U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
CENTERS FOR DISEASE CONTROL AND PREVENTION

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NATIONAL INSTITUTE FOR OCCUPATIONAL
SAFETY AND HEALTH
ADVISORY BOARD ON RADIATION
AND WORKER HEALTH

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SUBCOMMITTEE FOR DOSE RECONSTRUCTION REVIEW

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THURSDAY, APRIL 16, 2009

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The meeting convened at 9:30 a.m. in the Zurich Room of the Cincinnati Airport Marriott Hotel, Hebron, Kentucky, Mark Griffon, Chairman, presiding.

PRESENT:

MARK GRIFFON, Chairman
BRADLEY P. CLAWSON, Member
MICHAEL H. GIBSON, Member*
WANDA I. MUNN, Member*

THEODORE M. KATZ, Acting Designated Federal Official

IDENTIFIED PARTICIPANTS:

NANCY ADAMS, NIOSH Contractor*
HANS BEHLING, SC&A*
KATHY BEHLING, SC&A*
LIZ BRACKETT, ORAU*
RON BUCHANAN, SC&A*
HARRY CHMELYNSKI, SC&A*
DOUG FARVER, SC&A
STUART HINNEFELD, NIOSH
ELIZABETH HOMOKI-TITUS, HHS*
EMILY HOWELL, HHS
ROY LLOYD, HHS*
JOHN MAURO, SC&A
SCOTT SIEBERT, NIOSH

*Participating via telephone

TABLE OF CONTENTS

P R O C E E D I N G S

9:28 a.m.

MR. KATZ: So this is Ted Katz with the Advisory Board of Radiation Worker Health. This is a Subcommittee on Dose Reconstruction Review, and let me just check in with the phone first to see if we have board members on the phone.

MS. ADAMS: Ted, this is Nancy. I'm not a board member, but we can hear you.

MR. KATZ: Yes, great. Hi, Nancy.

Wanda, do we have you?

(No response.)

How about Mike Gibson?

(No response.)

And how about John Poston?

(No response.)

CHAIRMAN GRIFFON: Do we need to wait?

MR. KATZ: Clean slate -- a couple of minutes then.

CHAIRMAN GRIFFON: Yes, wait or try

to contact them.

MR. KATZ: Yes -- so we're going to wait until it's actually half past.

Nancy?

MS. ADAMS: Yes.

MR. KATZ: Can you try to, I guess, email or call -- I mean, I know Mike knows this is going on and he's going to try to call him, but I haven't heard from Poston or Wanda. Can you just check in with them?

MEMBER GIBSON: Ted, I'm here.

MR. KATZ: Oh, Mike, welcome.

MS. BURGOS: Ted, this is Zaida. Wanda should be there.

MEMBER GIBSON: Oh, she should be here physically.

MR. KATZ: Wanda should be here physically. Oh, okay. Well, we haven't seen her yet, what? So you traveled there?

MS. BURGOS: Yes.

MR. KATZ: Okay, that's good to know. And then do you know about John Poston,

Dr. Poston?

MS. BURGOS: No. He didn't have travel orders.

MR. KATZ: He didn't have travel, so he is calling in. So it sounds like, Nancy, you just need to get a hold of Dr. Poston.

MS. BURGOS: I'll try.

MR. KATZ: Thanks.

MS. ADAMS: Thanks, Zaida.

MS. BURGOS: Yes.

MR. GRIFFON: Should we -- maybe Wanda thought it was 10 a.m. Is there a possibility?

MR. KATZ: She might have. I can go -- let me go try to find her.

Okay, so this is Ted Katz again and Wanda's going to be calling in, and let's get roll call done here and get rolling.

So starting in the room with -- with board members.

CHAIRMAN GRIFFON; Mark Griffon

chairing the subcommittee.

MEMBER CLAWSON: Brad Clawson.

MR. KATZ: And on the phone we have board members?

MEMBER GIBSON: Mike Gibson.

MR. KATZ: Okay, and still no Dr. Poston. And Wanda said she would be calling in shortly, for a little bit at least.

Then going around the room, NIOSH team?

MR. HINNEFELD: Stu Hinnefeld from NIOSH.

MR. SIEBERT: Scott Siebert, ORAU Team.

MR. KATZ: And on the telephone do we have NIOSH ORAU?

Okay, and then in the room SC&A?

DR. MAURO: John Mauro, SC&A.

MR. FARVER: Doug Farver, SC&A.

MR. KATZ: And on the telephone, SC&A any?

MS. BEHLING: Kathy Behling, SC&A.

DR. BEHLING: Hans Behling, SC&A.

MR. BUCHANAN: Ron Buchanan, SC&A.

MR. KATZ: Welcome, all of you. And then other federal employees, HHS, et cetera, in the room?

