in the site profile review. I -- I agree with that.

However, in cases where a site profile has not been done or where a site profile review has not been done, then I think some level of effort ought to be made, in an advanced review, to -- to address that particul-- particular objective. I think we have to recognize, I think, that in the case of a -- where the site profile review is in the works or something, we may want to defer on that 'cause it just -- it would just be such a large scope and I think would be hard to manage. But -- but I would suggest we take some approach like that on that particular task.

On the second task, evaluate whether an adequate effort has been made to research co-located workers and other historical records to characterize the individual's work history, I think that still needs to be done on advanced reviews. It's a component of that, it's something we wanted done. We didn't want it done every time. And is there a -- I'm not sure that we want to triage that too much. Did -- should it only rely when there's some mention in the CATI interview of -- of you know, some hint that they should be looking at -- well, a lot of these are, you know, survivor interviews so they're not going to have that information. And some level of effort I think needs to be put into attempting to evaluate that. It's an important part. It's something we've raised concerns about. If you remember when we went through the -- lot of debate in this Advisory Board about the whole issue of going back and interview-- re-interviewing, and this was sort of the compromise proposal to that. Let's see if we can approach that without getting into the whole issue of re-interviewing that we can evaluate that issue.

So I would -- I think that's still an important part of advanced reviews and I would not like to see them drop that. They've not done them so we have no record of -- of effort to be able to evaluate it. Until we have some record for that, I would be reluctant to have them drop it. I think we -- we -- in our discussions of -- when we did the evaluation of the budgets and so forth on the initial scope, I believe we discussed the need to -- there needs to be some practical limit to that. I mean they can't go out and spend months at a -- you know, try -- talking to everybody at a particular site trying to see -- you know, do you know anything about so-and-so that might have worked there or about a particular area or -- or something like that. But I think there is an effort in terms of looking at the -- for information that might be -- be relevant and helpful to that. I think to a limited extent they already -- they are doing it with some of the site profile reviews where they go out to the sites and -- and talk to people familiar with the sites, but I don't believe that that's in enough depth to necessarily deal with individual cases and we

want to evaluate it relevant to individual cases.

DR. ZIEMER: Okay. Thank you. Let me also point out while we're talking about scope that the contractor did identify that they, the contractor, believe that they are doing dose reconstructions that are -- I think the term they used is comprehensive. That is perhaps more thorough and at more depth than what we originally defined the basic, although not at the depths of an advanced. And there's some question as to whether the Board wishes them to continue at that level.

Now in a sense it -- they have kept us apprised all through the process of what they're doing, so although this is kind of a new term, the comprehensive, we were in a sense aware of how they were conducting these, and I think we became aware that they probably were a bit more thorough than we had originally defined a basic dose reconstruction. And in essence, either by tacit approval or whatever, we have continued along that path, so I don't want to fault the contractor for doing something that we basically accepted as we -- as we proceeded.

But nonetheless, if we do wish the contractor to do something less, we also need to define that, as well. I just want to put that before you. I'm not proposing that we do that, but I think if the Board is uneasy about the current level, which has some cost implications, then that also has to be considered if you want to have a sharp demarcation between these two because where we're at on the comprehensive -- I think to some and perhaps to me -- appears to be awfully close to an advanced review, with perhaps a few components missing. But again, I just throw that out and stimulate some additional thoughts. I guess, Jim, you're next and then Mark.

DR. MELIUS: Yeah, I think that's a good point, Paul. I would ask the contractor or whoever's familiar with this, that for -- what were we expecting to be able to do next year, in terms of numbers? They -- we've talked -- we're talking only about comprehensive, but I think we had some goals in terms of basic and advanced.

DR. ZIEMER: Yeah, I think -- I think the contractor was bidding on the basis of 60

comprehensives.

DR. MELIUS: Yeah.

DR. ZIEMER: Okay? That was what we got. We got -- we got a bid of 60 comprehensive reviews, and I'm simply pointing out -- we don't have a category called a comprehensive review, so this Board can decide that that's -- that's the kind of review we want, or we can go back and say well, back down and do basics and advanced and here's the numbers, but that's the nature -- that's really what the heart of the discussion is. And I think we need to help the contractor on that, too, and we need to decide what we need. If we like what they're doing, then we say good, that's -- you know, we'll continue with that and then we'll add to it with something -- you know, an advanced comprehensive review or whatever you wish to call it, more comprehensive. Okay.

DR. MELIUS: Before -- I guess my -- my question wasn't answered, which was --

DR. ZIEMER: No.

DR. MELIUS: -- was -- I know it's the 60 comprehensive, but originally were we thinking of 40 and 20 or what -- what was --

DR. WADE: Forty basic, 20 compre-- 20.
DR. MELIUS: Okay.
DR. ZIEMER: Oh, yes. Okay, yeah, that was the --
DR. MELIUS: Yeah, okay, and my second sort of factual question is, of the ones that are currently underway, the reviews that are currently underway, what is the breakdown in terms of basic and advanced? Aren't they supposed to be doing advanced now?
DR. WADE: Right, these last 20 were to be advanced.
DR. BEHLING: The first two sets were all basics and the last, the third, which we are about to finish, are supposedly advanced.
DR. MELIUS: Uh-huh.
DR. BEHLING: So that's -- that was our charter.
DR. ZIEMER: Yeah. And one of the problems is, they're all looking alike.
DR. MELIUS: I mean, frankly, they're not -- I mean when we -- we're going to have to make a judgment, but we tasked them doing advanced reviews and I think they're telling us now they don't intend to do them, which is a violation

of what we --

DR. ZIEMER: Well --

DR. MELIUS: -- we requested.

DR. ZIEMER: Yeah, yeah, I -- I --

MR. GRIFFON: (Off microphone) (Unintelligible) scope items (unintelligible).

DR. ZIEMER: I'll go to bat, in a sense. I think they have told us what they're doing, but it does appear to be somewhat between our parameters, so we need to define this and, you know, help them with their task of -- Mark, go ahead.

MR. GRIFFON: I actually would like to hear what -- what the difference -- 'cause I actually think that what they've done is basic reviews, I thi-- and it doesn't mean I'm not happy with the product, but I think if we look down the scope items in basic reviews, I don't know that they have any additional scope items that they've added. I think one thing we've had in this first set of 60 now is -- especially in the first 20 -- there was a learning curve. You know, they -- a lot of the first 20 cases, the work involved to assess the case was going back to the hard copy procedures

and doing hand calculations in some cases by Hans. There were workbooks sitting out there that could have been used for that function and we could have been -- and on the other hand, when there were workbooks there that were there to support calculations, I'm pretty sure that we never went back and looked into the basis of those workbooks. That wasn't part of this basic review. So that we checked the calculations, we checked the numbers on that, but never said is this -- is this workbook set up correctly, what's it based on, are the assumptions in the workbook correct. That was beyond the scope of this basic review. So I don't -- I don't think we're out of line with the basic, but I agree with Jim that these are two critical items that we had a lot of discussion about, and I would -- I would at least think that we deserve to do some with this scope in mind and reserve judgment until we see how they come out.

DR. WADE: Right, looking at -- at the -- the amount of work that scheduled for last year, that first set of 62, there were to be 40 basic, 20 advanced, two blinds. We've received

-- we've received the 40 basic. They are working on the next 20 -- 22. You can tell them now you expect those to be advanced reviews. You can talk to them about that. You can imagine, based upon what you know now, what you'd like to schedule for next year. All your options are open to you now, and it's a matter of just your deciding what you want to ask them to do.

DR. ZIEMER: Yeah, and it may be that in fact what you're calling comprehensive is -- is really a basic -- maybe a little more thorough than we had originally thought, but --

MR. GRIFFON: But clearly these steps that they're indicating are not in there, so...

DR. ZIEMER: Yes. Hans and then Henry, you have a comment here.

DR. BEHLING: Yes. Is this mike on?

DR. ZIEMER: Yes.

DR. BEHLING: For instance, let me give you an example of the difficulty, and I'm trying to accommodate Dr. Melius on the issue here, but you'd mentioned the need, for instance, to deal with the coworker, but coworker data is really a last resort that comes into play when there's

an absence of primary data. If I have a case where I have full dosimetry data for external exposure and bioassay, why would I -- what would be the point in me pursuing coworker data?