MS. HOWELL: Emily Howell, HHS.

MR. KATZ: And on the line?

MS. ADAMS: Nancy Adams, NIOSH contractor.

MR. LLOYD: Roy Lloyd, HHS.

MR. KATZ: Welcome, Roy. Okay, then we're all set.

CHAIRMAN GRIFFON: Do you have your normal introductory comments?

MR. KATZ: Well, we just -- we have a very small group on the phone here, and they know the routine.

CHAIRMAN GRIFFON: Okay, I have a -- and I just did this on the plane so it's not like I was withholding an agenda, but I think we all basically know what the agenda is.

The one item that I did want to

discuss up front, which -- which might not be obvious, is this question of the DR guidelines.

Stu, we had some e-mail --

MR. HINNEFELD: Yes.

CHAIRMAN GRIFFON: -- back and forth about this, but that's -- I just want to sort of do that as old business. Then I was going to try to go into the sixth and seventh set, and we're down to a fairly limited number on both of the sets, but I'm not sure, because we got responses late from both SC&A and NIOSH that we're going to be able to close all of them out, but at least we can kind of get an update on where we stand.

Hopefully, we've at least got responses on all the actions, so we can step through those. That shouldn't take too long. And then I'd like to pick up where we left off on these. I don't think we even got halfway through. I think Doug -- I said halfway, but Doug said probably not even

halfway.

So, anyway, we can pick up on the eighth set matrix then continue. This is our first pass through on that matrix, just to remind those on the phone.

Then bring us up to lunch with that, and then right after lunch -- and this is probably an important thing for the subcommittee, I'd like to -- I -- I redrafted a version of the first hundred cases report, and we did say at the last board meeting that we took this assignment back and -- and our goal is to come back to the board with a revised version of this.

I didn't get any comments from other members, but I did try to put an executive summary up front. I was reading through it again on the plane. I have some -- I have some edits to make. What I'm going to do is during the lunch break modify my own copy and then print it off here, and we'll get e-mails to those on the phone.

The report's basically -- the body of the report remains the same. It's just there's a front end now that has sort of an executive summary and we, you know, that -- that whole thing is open for discussion, obviously, but I just wanted to get something on the table so we can get some reaction from the -- from the members. And if we get consensus that would be great and we can bring it back to the board.

So that's -- I thought that would be good to take up right after lunch when we're fresh, and then we can go back into our normal eighth matrix and go as long as we can, probably 4:30, five, I think we need to break. You know, that's what we've always done in these meetings; that's about as long as we can last on this stuff, so --

Oh, one other item I skipped. After the hundred case report, the selection criteria -- we need to revisit the selection criteria and -- and also give a report back to

the full board of whether we want to keep it the same, revise it in any way, so we need to discuss that.

So those two items first thing after lunch, I think, is the most appropriate for that. So are there any other items that we need on the agenda first of all? I'll open that up to -- I think that covers it.

MEMBER MUNN: Mark, this is Wanda. I'm -- I'm coming late to the party, but I wanted you to be aware of the fact that I will not be on the call at all this afternoon and only briefly this morning. I have to fly across the country today.

CHAIRMAN GRIFFON: You're flying out, yes. Oh, boy. All right.

MEMBER MUNN: Whatever you're going to do in the afternoon, I will not have an opportunity to see until about 11:00 tonight.

CHAIRMAN GRIFFON: What -- what time can you be on until this morning, Wanda, just so I have a sense, because I may try to

get this -- this first hundred cases moved up, because I really need your input on that.

MEMBER MUNN: I can be on for a couple of hours, Mark --

CHAIRMAN GRIFFON: Okay.

MEMBER MUNN: -- and probably -- shortly after -- I don't know what time you anticipate taking a break, but probably shortly after your first break I'm going to have to leave you because I have to -- I have not yet packed. I was going to do that this morning because I was aware that --

CHAIRMAN GRIFFON: Wanda, I have to say I'm a little offended that you forgot about me.

MEMBER MUNN: The reason I forgot is because I very frankly just did not put it on my calendar, knowing I was going to be traveling.

CHAIRMAN GRIFFON: I know, I know.

MEMBER MUNN: And I --

CHAIRMAN GRIFFON: And we all --

we've got so much going on, too, yes.

MEMBER MUNN: Yes, it's just too much happening.

CHAIRMAN GRIFFON: All right. What I think I'm going to discuss this first topic, the DR guidelines, and then I'm a little reluctant to e-mail this version out, but for the sake of discussion maybe I'll just e-mail what I have from last night.

I -- I -- I edited this first hundred case report last night, and then when I was looking at it on the plane I found some areas where I thought the language needed to be massaged, so to speak, but for the sake of moving the discussion along, maybe I'll just send you the version I have and then we can discuss these DR guideline thing, take a quick break, and we'll get copies of that made, if that's okay, Ted --

MR. KATZ: Yes.