In the last 22, which is the only advanced cases that we've been asked to do, for instance, as another example of difficulty, we had a couple of mins -- minimum. In other words, they only did a -- the most simplistic of dose reconstruction because it was enough to take them over 50 percent value, and it involved only internal exposure at the expense of ignoring ambient dose, external dose, occupational medical dose, et cetera. My question again, what would you ask me to do in behalf of a case where even a partial dose reconstruction put the guy over 50 percent level?

DR. MELIUS: I think that, as with other elements of your reviews, if the particular element is not appropriate for that particular case, then you report it as such. And that's what you've bid on doing and that's what we -- we expect you to do. I mean I -- as before, I

guess I -- I'm just puzzled by why that suddenly generates a change in scope for the -- for what we're asking to do. I think -- you know, I guess...

DR. WADE: Yeah. I mean I --

DR. MELIUS: I mean we're not expecting you to pursue something that can't be pursued or isn't appropriate or relevant, but it doesn't mean that it shouldn't be pursued in cases where, you know, coworker data might have been used, or something like that, that --

DR. WADE: I think --

DR. MELIUS: -- that's all.

DR. WADE: This could well be an issue of semantics, and I think you need to continue to pursue your discussion.

DR. ZIEMER: Mark, and then Wanda.

MR. GRIFFON: No, I was -- I'm sorry.

DR. ZIEMER: Okay. Wanda -- oh, Henry and then -- well, we'll catch --

DR. ANDERSON: Go ahead.

MS. MUNN: The only item that seems to be persistent that hasn't been addressed is the issue of pursuing data outside of the channels which we have already identified as being

appropriate between SC&A and NIOSH. We did indicate that we needed to discuss that item. If that's -- and it seems that is possibly the largest hurdle to defining precisely for our contractor exactly what we need to do. If there is a case where it is appropriate for him to be searching other records, then we have not identified that for them yet. And if that's going to be incorporated in our view of advanced audit, then we probably need to do that now.

DR. ZIEMER: Uh-huh. Thank you. Okay, Henry, then Mark.

DR. ANDERSON: Yeah, I was going to say on that similar thing, I think we want, to a certain degree, a checklist. In other words, if they're doing a comprehensive, they would say it wasn't appropriate in this case to look for the coworker or whatever, and then we would either look for more cases -- and the other issue could be if their feeling is, or our feeling is, that what we've gotten to date is basic -- is more than basic, it could well be that now, or having been through it, that what we expect for basic costs more than was

initially thought. And so I'm not sure, of those that have been done, what we would leave out of being considered a basic. And that's, I guess, what I would ask them. What -- if they're saying this -- what we really got was -- were more than we asked for, well, what was that extra that would not be part of a basic? Now -- I mean I would suggest that what we got that was the basic, that was very useful and that's probably the level for basics we'd want. We haven't yet seen -- and it may be many of these -- they'll say well, your advanced wasn't appropriate in this case, and -- you know, then it would be still considered a basic. And when it comes along that it was appropriate, I mean that may be something they'd come back to us and say well, this was a basic but we think this is a good case to do an advanced on, and then we would come back to them and say do we think that's right or wrong.

DR. ZIEMER: Okay. Mark?

MR. GRIFFON: I was just going to respond to Hans's example where you have a complete set of individual urinalysis data and badge data, you know, what -- what can you do with -- with

coworker data. And I mean I -- I guess I don't know what a complete, comprehensive set is. And -- and one thing I would do with coworker data, possibly -- and it may be inconclusive, too, but possibly is to look and say, you know, I've looked at four people this person mentioned as working with all the time, and you've -- and you look at their data and you find out that they've got exposures much lower or much higher than the individual in question in your DR review, and you say -- you say wait a second, you know -- and I'm not saying that coworker comparisons are the end-all, sure. But that may be one thing that -- that would be possible. Or that the coworkers were monitored for something that the individual wasn't even monitored for. They had whole body counts when the individual only had urinalysis. Why is that, were they doing a different job, were they really coworkers, or -- or they were on a monthly program and all the coworkers were being monitored weekly. I mean I there's a bunch of things I could think about to look at with coworkers. And it may be that it just supports the original argument, that that's

part of -- that's the randomness of it, I guess, you know.

DR. WADE: I mean if -- if I could even read the words -- I mean the -- the task was (reading) evaluate whether, for cases involving survivors, there has been an adequate effort to research co-located workers and other historical records to categorize the individual's work history.

I think Hans is saying yes to that question in the case that he brings before us. The question is, does the Board agree with that, or does the Board want the effort made, regardless of whether Hans thinks the effort is appropriate, to check methodology. That's something you have to decide.

DR. ZIEMER: Well, and let me add to that, in the case that Mark mentioned, hopefully if you did what Mark described it would simply confirm that in fact everything is in order. If in fact you found those kind of discrepancies and there was a pattern for that, then you would say, you know, the dose reconstructors have to add this step when they do these things because we're finding too many cases where you can't

confirm the validity. But that I think is what you're getting at. It's an audit function that says yes, things do square, even if you check them independently.

Now, Jim.

DR. MELIUS: Yeah, what I -- hopefully this will -- I'd like to make a proposal that would allow us to go forward with this based on some -- some of this discussion, and I think it would also take into account that we will have an opportunity to evaluate advanced reviews and then maybe come up with some better decisions. As well as I think we're starting to get into some of the more complicated cases that we've chosen. Certainly the 20 this time I think will raise new issues and so forth, and we may have a better idea as we go along.

But I think we should ask our contractor to develop a proposal -- the scoping would be 40 basic cases and 20 advanced cases. And then as the rest of the scope would be what we asked them to do this time as they relate -- the two blind cases, et cetera, the issues with the -- the process to try to resolve any issues and reports to us and so forth, as they've --

they've outlined -- do that. I think that they should -- the advanced reviews should continue all -- contain all the elements that we included in our original scope, with the proviso that the -- that if these other relevant sources of data have already been -- are being addressed in the site profile review that that -- they need not to be that -- step need not be repeated in a individual dose reconstruction review.

And secondly, I think hopefully maybe we've clarified what we have meant by this issue of researching co-located workers and obtaining further information, where appropriate to that particular case. But they should prepare a proposal directed at that, come back to us. We may decide, as we evaluate the results from these next 20 advanced cases and what they will prepare for us early next year, we may want to modify scope or something. But I -- but I think we can do that in the course of next year and as we and they gain more experience with this process. And if we have to then modify the contract in some way, so be it, but at least we can do it with -- on the basis of more

information.

DR. ZIEMER: Jim, I'm going to ask -- I think you intend this to be a motion, and I'm going to suggest -- since perhaps it was a little wordy. That's not meant as criticism, but it might be helpful to the Board to have it delineated, and we could act on it tomorrow --

DR. MELIUS: Okay.

DR. ZIEMER: -- in our session if we could get it worded. I also would raise the issue of -- did you intend to say anything about the scope of the basic reviews, or do we wish to understand the basic reviews to be what has been described as comprehensive? And if that's -- if that's an issue, we need to deal with that I think in the same motion. If we instruct them to do 40 basics and -- and 20 advanced, and if the basics are different from what we currently are using, then we need to spell that out, as well.

DR. MELIUS: Yeah, okay --

DR. ZIEMER: That's all I'm saying.

DR. MELIUS: I don't think they are, but the basic are basic, and I sort of reject the use of any sort of new terminology. Let's not --

DR. ZIEMER: Okay.
DR. MELIUS: Let's stay with what we've -- what we've been doing so far and --
DR. ZIEMER: You're suggesting --
DR. MELIUS: -- so forth.
DR. ZIEMER: -- that you're comfortable interpreting the basic as the comprehensive ones.
DR. MELIUS: I'm comfortable that what they've been doing so far --
DR. ZIEMER: Is basic.
DR. MELIUS: -- is basic reviews, and I think that they've made an approp-- they will present to us what they think is an appropriate -- Yeah.
DR. ZIEMER: Okay. Michael, you have a comment -- is it agreeable with the group that we -- we won't interpret that as a formal motion yet, but the intent is to have a motion before us that will clarify scope so that when we -- and then the -- and then the contractor can come back with a refined or revised cost estimate, if necessary.
Yes, Michael.
MR. GIBSON: I'd just like think -- I think the

cases that they went over -- you know, we've -- regardless of how we wrote up our task, the work they've done, we've all been a part of the process --

DR. ZIEMER: Yes.

MR. GIBSON: -- in directing them, and you know, maybe it's just a matter of wordsmithing, using comprehensive. There's nothing basic about -- I mean we may call it basic. There's nothing basic about doing a dose reconstruction when you have to try to dig into all this information because let's face it, you know, that's why we're here, because of the problem we've had.

DR. ZIEMER: Thank you. Good comment.

DR. MELIUS: And I also should think we should thank our contractor for being as specific as they were in laying our their -- their scope this time, and I think that was -- it's helpful to the process, I just...

DR. ZIEMER: Yes, we do thank you for that.

DR. WADE: And I would remind the Board again that as you looked at this issue of auditing individual dose reconstructions, you've set a certain goal for yourself, and I think it --

which is two-and-a-half percent. I think at some point you need to step back and evaluate --

DR. ZIEMER: Right.

DR. WADE: -- what you're likely to do on that.

DR. ZIEMER: So the agreement is that we will have a formal motion on this tomorrow to act on. John, you wish to...

DR. MAURO: Yeah. As a more practical matter, you know, we're in the home stretch of the last 22, which are -- according to our contract -- advanced reviews. We're in the process of doing what we've been doing on the others, this comprehensive review.

Now as a practical matter, let's -- let's say for a moment -- it's a thought problem.

DR. ZIEMER: Yes.

DR. MAURO: Okay, we're in the middle of doing these, and right now let's say -- Hans, so far you've done about half of the 22. Let's say you've got 11 of them done. Are there any in there that, in your opinion, would -- where, you know, I'd like to chase this one around a little far or I'd like to call up the -- the person who did the dose reconstruction. I'd

like to perhaps go to another record center. I'd like to do a coworker interview. I'd like to interview the claimant, because I think it would add some value for this particular one. These other ones are min/max or they're -- there really won't be -- and -- well, they're all min/max -- oh, yeah -- but again, it's a thought problem. How it bears out in reality is another matter, but for this set of 22 right now, we're in this position where we have in mind what we're going to deliver, but now we have in mind maybe there are some of these that, in our opinion, we could -- if we went that extra yard, those two items that are identified in our proposal, might add some more value and we get a little bit more out of our understanding of the strengths or limitations of a given dose reconstruction. I guess I could use a little guidance from the Board now whether we should be looking at this last set a little bit more aggressively than we -- that we go over and above what we have been doing for the first set.

DR. ZIEMER: Well, as a starting point I think the instruction on this last set is that they

are advanced reviews.

DR. MELIUS: Advanced, yeah.

MR. GRIFFON: All 22.

DR. ZIEMER: All 22.

DR. MAURO: You see, there's --

DR. ZIEMER: So if you have the issue such as Hans raised, I think -- and Mark has suggested how one might think about those. You might think about what -- what does it mean to go into depth on something that looks straightforward.

MR. GRIFFON: But also I mean if -- if -- if you feel these -- these coup-- these items, in particular those two items, don't apply to a certain case -- I mean for now, not applicable and we'll bring it to the work-- we'll bring it to our process, and if Board mem-- if the Board team members feel like you should pursue a certain thing -- you know, it's in the scope. It's not like the Board members are giving new scope.

DR. MELIUS: Yeah.

MR. GRIFFON: That's just -- that's just part of that process, I think. So if you --

DR. ZIEMER: At least you have to consider --

MR. GRIFFON: If you feel strongly there's nowhere to take it -- take it anymore on a certain case, that's all you can do, yeah. You put NA, I guess. You -- you're --

DR. MAURO: The change in paradigm is the idea that -- when we began this process that you could make your selection of 20 cases, another 20 cases, and say okay these we want you to do an advanced review. I don't think that's the reality of the situation. I think the reality of the situation is here's a set of cases that -- that some of them make sense to do an advanced review and some of them -- you know, they really don't. I mean there's no -- in other words, all you could call it -- I don't know what -- it's almost a semantics problem.

DR. ZIEMER: But I think what -- I think conceptually we're saying that we -- we are not judging a priori whether or not you can do an advanced review, nor should you decide, if a thing looks simple, therefore it's not subject to an advanced review; that you at least think about okay, in this particular case, even though it looks very simple, are there some other things that I should look at to confirm

that the data is correct -- or whatever. I think that's what I -- what we're saying, that don't assume --

MR. GRIFFON: I agree that the best-estimate cases lend themself better to these -- the advanced reviews. But for contract reasons -- I mean, you know, that's the cases we had available, so that -- you know. But you know, I would say that -- you know, if you really don't think a item is applicable, just put not applicable and move on. But I think -- I think you have to think about the scope. Even if it looks simple, there may be something there.

DR. BEHLING: A question I raised with Dr. Wade during the break is also one of what privileges are we given -- for instance, I'd mentioned to the Board earlier a case where a person had claimed an injury to his cheek that several years later turned into a melanoma. Now for me to resolve that issue -- there was nothing in the record that suggested he was ever injured, that there was a radiological incidence that was investigated by HP or anything like this. Now for me to go -- take the first step and say was there even such an injury on record with

the infirmary would require me to contact someone and ask for medical records, which I'm not entitled to get, any more than I may be even entitled to contact the claimant himself or his survivor. So at this point in time, with the one month remaining for the completion, for me to let's say turn all of these cases into advanced cases by looking at coworker data and things like that, I would have to first acknowledge to the Board that there are certain issues that have not been addressed yet, such as who am I entitled to contact.

DR. ZIEMER: And I don't know the answer to that and I don't know if we can address it here, but it may be that you will have to do this almost on a case-by-case basis. You identify the issue -- Lew, I don't know, but if -- if the contractor says in order to complete this case in depth, in an advanced way, we need to access the following information -- or at least we identify the steps to -- to achieve closure on it, maybe you won't achieve closure at that point, but is that -- is that the way it has to be approached?

DR. WADE: That was my answer to Hans, that he needs to approach me then with the particular issues and -- and we'll have to deal with them on a case-by-case basis.

DR. ZIEMER: Okay. And again, we can have further discussion on this tomorrow when the formal motion is before us, but I think you've heard at least the -- sort of the sense of the Board on these things, and we certainly want to work together to achieve what the -- what the intent here is. And it's -- it assumes that it's not just the complex cases where you may need to dig down. It may be a simple case that looks so clear that you don't have to do any more that may be the one that really needs the attention. I think the nature of an audit is you don't know a priori, a simple-looking thing -- innocent-looking thing may in fact be a case where there is something amiss.

Okay. Now we -- we have another issue that emerged out of our -- really the scope discussions. One of the -- one part of the scope discussion -- and just put this in the public record -- our -- our contractor has been asked fairly regularly this year to meet with

various staffers on the Hill to review their work products and that sort of thing. The Chair has always objected, to some extent, on the basis that this costs money and it comes out of our funds for doing our job. As a result, we've -- but -- but nonetheless, we have instructed the contractor to proceed and to make such briefings on the Hill when -- when asked to do so. In some cases we've asked also that Board members be present. And as a minimum, for the contractor to make a record of such visits and the items discussed so that we have that on our record.

In the scope of the work product budget for this year we have included, as part of the -- I think it's task six, which is the program management -- project management portion, we have budgeted for those visits on the Hill, so this request which goes to essentially the Congress, if they fund that, in fact they are covering the cost of doing that. It's not a big part of this budget.

But one of the related issues are the ground rules under which the contractor makes that visit. The Board has -- has -- or some members

of the Board have expressed concern that perhaps a Board member should be present at such visits. The folks on the Hill don't always want Board members present at such visits. They may want what you might call just a candid discussion with the contractor. In any event, we -- we did want to get the sense of the Board, what the Board would feel should be the ground rules, keeping in mind that in the end the folks on the Hill are going to have the final say on this.

We may indicate, for example, the desire or the -- well, let's say the desire to have a Board member present when our contractor does such briefings, but whether or not we can demand that is certainly a question. But in any event, we do have a proposed motion, I believe from Wanda Munn, and I don't know if we fully have time to discuss that today, but we can at least get it on the floor and, if necessary, we can carry it over to -- till tomorrow. I want to ask, though, if -- if all the Board members received -- I think by e-mail -- a proposed policy on the issue of the contractor visits to the Hill and the Board involvement. Is there

anyone on the Board that did not receive Wanda's proposed motion?

DR. WADE: I would like to speak briefly to that.