CHAIRMAN GRIFFON: -- and we'll move that up on the agenda and, hopefully, at

least have some of your thoughts on that, Wanda. I really, you know -- because we really want to try to get this moved along in the board meeting.

Is that okay, Wanda?

MEMBER MUNN: Yes, we certainly do, and that's the reason I mentioned it immediately because --

CHAIRMAN GRIFFON: Okay.

MEMBER MUNN: -- I have much appreciation for putting together the format that we had discussed at considerable length and that I feel is an excellent time for us to do it, if we can do it now.

CHAIRMAN GRIFFON: Okay, okay. And just understand when you receive it that it's pretty raw, so don't get offended right away.

MEMBER MUNN: I won't.

CHAIRMAN GRIFFON: Okay, all right.

MEMBER MUNN: Not to worry.

CHAIRMAN GRIFFON: Okay, just let me get through this one item first of all, and

this is a -- this came up -- I e-mailed Stu, I believe, a couple of weeks ago --

MR. HINNEFELD: Yes.

CHAIRMAN GRIFFON: -- and it was -- it was just as I was doing the eleventh set cases with -- Brad and I are a team, and we were on the phone and looking at our cases for the eleventh set, I just asked the question of SC&A.

I don't see any DR guidelines in these cases. Have you come across them yet? And they basically said that not to their knowledge. They don't remember seeing any in the cases they've looked at, so that's when I e-mailed Stu asking about these, and I thought that -- that we had. I haven't really looked at the transcripts and all that, but I thought we had a commitment that NIOSH going forward was going to include those --

MR. HINNEFELD: Well --

CHAIRMAN GRIFFON: You know, we sort of debated the retrospective; it would be

just too difficult --

MR. HINNEFELD: Yes.

CHAIRMAN GRIFFON: -- but going forward I thought we were going to be included because -- and -- and let me just say -- I mean, the reason I think they're -- they're fruitful is not only for SC&A and for the subcommittee, you know, in terms of their audit, but by extension I think that would be important for the public because we can do a better job with our audit, and we can do a more complete, you know, review.

You know, it's just this -- we've come across these cases where the procedures -- and rightly so in some cases, they cannot be prescriptive, but then you supplement some of those with these guidelines that sort of direct the dose reconstructor in these kind of situations do this, in these kinds of situations, you know --

So, we -- we -- I thought we had a commitment that going forward those would be

added, and that would help us understand whether the dose reconstructor was actually falling in the correct guidelines of, you know -- and it doesn't seem to be happening --

MR. HINNEFELD: No, it's not happening.

Well, my recollection of the commitment was to find out how difficult would it be for the contractor to do, and, frankly, I'm still -- you know, I had to remind the contractor how difficult would it be. I mean, I heard about, well, it's doable. You know, we could probably do that, but I don't know -- now, Scott, if I'm incorrect. You do a lot more dose reconstructions than Jim Griffin, and Jim Griffin's the one I've been talking to.

So, I'd be really interested in your thoughts on this.

There are some complications here because I would -- now, if I say something wrong just say it.

MR. SIEBERT: Sure.

MR. HINNEFELD: Okay. I'm pretty confident there are some dose reconstructions that are done without referring them to something like --

MR. SIEBERT: Most --

MR. HINNEFELD: Okay.

MR. SIEBERT: -- most are doing without referring --

MR. HINNEFELD: -- without referring to one of these supplemental guidelines.

So being able to check on whether everything is there that should be there becomes a more difficult task for everybody. So when you get -- in other words you get a claim and there is no guide associated with it, it will be difficult to decide, maybe -- might be difficult to decide whether it was mistakenly omitted or whether there's just none in use. So that's one thing that would be somewhat difficult.

CHAIRMAN GRIFFON: Can I ask just a question there?

If you have a Hanford case -- like I know there is some cites that you don't even have guidelines for necessarily, right? But if you have some of the ones that have the guideline, would it be fair to assume that -- that those claims may always -- or will always turn to --

MR. SIEBERT: Actually, not, because the background on these were originally the technical basis documents, as you guys know from reviewing them, could be very complicated and convoluted, to be specific as to what you need to do from a dose reconstruction point of view.

So originally we had put together these to kind of get to the very specific points of dose reconstruction as to what's in the TBD, and then also list that if there are additional things that may not have made into the TBD yet that were waiting -- getting into

the TBD, have that direction there, as well.

When we went back and looked at these, and I've had my dose reconstructors, the site leads, and look at them the last couple of weeks. Most of what was in there actually is already in the TBD, is in procedure -- or OTIB 60 for internal, is in the external. There's other referenceable places for it. It was just put together in a way that made the TBDs easier to use.

When we looked back at those, actually a lot of them we've suspended using, because once a dose -- and this is what I'm saying -- once a dose reconstructor knows what they're doing and knows the TBD well, they don't have to refer back to these guidelines because they already know what they're doing, and they know where they can find it in the TBD, okay?

So a lot of these actually are being removed, because when we pulled the string on all the pieces parts, they're

already referenced somewhere else. So they're actually getting very small. Some went away, and there's some others that there are small things that maybe haven't gotten into the TBD yet that we have methods to cover holes. Those are the only things that can be left in these dose reconstruction guidelines.

Does that make sense?

CHAIRMAN GRIFFON: I mean, what I saw and the few that I looked at, draft ones, from a long time ago --

MR. SIEBERT: Yes, right.

CHAIRMAN GRIFFON: -- but from what I saw it looked like it had more of the assistance with the areas I would call like professional judgment, like, you know, for in this situation assume this solubility, or you had some if-then logic, too.

MR. SIEBERT: Actually, yes, and -

CHAIRMAN GRIFFON: If you have this then you use this.

MR. SIEBERT: And almost all of

that -- most of that was actually internal, if I remember correctly --

CHAIRMAN GRIFFON: Yes, a lot of it was internal, yes.

MR. SIEBERT: -- and most of that was over -- was taken over by when we put OTIB 60 in place. OTIB 60 has a lot of that directive, decision-making process in it already.

And that's what I'm saying. When we pulled the string and looked at other references, most of the direction was already in other places, so we determined -- and I quizzed dose reconstructors to find out if they're actually referring back to them, and they are not, because they already know what's in them, and they're referenceable in other places.

Does that kind of make sense?

CHAIRMAN GRIFFON: But -- so if you had to guess now what -- how often are they used, five percent of the cases, one percent?

MR. SIEBERT: I -- wow, that's --

CHAIRMAN GRIFFON: Hard to say?

MR. SIEBERT: Yes, that's really hard to say, but I'd say a relatively small percent. I mean,

MR. HINNEFELD: Okay, now Scott, let's have a conversation, because I am sympathetic, because, you know, I don't really read those reconstructions anymore, but when I did it could be very daunting to kind of follow the logic of why the DR, so I understand --

MR. SIEBERT: Right.

MR. HINNEFELD: -- so I understand -- I understand the interest in happenings.

For a dose reconstructor who's doing a dose reconstruction, if he -- well, if he refers to one of these things, then he's got it handy and it would be fairly simple, I guess, for him to copy it and goes like a supporting documents --

MR. SIEBERT: Right.

MR. HINNEFELD: So if you get it that would be fairly simple.

MR. SIEBERT: Right.

MR. HINNEFELD: There are going to be other situations which are apparently going to be much more common now where the dose reconstructor knows what it says and doesn't look at it. I mean, it may still be there. It may not be cancelled, and even if it were cancelled it would potentially be in an archive somewhere.

So to then -- if we were going to include the thing -- the guide for that case, you're asking this person to spend the additional time to locate it, you know, pull it up, copy it, which doesn't sound like a lot, but can turn into a lot. It can turn into cumulatively a pretty significant investment, particularly when we are constantly on our contractor to provide more production.

So I'm a little -- I'm a little

hesitant to just say no matter what the situation, if you've got one, grab it and put in there.

CHAIRMAN GRIFFON: Well, the other -- the other -- and this was in the -- I'm not sure who -- I don't think you sent this to the whole subcommittee --

MR. HINNEFELD: No, I responded to you and copied --

CHAIRMAN GRIFFON: -- because the other part of your response to me was that, you know, and this would be fine, but I feel like I'm -- I feel like I just got in a time machine and went back two years --

MR. HINNEFELD: Yes.

CHAIRMAN GRIFFON: -- because you said that we could provide them for the cases, if we have issues about a certain case that we're reviewing, then you may be able to --

MR. HINNEFELD: Did I say that?

CHAIRMAN GRIFFON: Yes, I thought you did, yes.

MR. SIEBERT: That surprises me. I don't believe we kept those historically.

CHAIRMAN GRIFFON: And I thought that was the original problem was that you couldn't do those historically.

MR. HINNEFELD: Yes, I don't think they're kept historically.

MR. SIEBERT: They're not.

CHAIRMAN GRIFFON: Because I was confused when I saw that in your response.

MR. SIEBERT: They're not controlled documents under the project --

CHAIRMAN GRIFFON: So you wouldn't have dated versions and stuff like that. Right, right.

MR. SIEBERT: Exactly.

CHAIRMAN GRIFFON: Because if that, you know, if that were available then we wouldn't be here right now.

MR. SIEBERT: Right, you could always reference --

CHAIRMAN GRIFFON: Just pull the

ones we needed and then SC&A could, you know --

MR. HINNEFELD: Right.