DR. ZIEMER: And we will give Wanda the opportunity to formally make that motion, and -- and Lew, do you wish to speak --

DR. WADE: Yeah, I mean I --

DR. ZIEMER: -- before the --

DR. WADE: If I might, Wanda, I think I must speak before the discussion begins and -- and I mean I'll choose my words carefully. And the agency I work for, NIOSH, very much respects the Board and looks for the Board's advice. At this point the agency is not prepared to create the impression that it surrenders its right to make the decision as to Hill visits by a government contractor. We can certainly take guidance from the Board, but the agency will make the final decision as to how these Hill visits will take place, guided by the -- the information provided by the Board. To this point it's been the position of the agency that the Hill would have unfettered access to this contractor, and I would assume that would

remain the agency's position. Again, I don't want to -- to stop discussion by the Board, and we -- we welcome your advice, but I don't want to mislead you to the fact that the agency will a priori be guided by that advice.

DR. ZIEMER: Okay.

MS. MUNN: Thank you for that, Lew. The concern was not quite that simple, I think.

DR. WADE: I understand.

MS. MUNN: The real concern here is not an interaction with our elected officials, nor even, for that matter, an interaction with the press and the public or other organizations. The concern is that the material being discussed might still be incomplete. That was the situation which triggered this concern last month when our contractor was asked to provide a briefing on documentation that was not yet complete in that it had not been through the vetting process, either through NIOSH nor through this Board.

As a part of that request from Congressional staff, the request was also made that no member of this Board be present at that discussion. Because the topic was an unvetted and

incomplete document, there was reasonable concern that misunderstandings and misinformation could derive. The document was in draft form, was nothing that we had had an opportunity to see.

With those thoughts in mind, this proposed policy -- statement of policy was drafted, with the expectation that we would anticipate any elected official would want to stay abreast of what was transpiring with anyone or any agency that affected their district. This is to be expected. The concern here is that the information provided to them not be partial or incomplete information, and that is the sense and the spirit in which this proposed statement of policy was written.

DR. ZIEMER: Okay. Thank you, Wanda. And as -- although this is not formally a motion yet, but let me point out that probably in a majority of cases, the requests are going to involve documents that are in the status that you've described, in their -- they will be almost always, and have been almost always, draft documents. I can tell you that our contractor has I believe done a good job in the

past in making it clear on the Hill that these are draft documents. In all cases, it's my understanding, that in many cases the Board has not seem them yet so they're not -- they don't represent the position of the Board; they are working documents. I believe that's always been the case.

And the other part of that is that the -- a Board member present cannot speak for the Board, so there is that issue in going to -- the Board member can be there and hear what transpires, but is not in the -- in a position to contradict, deny or other-- or say that the Board doesn't agree with this or does agree with this. So keep that in mind in terms of the context here in what we're talking about.

MS. MUNN: In most cases it has not been vetted by the Board, so the Board --

DR. ZIEMER: Right.

MS. MUNN: -- has not deliberated.

DR. ZIEMER: And even if it had, that would still be the case. So this comes as a motion. I would ask if there's a second, and we can get it on the floor. We are running sort of time. We may wish to -- if we get it on the floor,

you may wish to carry it over to tomorrow and have a chance to cogitate on it overnight, but the Chair will ask for a second on the motion.

MR. PRESLEY: I'll second.

DR. ZIEMER: And the motion's been seconded.

DR. WADE: I'm sorry -- It would be best to read it.

MS. MUNN: Be glad to.

DR. ZIEMER: Yes, do we not have copies of this?

DR. MELIUS: But the audience doesn't.

DR. WADE: The audience.

DR. ZIEMER: Okay, I will read it and then we will make sure there are copies available for tomorrow, then we won't -- we will not act on it then tonight till everyone has a copy. Here's the motion. (Reading) As an appointed body mandated by the Energy Employees Occupational Illness Compensation Program Act, EEOICPA, the Advisory Board on Radiation and Worker Health (the Board) works with multiple Federal agencies to fulfill the requirements laid down by the statute. The business of the Board is conducted with full transparency under the Federal Sunshine laws requiring open

disclosure and public access to information. The Board routinely deals with matters that are complex, variable, frequently technical, and highly emotional.

It is necessary that the Board contract for several technical or administrative services in order to completely address discrete issues within the Board's responsibilities. The resulting documents require extensive review, technical discussion and revision before the product can be released as properly vented (sic) and then authorized for distribution. Although draft documents are often widely distributed, they cannot be viewed as material yet ready for presentation or comment.

Because of the incomplete and potentially misleading nature of information contained in draft documents, it is the policy of the Board to provide briefings, interviews or other informational exchanges from Board members, our subcontractor, affiliates and associates only when the final document has been accepted by the Board. It is our further policy that at least one member of the Board be present or in telephone contact at the time such a discussion

takes place.
Adopted this 26th day of August, 2005; St. Louis, Missouri.
That is the motion, and it has been seconded. Now I'm suggesting -- and we don't need to table this. I'm suggesting that we simply defer action on this till tomorrow till we can get copies available for the public and the Board has a chance to think about it. We do have a few minutes if you want to begin discussion today, and then we can continue that tomorrow during our work session. And the work session would be really -- we have it on the schedule toward the end of the session. It's Capitol Hill's visits. Okay, Jim Melius then.
DR. MELIUS: I would -- I would point out one thing is that we have dealt with this issue in a slightly different form about release of draft reports -- the Board after what I found to be an embarrassing and difficult situation, I believe with the Bethlehem site profiles when it came up, and at that time the vote -- the Board voted to allow the release of draft reports --
DR. ZIEMER: Yes. In fact on the Bethlehem

Steel we did delay the release of that to -- even to the Congressional folks till the time of our meeting, but then the Board took specific action that said in the future we would not withhold reports, they could be circulated to whoever, so that -- the Board has gone on record that draft reports are releasable in any event.

DR. WADE: With a suitable disclaimer.

DR. ZIEMER: And the disclaimer that we developed actually to go into the draft report. It was an -- it actually was the Andrade disclaimer, as modified.

DR. WADE: Okay.

DR. ZIEMER: Additional discussion today? Dr. Melius.

DR. MELIUS: I would just say I would vigorously oppose this motion. I think -- think there's major issues with the credibility of this program. I think having the -- our contractor go and brief Congressional staff on these sites, on our activities, is very helpful. They have high technical credibility, they have high credibility with Congressional staff, and I think it's been helpful to the

overall program. I think it's been helpful to the work of this Advisory Board to have them engage in these activities. Again, to my knowledge, they've behaved appropriately in terms of what they have said and how they've characterized what -- their activities and the status of their activities in relationship to this -- to the -- to the Board and so forth. And I -- I'm -- so I think we have everything to gain and I think there's a lot to lose by trying to prohibit this activity or limit it in some way.

Secondly, I would remind the Board that, given our record in completing some of these documents, getting them from draft stage to the final stage, we're talking about delaying some of these meetings for years, and it only is going to decrease our credibility. It's not going to help the -- the process at -- at all.

DR. ZIEMER: Thank you. Mr. Presley.

MR. PRESLEY: Well, I kind of disagree. I don't disagree that SC&A's doing a wonderful job. I do disagree that we need some participation on the Hill. Dealing with the Federal government for 36 years, sometimes it's

-- things don't get back exactly the way they do, and I think that we should have some participation any time that -- that there is a call for Board work on the Hill. I realize the Hill's going to do what they want to do, but if we do ask that we are allowed to participate in that, I think that it would be to our advantage to be able to -- to do that. We would have some participation on the Hill then in some of those discussions.

DR. ZIEMER: Thank you. Henry Anderson, then Leon, then Jim. Henry.

DR. ANDERSON: I guess I think once -- or what I object to in it is all draft documents. I mean -- so we don't distribute this 'cause it's a draft document -- I mean I think we just run into a technical issue of once we've adopted something, it's really too late for the public to comment because it's already been adopted. The only thing I would object to is I wouldn't want our contractor to go and share a document that's still an internal draft for them before they've vetted to share with us. Once they release public draft that's going to us at the same time, rather than -- I wouldn't want them

speculating on well, were they asked, what do you think about or how are you doing it, and they haven't really done it yet, and they wouldn't do that at this point. So internal to them before it's really a draft, that I don't think should be shared and I don't think they're doing that. On the other hand, once we have a draft comment on site profiles, I think that really has to be a public document and they have just as much a right to it as anybody else in the process. So if you go way back, early, you know, that's one issue. But once it's become a draft that's circulated to us for comment as part of the process, I just don't see how we could -- could not have that and -- you know, the other thing is they -- they can simply issue a subpoena for it and we don't really -- we want to avoid that kind of a thing. And trust me, they'll do that.

DR. ZIEMER: Leon.

MR. OWENS: Due respect to -- to Wanda, we have visited this issue before and I would strongly agree with Dr. Melius. The Board's credibility is always on the line. I think -- once again we're in St. Louis having another discussion

about a SEC petition for Mallinckrodt, and this has been going on for -- for several months. We also all realize that we serve at the pleasure of the President, and we also know that this is a political process. And I think that the Congressional delegation -- any member of that delegation or their representatives have the right to request for any information at any time. I think that SC&A has done a outstanding job as the contractor to this Board. I have all the confidence in them to provide timely information when requested by the Congressional members. But I do think it would be very -- a tragic move on the part of the Board to adopt this language. I think it would send not only the incorrect message to Congress, but I also think it would send a very bad message to those who watch the workings of the Board and keep up with it on a regular basis.

DR. ZIEMER: Okay. Dr. Melius.

DR. MELIUS: Yeah. I would also -- response to Bob's comment -- I think at the last meeting we -- in terms of our -- we passed a motion in terms of our interactions with our contractor

that allowed us -- all of us to be informed about these Congressional visits and so forth, and that actually took place for the recent one with Senator Cantwell's staff. So that process is in place. I would have no objection to a policy that if Board members would like to participate in the visit, that that should be offered. However, I think we -- our policy shouldn't be that they will attend, because I think it is still the prerogative of the Congressional office that -- who they want to invite to their -- into -- into their offices. I -- but in terms of allowing someone to -- you know, offer. So if we had a process that was in place where we would be notified about these, that should people want to participate that that be offered, communicated to whoever's -- appropriate staff that's setting up that -- that meeting, and then it's up to them to decide whether or not they -- they would like that participation or not.

DR. ZIEMER: Okay. Thank you. Let me add as an observation, and then we're -- this is the last word for today -- as an observation, a policy that offered the opportunity for a Board

member to be present would clearly meet NIOSH's needs where it wasn't a requirement but an offer, and it would allow the Hill the prerogative to not make the offer, as well. However, we are going to postpone action until tomorrow, and I will declare us in recess until tomorrow morning -- no, not till tomorrow morning, till later this evening. We have -- a brief recess for dinner. We will reconvene for the public comment period at the appointed hour -- I believe is 7:00, is it?

DR. WADE: Wait a minute.

MS. MUNN: 7:00.

DR. ROESSLER: 7:00.

DR. WADE: 7:00 p.m.

DR. ZIEMER: 7:00 p.m., and members of the public, if you wish to address the Board and you have not already signed up, please do so. We are in recess.

(Whereupon, a recess was taken from 6:00 p.m. to 7:03 p.m.)

GENERAL PUBLIC COMMENT

DR. ZIEMER: Well, good evening again, everyone, and we welcome you to the public comment session of the Advisory Board meeting

this evening. I have a number of folks that have asked to speak, and I'm simply going to take them in the order that they signed up. And then when we complete this list, we'll have another opportunity. If anyone else does wish to speak and somehow didn't get signed up, why we will add you at that point.

So let's begin tonight with John Ranspott. John, are you here? Yes, please. And you can use the mike right here in the front if you wish, sir.

MR. RANSPOTT: I will be brief, and I certainly appreciate the time to speak with you. I've been at a number of your meetings and you've made it very convenient. You seem to love St. Louis, you've been coming back and back and you surely know our airport now, so --

If I could, I'm going to read a statement, and it's -- actually involves another site, the Granite City site -- Granite City, Illinois -- and my comments have to deal with the Granite City site which was bought -- it was originally the General Steel Industries property, which is also known as General Steel Industries, General Steel Castings. It's located in Granite City,

Illinois. It is a covered facility. If you look at the list of properties, it's always referred to as Granite City Steel, so it's proven to be a little confusing for some of the people who look at the list and don't even realize that it's where they worked, which was actually General Steel Casting. It's just a friendly suggestion -- I know a lot of these sites have had different names, but it might be helpful if that were looked at. We see the a/k/a's, but there've been a number of people who have missed that.

And when I found out about the site I actually went over to try and contact some of my father-in-law's ex-friends who worked there. There was technically no one that I spoke with that knew anything about this program eight months ago. There are now 335 claimants. So there's a lot of people who obviously found out about it and it looks like it's going to possibly help them.

What I'd really like to know and I -- is what possibly happened to my father-in-law, my wife's father, while he was employed at General Steel Industries for over 35 years. Were he

and other employees in fact exposed to radiation as a result of work done in defense of our country? Were they properly informed of the dangers due to various types and forms of radiation? As of today, approximately 265 Granite City Steel/Granite City -- or General Steel Industries claims have been filed. It looks like 88 of the 89 processed so far have been denied.

One can only wonder why. Would these employees or their families been denied because of the radiation doses have been seriously underestimated?

Here's some concerns that I have. Has a site profile been done? When, and how do I get a copy? Are all of the radiation source terms known to the dose reconstruction team? I have only read about uranium being present at the plant, and per employees that I've spoken with, visited with, there was also cobalt, iridium and General Steel Industries was also the location of two, and I quote, government-owned betatron particle accelerators. One was a 24 million volt, the other one a 25 million volt, and that information comes directly from

employees and the FUSRAP report. So I've done a little homework on particle accelerators, so is that another radiation source? You know, and I -- I'm asking you folks 'cause you -- you're the experts, you know, I'm -- we're going to need your help to help identify all these sources.

If a site profile or Technical Basis Document has not been done, is it possibly on the NIOSH site profile docket to start, and when can it be completed? Is there -- or are there any plans of this taking place? Just curious about that.

Could the knowledge of site experts, specifically former employees which are available to provide input to the NIOSH outreach program and/or site profile authors -- would that be helpful, 'cause these people are available. And I've read about the site visits that are available I guess through NIOSH. These people would be willing to talk to NIOSH, contractors, come to the Board, go where you are, and I'll -- these people could use some help. I've watched what you have done and I really believe you're here to help, and you're

really trying to help some people.
So I appreciate your time, but I'd just like to find out what happened to my father-in-law, get to the bottom of it and if it did happen because of something like that.
We'll be -- we have some handouts for you -- and I know you guys love e-mail and mail that you get tons of, but we'll also send you a packet, wherever you direct us, so you have everything we have and these people definitely are available to talk with you. Thank you very much for the opportunity.
DR. ZIEMER: Thank you, and I think probably we can get answers to some of those questions even yet perhaps today from staff in terms of status of any site profile information and so on. And Stu or one of them will try to get some of that information back to you. Other -- other issues may -- we may have to have those researched.
Thank you, John.
And then Chris Ranspott. Chris, must be some relationship there.
MS. RANSPOTT: My name is Christine Ranspott. John's my husband. My father and grandfather both worked for General Steel Industries in

Granite City, one of the covered facilities under the Energy Employees Occupational Illness Compensation Act, for a combined total of over 70 years. As the authorized representative of my mother, a claimant, I am writing to request your help -- or speaking with you, of course, to request your help and expertise in solving a problem we have encountered.

When filing the claim for my father, we requested and paid for a certified copy of his earnings and his place of employment. When this information was received, it certified that he worked for National Roll in Avonmore, Pennsylvania. This is not correct.

In doing some investigating we were told that the EIN or employer identification number which was being used for National Roll was also the EIN being used for General Steel Industries of Granite City, Illinois. At one time National Roll was a division of General Steel Industries.

We wrote to Social Security and asked for this error to be corrected in order to show the true place of employment for my father. After a period of approximately three months we

received a letter, and I have a copy attached to show you, which stated -- and I quote -- The Employer Identification Number was originally assigned to General Steel Industries, Incorporated. The company was bought out, merged or changed its name to National Roll in 1994. As a result, Social Security changed the name and address electronically and is using the latest employer identification we have on record. End quote.

The letter goes on to confirm that my father in fact was employed by General Steel Industries, Incorporated. Thankfully, our problem was solved and the people we dealt with at Social Security were most pleasant and efficient. The claim for my father is proceeding through the system.