CHAIRMAN GRIFFON: So then even -- I agree with you, Stu, if they're not -- if they're so familiar with them that they're not really referencing them or they're in some -- referenced in some other way --

MR. HINNEFELD: Right.

CHAIRMAN GRIFFON: -- or they could be part of the workbooks now or whatever. They don't use them, you know, but it would certainly be helpful from the audit standpoint if we have, you know --

And I'm not sure how much of a burden it would be going forward to add a file. I know it's many cases, but --

MR. HINNEFELD: Well, if they pull it open and it's open, I mean, they're using it. That's clearly that could be done.

CHAIRMAN GRIFFON: Yes.

MR. HINNEFELD: You know, I mean, I

can send that direction here at the break to ORAU, and it will take them a while to implement it, but it will be done.

CHAIRMAN GRIFFON: Yes.

MR. HINNEFELD: Apparently, that will catch very few of these dose reconstructions.

CHAIRMAN GRIFFON: Yes.

MR. HINNEFELD: I'm interested about the things that are being retired, since you say you don't keep them historically. Could you keep them for a while?

MR. SIEBERT: Yes, we can. If we can track them all down. We didn't -- see, the site experts were basically in charge of keeping those up to date --

MR. HINNEFELD: Okay.

MR. SIEBERT: -- and they were basically writing over them as they went over them.

MR. HINNEFELD: So, I mean, by a version --

CHAIRMAN GRIFFON: I'm amazed that in this day and age that we didn't keep revs of things, but --

MR. SIEBERT: Well, once again, they weren't referenceable, controlled documents, and it was -- it was much easier to do that for small issues that haven't gotten into TBD yet, and then once it got in the TBD you can remove it and things like that, rather than going through the whole controlled document process, which does take a while.

DR. MAURO: From a practical standpoint, from SC&A's side, when I budget, I make certain assumptions, and this -- one of my concerns is that do we run into circumstances where all of a sudden we're spending days trying to figure out what was done, because I know in my experience once I figure out what was done, it's done. Because then I'd know whether or not there are problems or not.

The hard part is figuring out what

was done, and in my mind it shouldn't be that hard to figure out. You should be able to read the document, then do our calculations and match your numbers. Okay, I know what you've done.

But I find myself caught up -- now, I guess I have a question to the work group. I know that we don't do this, but would there be a problem with our auditor calling up the originator and saying listen I don't understand what you did here. And it may -- you know, just so that we could get through this thing.

If it's very much a living process the way you describe it -- not always, but in some cases it's not trackable, simple as that.

CHAIRMAN GRIFFON: That's -- that's deja vu to me, too --

MR. HINNEFELD: Right, I did say that --

DR. MAURO: No, we probably had this conversation. No, we haven't done that.

We haven't done that because we're auditors, and I think that we're probably not supposed to do that.

CHAIRMAN GRIFFON: Yes.

MEMBER MUNN: John, can you get a little closer to the mike?

DR. MAURO: Sure.

CHAIRMAN GRIFFON: Also, I think that NIOSH had some concern about you going directly to all staff --

DR. MAURO: Okay, is this one of these? Okay, Wanda, could you hear me a little better now?

MEMBER MUNN: Oh, thank you, that's so much better.

DR. MAURO: All I did, I probably brought this up two years ago, but what I was saying is that sometimes it takes us a long time during our audits to figure out what was done, because before we could say anything constructive or whatever, we have to basically reproduce their numbers and say, okay, I see

what they did.

MEMBER MUNN: Yes, yes, I recall that discussion.

DR. MAURO: Right, and I know that it sounds like that institutionally, to be able to put down the complete paper trail, either in the DR or reference of documents, and it sounds like it's not always there, because there are times when something may have been retired and a person may have used a technique and that doesn't even exist anymore, the method that was used and the assumptions that were used in 2005.

The question I have in order to make life easier for us, if we could call the author in 10 minutes we might be able to straighten this out, rather than spending a day or two trying to figure it out, and perhaps never figuring it out, and coming out with a comment that says we can't figure it out.

You know, that's not very helpful.

Now the only problem is -- is -- does that break the barrier that you're looking to hold between the auditor and the authors. In my mind, it would certainly help me to get my costs down by being able to make that phone call, but I'd have to take guidance from the -- from the work group.

MR. HINNEFELD: Well, and I would also want to talk to Larry. Personally, I don't see a particular problem, personally.

If we want to call this an audit, which we kind of resist, but if this is an audit in every audit I've ever had when I was in a different job I spoke to the auditor. You know, they come and there's a meeting and there's conversation, and the auditor attempts to obtain the best understanding -- well, you would like for the auditor to have the best understanding of what's being done.

So before I commit to that -- see, we have what -- over a hundred probably, maybe not quite that many anymore -- not anymore.