However, my grandfather's employment records also state that he worked for National Roll, which he didn't. And we've recently encountered three more former employees of General Steel which have had the same problem. This sincerely troubles me, since it's not necessary to request one's own records from Social Security in order to file a claim. I'm

concerned that many more employees may not be receiving news, that their claim is denied because they didn't work for General Steel Industries, according to Social Security records.

Is it possible for you to review any claims which have been denied for this reason? Is it possible to get this problem solved with the Social Security Agency? Obviously the correction of my father's records had no influence in changing the way requests of this sort are handled.

I also wonder if claimants from other covered sites which have had name changes, sometimes numerous, are experiencing the same difficulties. My concern is that this information gets passed along to the Department of Labor and others who process claims, and could result in many denials. Perhaps the full chain of ownership of all EEOICP-approved sites could be routinely researched in order to verify employment status by the Department of Labor prior to any claim being processed for approval or denial. Perhaps all denied claims should be reviewed with this information in

mind.

I thank you for your time and your efforts.

DR. ZIEMER: Thank you very much. This appears to be an issue that may be occurring at the front end of the process. I'm wondering if we can make sure that the folks at Labor are addressing this. And Stu, can somebody follow up on that?

MR. HINNEFELD: We'll address it with Labor.

DR. ZIEMER: Yeah, yeah, okay. Thank you very much for that input.

Yes, a question here?

MR. PRESLEY: Yes, what were those employment dates?

MS. RANSPOTT: I'm sorry?

DR. ZIEMER: The question is what were the employment dates involved?

MS. RANSPOTT: (Off microphone) My father worked there from 1936 to approximately (unintelligible), and we only requested records from 1953 through '70.

DR. ZIEMER: Okay, thank you very much.

MS. RANSPOTT: (Off microphone) But it was certified (unintelligible) everything.

DR. ZIEMER: Okay. Good, thanks. Next we have

Dan McKeel. Dan is a familiar face I think to the Board. Dan, welcome back.

DR. MCKEEL: Good evening to the Board. I am Dan McKeel. I'm a pathologist and a physician, as I think you know by now, and I'd like to briefly address six points about both the Mallinckrodt Destrehan people and also the Weldon Spring workers.

Point number one was at the October 2003 meeting of the Board in St. -- the first one in St. Louis concerning Mallinckrodt, I challenged Mr. (sic) Neton, head of the NIOSH dose reconstruction team, to provide us with the percentage of MCW workers that had complete radiation monitoring data. Until the transcript of the August 4th, 2005 meeting in Cincinnati, I had not gotten an answer to my question. But on page -- pages 24 and 25 of that transcript is the following exchange, which I quote. Ms. Brock -- Denise Brock says (reading) I believe the claimants' thought at the last meeting was that NIOSH was going to use the daily weighted average, and basically the proof is in the pudding. You can use the daily weighted average. And then I'm wondering

what caused you to eliminate that. I know you feel the breath radon is more reliable, but isn't there only minimal amounts of claimants that actually had breath radon? I mean how reliable is that?

Dr. Neton answered (reading) Well, we estimate around 20 percent of the cases that we have in our possession where people worked during the raffinate period have radon breath data. The number for breath data is around 20 percent. As I stated in October of 2003, a percentage as low as ten percent would not be sufficient for most scientists to accept that radiation exposure data could be accurately and reliably extrapolated to all workers, whereas if 90 percent of MCW workers had relevant data, that probably would be sufficient. Thus from a scientific point of view, use of data that is only 20 percent complete is completely unacceptable. Nor is there any evidence to indicate that this small sample is a statistically-representative sampling of the whole at-risk worker population. Yet we see early -- that earlier in the same transcript NIOSH has abandoned using the daily weighted

average method in favor of the breath radon approach. Denise Brock correctly questions why.

Furthermore, I learned at this meeting that the CER database, like the CEDR database, only contains data on the 2,542 Mallinckrodt Caucasian male workers, and that approximately 1,000 more Mallinckrodt men in minority -- I'm sorry -- MCW women and minority workers were excluded from the data analysis. The DuPres-Ellis July 2000 *American Journal of Epidemiology* article dealing with Mallinckrodt also analyzed external exposure data only on that same group of 2,542 white male MCW workers.

Thus the 20 percent sample proposed for use by NIOSH is even more inadequate and is extremely biased. There is still apparently 107 Mallinckrodt claims still waiting for best-estimate dose reconstructions by NIOSH as we near a final Board decision on Ms. Brock's Mallinckrodt SEC 0012.2 petition.

In short, the use of a limited 20 percent sample of breath radon data is not good science, for several compelling reasons. The

sample is not representative and it is far too small to extrapolate to the whole risk -- whole at-risk worker group.

The Board should reject the idea that NIOSH fulfills the 42 CFR Part 83 mandate in being able to accurately calculate radiation doses. This argues for approving SEC status for the 1949-'57 Mallinckrodt cohort.

Point two is that the Board has a goal of auditing two and a half percent of completed dose reconstructions, or about 550 cases. They have selected only 80 cases to be audited thus far, and even the first 20 are not 100 percent complete. Yesterday we learned that it would take about ten years to meet the projected two and a half percent audit goal. We also learned that the mandated target of 40 percent of cases with a probability of causation between 45 percent and 49.9 percent was difficult to meet since most cases with complete dose reconstructions were outside that range on both of the completed and the randomized case lists. Of all dose reconstructed cases on the randomized list, most were min/max, referred to as low-hanging fruit cases, and not the best-

estimate cases.
John Mauro and SC&A have stated that best-estimate cases are the most important to audit. I note that in the list of 100 completed best-estimate cases presented yesterday, not a single one was from Mallinckrodt Destrehan Street. My comment is that two and a half percent is not sufficient for a statistically-valid quality assurance audit where usually at least ten percent of a sample must be reassessed. A ten percent sample was used, for example, as we further learned yesterday, when ORAU validated the CER database against Dr. Thomas Mancuso's original DOE worker data. So this latter precedent supports my point number two.
Point number three, I believe there is an inherent error in the reasoning behind the concept of a bounding dose, which is the standard that NIOSH states the EEOICPA law mandates using and SC&A apparently accepts. Bounding dose strategy allows one to calculate a dose based on the highest concentration of radionucleide (sic) encountered among a mixture of radiation exposures. Yet from a biological

point of view, the total dose is the additive and cumulative effect of all the separate exposures. Each and every radionuclide and all of their progeny can contribute to radiation dose and biologically some to cause cancer. The BEIR VII 2005 report underscores this point, and even acknowledges the radiation risk posed by harmless -- and that's in quotes -- diagnostic X-ray procedures. The bounding dose concept, used largely for the sake of expediency, in the absence of real and complete and accurate exposure data, ignores these basic biologic facts.

In accepting this principle -- that is, that bounding dose is sufficient -- the EEOICPA law perpetuates the myth that dose reconstruction is a sound, fair and scientifically-valid endeavor. It is not claimant-favorable. Rather, dose reconstruction, as now implemented for MCW workers by NIOSH, is decidedly claimant-adversarial in ignoring the lack of real data and missing data during the SEC petition process.

The table on pages 49 and 50 of the SC&A third supplemental review of the MCW site profile

Rev. 1 is a specific example of this point. The page 49 table gives values for only eight of 31 named uranium progeny, and the table on page 50 for only nine of 30 K-65 residue progeny. No values are given for radon 219, for example, which is a biologically important radionuclide in human cancer biology. And as a citation, I would cite an article entitled "The Radiologic Impact of 219 Radon and Its Effect on 222 Radon Risk Assessment" which was in the *Journal of Health Physics*, Volume 41, Pages 165 to 171 of 1981.

Thus another uncertainty is introduced into NIOSH dose calculations that compounds other film badge measurement and radiologic uncertainties.

In summary, on this point I believe that the EEOICPA SEC rule should be changed to a fairer statement based on actual rather than virtual computer model-based or assumed and bounded data. And I would again urge GAO to closely examine reasons for denials under this EEOICPA statute.