We have a lot of people who do dose reconstructions all over the place. Of course, we can just tell you where they are so you know what time zone to call in, but I'm not sure about their phone availability. And if you called them about a claim, they did that claim maybe long ago --

CHAIRMAN GRIFFON: A long time ago.

MR. HINNEFELD: -- maybe long ago.

CHAIRMAN GRIFFON: Yes.

MR. HINNEFELD: So the phone call in getting some immediacy may not work. A question and answer process -- but, of course, that's going to build into the delay because you're going to have to, you know, if we'll have a point of contact for the questions -- it might be a contractor point of contact. It doesn't necessarily have to be a federal point of contact.

You know, somebody that, you know, this is the DRist on this and here's my question, that kind of stuff -- or can they

call and we could eventually have a phone call, but then the DRist would, you know, get that quickly and they would have to refresh their memory with that specific dose reconstruction.

And at that point then you could have a useful conversation at a point when you could both have a conversation. So then your auditor has to -- you know, you have to schedule a conversation so you can both have the case fresh in your mind, rather than just call anybody out of the blue.

I mean, there's a process there that probably I think that could work. And like I said it's not -- this is not ORAU policy saying it could work -- or OCAS policy saying this, because I really kind of need to get some feedback back in the office on it.

DR. MAURO: But remember what happens. Then it happens on the back end of the process. One way or the other that's going to happen.

CHAIRMAN GRIFFON: Yes, yes.

MR. HINNEFELD: You're right, after it's written down then it's going to happen.

MEMBER CLAWSON: We're getting into this. You talk about deja vu because coming back to this part of the issue we got into was you could not reconstruct what they did, and what I've heard so many times coming back into this is we don't know what they use.

So then we bring it up, and, oh, they use this process to be able to do it. Okay, so we'll go back and use that one. No, that one no longer exists. That has been moved to this one, and now -- actually, that one doesn't even -- we've moved to this one, and this is our issue is we're -- we're shooting all over the place, and for an auditor to be able to come in and perform this, we have -- we have no idea what was used.

And so it comes back with the comments that they do with it. We can't

figure it, you know -- what -- how did they use this or what did they use. And as you've said there's many different revs that have come down through the line or is now they've been moved over to 60 or 66, something like that.

I think we're right back to where we were at several years -- and one of the things is that we've got to be able to figure out how we can take and reconstruct this for them somehow, and they've got to know the guidelines that were used, bottom line. Because somehow they've got to know how did they reach this and why -- this has got to be referenced somehow.

DR. MAURO: As sort of stepping out the picture and just thinking about the process we're in, I think there's two levels of concern. One as auditor, we'd like to be able to efficiently move through the process. In the end, that one percent -- right now we're doing about one percent of the cases,

you know -- so that one percent eventually we get to, and we all sit around the table. We'll have an issue. We can't figure this out, and it triggers the process.

You bring people in, you work on it, you call in your people, and eventually we figure out what was going on. So that time is going to be spent. Either it's going to be spent in the beginning, or it's going to be spent in the end. That's one level, and that's not that important. I'll tell you why I say that.

I think what's more important is I think there's an obligation is to have a tractable dose that is transparent to any experience health physicist that is interested --

CHAIRMAN GRIFFON: Yes.

DR. MAURO: -- not just the auditors -- not just the auditors, but you've got a document that basically a fundamental decision document on, you know, compensation

versus not, and if there's not sufficient weight to how you got there, I think that's a problem. I think that's a quality assurance problem.

CHAIRMAN GRIFFON: Yes.

DR. MAURO: So I would say that I'm -- in the grand scheme of things that's really where the essence of the problem is. You have to have a paper trail that is bullet proof. Whether the number's right or wrong, good or bad, bad assumptions, good assumptions, terrific assumptions, that's really not the issue.

The issue is it has to be there so someone can go back and say, yes --

CHAIRMAN GRIFFON: That's kind of what I'm getting at --

DR. MAURO: Yes.

CHAIRMAN GRIFFON: -- is the show your work notion --

DR. MAURO: Show your work, essentially.

CHAIRMAN GRIFFON: -- show your work, and in 10 years, 15 years someone should be able to go back to that case file and say, okay, I see exactly what they did, you know.

MR. HINNEFELD: I think there's a lot of merit to that point.

MR. FARVER: Now, some of the dose reconstructions you have different versions to. I'm looking at the one from Los Alamos, and it's got -- the first page is a revision summary. It's got the dates --

CHAIRMAN GRIFFON: This is the DR guidelines?

MR. FARVER: Yes.

MR. HINNEFELD: Is this a dose reconstruction?

MR. FARVER: This is a DR guideline for LANL.

MR. HINNEFELD: Okay.