Point four, I noticed yesterday that there was no discussion of tasking SC&A to review the

completed Weldon Spring site profile number 053, which was approved fully on June 24th through 28th of this year. As documented at previous meetings of the Board, many Mallinckrodt uranium division workers were employed at both the MCW Destrehan Street and Weldon Spring sites, and dose reconstructions therefore necessarily will involve determinations of radiation data from both places. The Weldon Spring site profile review should be placed at the top of the next to-be-reviewed list, ahead of the site profile reviews that were mentioned yesterday, in order for the Board to provide continuity with the Mallinckrodt SEC and the deliberations and TBD reviews for Mallinckrodt during February through August of 2005.

Point five is that I'd like to stress that the truck drivers at MCW Destrehan and at the airport site and Latty Avenue sites who ferried uranium ores, including pitchblende and K-65 residues, should be covered in the Mallinckrodt SEC and all revised Mallinckrodt TBDs. I remind the Board and NIOSH that a record of decision is pending by the Army Corps of

Engineers of the FUSRAP program on the north county and Latty Avenue and related vicinity properties. This rod addresses possible remediation of radiation waste underneath major highways, including McDonnell Boulevard and Pershall Road, along which the Mallinckrodt waste was transported, often without tarps covering the ore in the truck beds. So much waste was spilled that these roads are contaminated to a depth of at least 16 feet. Many of the truck drivers were not adequately monitored, and their radiation exposure risk was very high.

Point six, and my final one, is an environmental justice commentary. Data on uranium releases into the atmosphere around the Destrehan Street facility between 1946 and '55 is presented in a letter from Mr. W. J. Shelley of the Mallinckrodt uranium division to Mr. F. N. Belcher of the Atomic Energy Commission in SC&A's third supplemental report on the Mallinckrodt site profile Rev. 1 on pages 133 and 134. Over those years, from '46 to '55, the total uranium discharged through unfiltered Destrehan Street stacks totaled 22,990 pounds,

or 11 and a half tons. EEOICPA addresses compensation for former Mallinckrodt workers. My comment is that there is an additional compelling need to consider compensating people who lived in the community surrounding the MCW Destrehan facility plants.

As far as I am aware, there has never been a community radiological survey or any health status survey of residents living in the vicinity of Mallinckrodt Destrehan Street, which is in a densely-populated residential neighborhood. There was one report about psychological reactions of residents living near the Federal clean-up site, which was Mallinckrodt Destrehan Street.

Environmental justice concerns argue strongly that resident compensation should be revisited, even at this late date. I understand this is not in the direct purview of the Advisory Board, but the facts are relevant and the Advisory Board deliberation has been the vehicle that has brought this long-unaddressed major injustice to light.

I once again appreciate the opportunity to present the Board with my concerns. Thank you.

DR. ZIEMER: Thank you, Dan. Before you leave the microphone, could I ask a question on the truck drivers?

DR. MCKEEL: Yes, sir.

DR. ZIEMER: Could you clarify for me -- are these commercial drivers that were not really direct-- are they contractors to Mallinckrodt?

DR. MCKEEL: As I understand it, they are contractors under Mallinckrodt and -- and should be --

DR. ZIEMER: Are -- on the Mallinckrodt payroll or not? Do --

DR. MCKEEL: Probably not on their -- well, you know, I'm not sure --

DR. ZIEMER: Or Denise, do you know --

DR. MCKEEL: -- but I think not on their -- I think they were --

DR. ZIEMER: I'm really asking is there --

DR. MCKEEL: -- on the payroll as (unintelligible) contractors.

DR. ZIEMER: -- a group of Mallinckrodt workers called truck drivers that --

DR. MCKEEL: No, I think --

DR. ZIEMER: -- that were not --

DR. MCKEEL: -- these were private contractors

that worked to just haul the Mallinckrodt waste.

DR. ZIEMER: Okay, that's what I was --

DR. MCKEEL: Yes, sir. So --

DR. ZIEMER: Is that an identifiable group?

DR. MCKEEL: Well, in the first TBD they mention this group and they said they were having difficulty finding the employer of record. And I think I made the suggestion back in 2003 that there's a lady who is still I think head of that program, the project manager, named Sharon Cottner*, who I am sure would be able to supply that information. And -- and I really think that would be a terrific thing to do.

DR. ZIEMER: Well, I'm kind of asking at this point --

DR. MCKEEL: Yeah.

DR. ZIEMER: -- are these -- is this a group even covered by the current law? Perhaps not. Do we know that? I don't know if any --

DR. MCKEEL: Well, it -- it --

MS. BROCK: (Off microphone) (Unintelligible) if I'm correct -- I'm sorry.

If I'm correct, I believe it covers

contractors, subcontractors, and we know -- I think there were actual several maybe different trucking areas or companies that did that. There was also something called Arch Wrecking that was responsible for some --

DR. ZIEMER: I see.

MS. BROCK: -- of this, too, and I've tried to find them, as well. But as you well know, a lot of years pass --

DR. ZIEMER: Right.

MS. BROCK: -- and sometimes these companies just are gone.

DR. ZIEMER: Right.

MS. BROCK: And so that's part of a -- but it's something that (unintelligible) --

DR. ZIEMER: Currently we don't know exactly who they are, so it may be an issue for --

DR. MCKEEL: I believe --

DR. ZIEMER: -- the future to --

DR. MCKEEL: -- they're covered under the law.

DR. ZIEMER: Yes.

DR. MCKEEL: And I think Sharon Cottner, and there's a lady there who's their information officer called Jacqueline Mattingly, who's very knowledgeable and probably would try to help on

this, to identify.

DR. ZIEMER: Thank you. Board members, if you have any other questions of any of the presenters, please indicate such. Okay. Louise McKeel.

MS. MCKEEL: I'm the gal behind the camera. I'm just going to read this and then I can hand it off to you if you need.

(Reading) Thank you for providing some opportunity for public comment during the series -- this series of meetings. I'm Louise McKeel, owner and editor of *Village Image News*, an independent news group that specializes in environmental news of concern in the Mississippi River Valley and the Ozark Mountains, with particular focus on the St. Louis region where my family has lived for over 30 years.

I'm here representing citizens who are not likely to have the individual time, training or considerable personal resources it takes to research, to follow and to report coherently on developments of large governmental programs that have vital and multi-generational effects upon particular groups of workers and their

families in our region.

Point one, I learned from a question I raised at a previous NIOSH meeting in St. Louis that the Government Accounting Office projected or scoped cost of the -- you can say it -- EEOI, but I'll say Energy Employees Occupational Illness Compensation Act. The entire program was to be somewhere around $2.8 billion. It is also my understanding that the total amount has been approved by Congress for distribution to rightful claimants. I would like to have these facts confirmed once again. I don't know if it's an easy answer that can be given right here, if everybody knows that, or if it's going to take time and then -- we'll have to take time, I guess.

DR. ZIEMER: I don't think the Board knows those numbers, but it may be possible to get them for you. I -- why don't you go ahead and give us the -- or raise your questions and we'll see if we can find information that...

MS. MCKEEL: And -- and then point two --

DR. ZIEMER: I'm sorry, the $2.8 billion projection was the --

MS. MCKEEL: Well, the $2.8 billion -- that was

the amount that was estimated that this program -- the entire program was going to cost, and it was an estimate of the General Accounting Office.

DR. ZIEMER: Oh, GAO, okay.

MS. MCKEEL: And -- and then that the total -- that that amount had been appropriated by Congress for dispersion to the rightful claimants. And I mean, as I stand behind the camera, I really see all this from a pretty different point of view because I'm more of a citizen. I don't really know that. You know, Dan researches and does it from a very different point of view, but I come more as a -- just a citizen and representing the plain citizens taxpayers -- not even claimants, but just taxpayers -- and I'm interested in what the scale and scope of this program was, in a very general but accurate way.

Then the second point was -- let's see, my question -- that was an old concern I had, and then my question today is how much has the EEOICPA program cost to date? And then I say as a taxpayer and an interested citizen of this region, I feel a need to be able to see this

cost broken down by year with respect to the total claims approved. And then the annual budget for the -- and then I have to -- well, let me read it -- for the Advisory Board on Radiation and Worker Health, or you know it as the ABRWH -- the annual budget for their operations. This is a breakdown that I would think I should be able to see, as a taxpayer. The annual budget for the NIOSH dose reconstruction program -- and I'll hand this to you if it would save you writing it down -- the annual budget for ORAU contracts, the annual budget for SC&A contracts, the annual budget for the Department of Labor portion of this program, and the annual budget for the Department of Energy portion of this program. That's just point two.