MR. FARVER: And it gives the description of the changes, and that goes on for a page or so, and then it starts into the

guideline. So I guess some of them are -- describe the versions and what changes were made.

CHAIRMAN GRIFFON: But I think Scott's right, they weren't controlled documents so it wasn't --

MR. FARVER: Right.

CHAIRMAN GRIFFON: -- consistently kept or whatever.

MR. FARVER: No.

CHAIRMAN GRIFFON: Yes, yes.

MR. SIEBERT: It would depend on who was keeping them.

CHAIRMAN GRIFFON: Right, right.

MR. FARVER: Right.

CHAIRMAN GRIFFON: Yes.

MEMBER CLAWSON: But I agree with John though. We've still got to be able to look at this as a paper trail, you know.

CHAIRMAN GRIFFON: Well, I mean, I think going forward, if -- if they're used, I guess the question is we can't expect that

they'll be in every case, but we should expect to see some of them, you know, and if they're used they should be included in the file, is my opinion.

And I actually thought going forward that we had a -- you may be right, Stu. It wasn't a strong commitment.

MR. HINNEFELD: I don't remember --

CHAIRMAN GRIFFON: Yes.

MR. HINNEFELD: -- I really don't remember.

CHAIRMAN GRIFFON: Because I do remember specifically NIOSH pushing back on me on the question of going back. That's why your e-mail confused me a little bit.

MR. HINNEFELD: Yes, yes, I don't know why --

CHAIRMAN GRIFFON: I thought you couldn't do that.

MR. HINNEFELD: Yes.

CHAIRMAN GRIFFON: So, you know, excepting that you can't really go back

because they're not archived, at least going forward I think we should, you know, commit to -- if they're using the guidelines --

I mean, I would even go further than that. I think that, and others can weigh in on this, but I think if the guideline -- if there are dose reconstruction guidelines for a given site at the time when they're doing a dose reconstruction, it should be included in the file, because --

MR. HINNEFELD: You know, it could be that.

CHAIRMAN GRIFFON: -- because -- because from our audit standpoint, you know, they may be very familiar with these changes and everything, but the auditors not, and for that archived record I think it's very important that it's there and it spells out exactly how they were approaching it at that time -- at that, you know, point in time.

MR. HINNEFELD: I mean, that could be a matter that could be automatic --

CHAIRMAN GRIFFON: Yes.

MR. HINNEFELD: -- whether you look or not. I mean, that actually -- if there's -- if you've got -- if you're working on, you know, you have a site leads. You know, Scott referred to site leads --

CHAIRMAN GRIFFON: Yes.

MR. HINNEFELD: -- which were senior dose reconstructors, you kind of are the expert on, you know, Paducah, for instance, just to make one up.

And so maybe just as a -- and then so you have dose reconstructors who are -- who do Paducah cases and they do a handful of sites.

So just as a matter of course, know if I'm doing a Paducah case I'm going to pull out if there's a Paducah guideline, I'm going to put it in there, whether I use it or not -- whether it's even relevant to the case or not.

CHAIRMAN GRIFFON: Right.

MR. HINNEFELD: I mean, that is

actually an easier thing to do.

CHAIRMAN GRIFFON: Yes.

MR. HINNEFELD: It's just grab it and put it in.

CHAIRMAN GRIFFON: That's what I thought I was asking for last time, and I thought --

MR. HINNEFELD: Well, you might have --

CHAIRMAN GRIFFON: Yes.

MR. HINNEFELD: -- I don't know.

CHAIRMAN GRIFFON: Anyway, I'd -- I would --

MR. HINNEFELD: I will -- I will pursue that with contractor, and I'll say I would like you to do this unless this is going to be really hard. Tell me why it's going to be really hard.

CHAIRMAN GRIFFON: Okay. Can we get a firm answer, up or down, in the May meeting?

MR. HINNEFELD: I should think I

would be able to e-mail it to you before May.

CHAIRMAN GRIFFON: Okay.

MR. HINNEFELD: Yes.

CHAIRMAN GRIFFON: All right, because I want to be able to report back on that at the meeting.

MR. HINNEFELD: Okay.

CHAIRMAN GRIFFON: All right. I guess we'll --

MR. HINNEFELD: Yes, I apologize, but I didn't get this resolved earlier and we had different understanding where we were on it. I'm really sorry about that.

CHAIRMAN GRIFFON: We'll -- we'll leave it at that, and I think, Wanda, we'll take like an early break now. I know we're not really ready for a break, but I need about 10 minutes -- maybe 10 or 15 minutes. We've got to get copies of this report, and we'll e-mail you a version of the report and this first hundred cases report.

MEMBER MUNN: Thank you. I really

appreciate that, Mark.

CHAIRMAN GRIFFON: Yes, we'll move that up on the agenda, because I really want to -- I think we need your comments on this, so we'll get that out in a few minutes.