And then point three is yesterday I heard it said that if the cases on the current agenda are audited it would take ten additional years. I'm asking for a rejection of the costs listed above for the next five years.

And that's all I'm going to say from officially the questions. One other comment that just occurred to me today. Dan and I were up

looking to see what the latest number of claimants -- I -- let's see, I guess I need to use your words, but those compensated and so forth -- and let me not try to analyze that. I mean to me it's not simple. It's a little -- little hard, but one footnote that just astounds me after all I've heard is there are examples of cases withdrawn -- let's see how this is -- well, it says cases referred to NIOSH, and then there's a category of that, NIOSH star one, withdrawn from NIOSH -- and then due to no dose reconstruction, apparently. It says examples of reworked case. Case was returned from NIOSH with a dose reconstruction, but additional medical or employment evidence needs to be developed. Case is then returned to NIOSH. Well, I can somewhat understand that. It sounds as though they're going to be looking for more evidence. But I see from this that it could work against the claimants quite easily.

But the second one is the one that concerns me. Examples of a case withdrawn. Case was sent to NIOSH and withdrawn without dose reconstruction due to claimant request, to claimant death,

insufficient employment evidence, or confirmation of SEC status. Claimant death and insufficient employment evidence, this sounds like things that the --

MS. RANSPOTT: Ranspott.

MS. MCKEEL: -- Ranspotts were saying, that they're just, you know, difficult statistics and inexactitudes that you all are able to use to just make a denial, and -- and it looks to me as though there are very, very few -- relatively few awards -- well, we did some percentages on that, but they were things like 11 percent of the awards -- I mean this is not like 60 percent or 80 percent or anything, but like 11 percent where people -- of people were compensated -- of the cases that were developed.

I'm not going to babble on through this, but it just doesn't seem to me that most people are getting rewarded, and that has nothing to do with just the -- the cases are a func-- a reduced function of the actual claims that are made. And I think a lot of people who were just here dropping in or citizens in general think that oh, well, there've been quite a few

claims, and in a way it's more like ten percent of the actual cases that are mentioned -- that are brought are -- have been paid to date, and I don't think that's a very high amount, considering all the expense that this program has cost so far.

DR. ZIEMER: Okay. Thank you. I think, Louise, that most of the information that you've asked about is public record information and I -- I don't know where all of it resides, but we certainly have the capability of getting that, one way or the other. I can tell you that the SCA part of the thing was announced today. There --

MS. MCKEEL: (Off microphone) Well, (unintelligible) the web site. You know, here are the -- the statistics --

DR. ZIEMER: Right.

MS. MCKEEL: -- (unintelligible) you just read the kind of statistics that I'm interested in, it's 11 percent of those people who make claims at Mallinckrodt, program statistics, 11 percent were compensated. That's not very many.

DR. ZIEMER: I was referring to the budgetary things that you asked about, and I think, as

far as I know, all of that is public record and it should be available. I'm not sure how readily we can get some of these numbers right away. We know what the SCA number is 'cause we announced that earlier today. The -- the budget for this committee, we can certainly get that. It's the smallest part of all of these numbers, I think. But --

MS. MCKEEL: (Off microphone) (Unintelligible) was curious --

DR. ZIEMER: -- but --

MS. MCKEEL: -- (unintelligible) the claimants, in a way, get --

DR. ZIEMER: Right.

MS. MCKEEL: -- (unintelligible) fifty thousand dollars --

DR. ZIEMER: Right, and --

MS. MCKEEL: -- (unintelligible).

DR. ZIEMER: -- and the number of claims that NIOSH has processed and the number of awards that have been finalized, that information is available. I don't have it here, but I -- I think -- and you're going to give us the written version --

MS. MCKEEL: (Off microphone) I think

(unintelligible) --

DR. ZIEMER: -- or this -- is this it? This is it, yeah.

MS. MCKEEL: (Off microphone) (Unintelligible)

DR. ZIEMER: We will try to retrieve that for you, certainly can.

MS. MCKEEL: (Off microphone) I appreciate that very much.

DR. ZIEMER: Okay. Next I have Mel Makara?

UNIDENTIFIED: (Off microphone) I inadvertently --

DR. ZIEMER: Makara?

UNIDENTIFIED: -- wrote my name. I thought that was (unintelligible).

DR. ZIEMER: Oh, okay. Thought you were -- thought you were registering attendance. Okay, Mel, we won't force you to come up here.

Now let -- that -- that's the last name I have on the sign-up list, but let me again present the opportunity if there's any others here who do wish to comment to the Board. We'd be glad to have you do that at this time.

(No responses)

Are there no other individuals -- now Denise, you're not twisting somebody's arm there, are

you?

MS. BROCK: (Off microphone) (Unintelligible) to a priest.

UNIDENTIFIED: (Off microphone) I think you just did.

DR. ZIEMER: It must have worked. Okay.

FATHER MITULSKI: No, I just --

DR. ZIEMER: Please identify for the record --

FATHER MITULSKI: Father Jim Mitulski.

DR. ZIEMER: Father Jim.

FATHER MITULSKI: M-i-t-u-l-s-k-i.

DR. ZIEMER: Okay.

FATHER MITULSKI: My dad is a claimant. He has passed away. I was just concerned because I can't seem to get -- one of the things that I wrote for was a copy of his records, and I haven't been able to get them. The first time I wrote they said they lost the letter, and they asked me to FAX another, and I FAXed it and I still haven't gotten anything back. Last time I was in -- the last FAX, I just looked at it, was in May, so I would have thought that I should have gotten back a copy of his records by now.

DR. ZIEMER: Yeah. We do have some folks here

from NIOSH that are helping on individual claims, and I don't know if you're -- if the records you're referring to are --

FATHER MITULSKI: It's (unintelligible) --

DR. ZIEMER: -- Labor Department --

FATHER MITULSKI: -- (unintelligible) records, yeah.

DR. ZIEMER: -- records or --

FATHER MITULSKI: Yeah.

DR. ZIEMER: If -- if they are Labor Department, we can get you directed to the right person, but we'll -- between Denise and some of the staffers here, I think we can at least figure out where help needs to come from in this case.

MS. BROCK: (Off microphone) (Unintelligible)

DR. ZIEMER: So -- and who -- who's here from the NIOSH staff that can assist, if necessary? Okay, there's a whole crew of folks. I'll tell you, when you wear a clerical collar the help all comes pretty fast. Okay.

FATHER MITULSKI: And then Denise wanted me to sing a song before I leave.

DR. ZIEMER: Okay. Well, our time is up. Okay, Denise, you have some additional

comments?

MS. BROCK: I think it was probably just the entire case file, and it usually works real well if you just put it in writing to the Department of Labor, they're usually real helpful. It looks like this letter went there. I can make a phone call.

DR. ZIEMER: Okay.

MS. BROCK: And I wanted to make sure because when his father passed away -- it's really difficult for family members to then immediately send in a survivor -- you know how that works.

DR. ZIEMER: Well, between Denise and the staffers here, we'll make sure that there's some follow-up on this.

MS. BROCK: (Off microphone) (Unintelligible) did all that. We'll do that. Thank you.

DR. ZIEMER: Thank you. Any other comments -- yes, Richard Miller.

MR. MILLER: Very briefly, Richard Miller, Government Accountability Project. I'd just like to put a request on the record to NIOSH that they make a redacted transcript available of the closed session that was held today,

obviously redacted from the things that are, you know, business-sensitive. I think you did that once before with respect to --

DR. ZIEMER: We'll try to do that as quickly as we can.

MR. MILLER: And it can (unintelligible) the web site. You don't have to --

DR. ZIEMER: Right.

MR. MILLER: -- give it to me personally.

DR. ZIEMER: Right.

MR. MILLER: That'll be fine. Thank you.

DR. ZIEMER: Yeah. Okay, any other comments or questions for the public session?

(No responses)

If not, I thank you again all, for being here in attendance tonight, and again, we will resume our session tomorrow morning at 8:30, at which time we will deal directly with the Mallinckrodt SEC petition. Thank you. Goodnight, everyone.

(Whereupon, at 7:45 p.m. an adjournment was taken to August 26, 2005 at 8:30 a.m.)

C E R T I F I C A T E 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 August 25, 2005; 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 7th day of October, 2005.

_____

STEVEN RAY GREEN, CCR

CERTIFIED MERIT COURT REPORTER

CERTIFICATE NUMBER: A-2102