MEMBER MUNN: I'll go get a bowl of Wheaties. Thank you.

MR. KATZ: Have we gained John Poston or Bob Presley?

CHAIRMAN GRIFFON: All right, can we --

MR. KATZ: Yes, I'm going to put the line on mute for 10 minutes.

MEMBER MUNN: Very good, thank you.

MR. KATZ: Thanks.

MEMBER MUNN: Bye, bye.

(Whereupon, the above-entitled matter went off the record at 10:07 a.m., and resumed at 10:28 a.m.)

MR. KATZ: Wanda and Mike and all, we're back on line.

MEMBER MUNN: Hi.

MR. KATZ: Are you about ready? Have you gotten through the -- skimming it, at least?

CHAIRMAN GRIFFON: Yes, it's really -- Wanda and Mike, it's really that first page that -- really that first page that was changed. That should be the focus, I think, unless we decide that we don't want, you know, have the whole -- I mean, the body of the report we reviewed before, and sort of -- that was what we brought to the board previously.

MEMBER MUNN: Yes, we've seen this -- the material --

CHAIRMAN GRIFFON: Yes, yes.

MEMBER MUNN: -- the first part that is of interest.

CHAIRMAN GRIFFON: Right, yes.

MEMBER MUNN: And I have a severe problem reading material like this, simply because my -- my overwhelming desire to wordsmith things.

CHAIRMAN GRIFFON: I know. Well,

that was my severe concern about e-mailing it this way, but you know --

MEMBER MUNN: Right, thank you.

CHAIRMAN GRIFFON: It's very rough, and if we can just sort of talk -- I guess the major points made instead of -- and we can wordsmith later, or maybe you can send me wordsmith stuff --

MEMBER MUNN: Yes, I think that's --

CHAIRMAN GRIFFON: -- yes, because I know it's rough on the wordsmith side. Believe me, I was fading off at about 10 finishing this last night, so I had to get up for my 3:45 alarm, too.

MEMBER MUNN: It's not fun.

CHAIRMAN GRIFFON: Anyway, so, you know, what I tried to do was to more or less condense some of this down, but also be attentive to, you know, what came out of these first 100 cases, you know, and so the introductory part sort of mirrors the -- the

actual Section I where you have the case review methodology.

I mean, I had to give some context to the front end, and then I just tried to outline the primary findings. In the last paragraph I note that these are, you know, more detailed in the full body of the report.

But then I -- I mean, I tried to also indicate that in the last paragraph at the bottom of the first page anyway that -- and I believe this to be true that, you know, some -- some results of this include, you know, modifications, and maybe we want to say in part. I don't think it's totally because of the audit, but in part this audit resulted in the DR --

MEMBER MUNN: Had an impact in our final report.

CHAIRMAN GRIFFON: Yes, has impacted or -- so the wordsmithing we can --

MEMBER MUNN: Yes, right.

CHAIRMAN GRIFFON: -- we can fool

around with, but has impacted the DR final report, the modification of the phone interview and questionnaire, and revision of several -- and I didn't get into all the specific procedures, but I think TIB eight and 10 come to mind, you know, some of the early TIBs that came up on a number of findings, I think, you know, so we -- we had some impact in that way.

MEMBER MUNN: But then what is most preferable in an administrative summary of this type is not that type of detail anyhow.

CHAIRMAN GRIFFON: Right, right. I guess what I saw a note in -- I think it was one of Paul's comments during the board meeting was part of this -- you should have, you know, sort of implications but also where from here, and I wasn't sure -- I don't think I bridged that gap like sort of where from here, you know, other than to say that my last paragraph I was trying to get in that last paragraph that we -- and I was going to say

although often tedious, but we think the process is effective. I mean, that this resolution process it takes -- it does take time, but it has, in my opinion anyway, been effective to have the board with the contractor at the table and just hammer these things out.

MEMBER MUNN: Well, it takes time, and it is difficult, yes.

CHAIRMAN GRIFFON: Yes, right, right, right.

And it has been effective, but not only, you know, sort of to what end. Well, to what end is some of those things that we have impacted and have been revised and overall made improvements in the program that way, I think.

MEMBER MUNN: Well, this -- this level of detail in reviewing selective cases is difficult and time-consuming, but I think the sense of what you're saying in the last paragraph is correct.

CHAIRMAN GRIFFON: I mean, the other -- the other, you know -- I guess the open question is, you know, am I missing the mark on some things. Do you want to add some things in?

We could -- we could certainly have friendly amendments offered when we bring this to the board, like if you decide, Wanda, that there is a better last paragraph, and certainly any wordsmithing I would see as friendly amendments, you know, because it needs -- it definitely needs some of that.

But is there any big points that you think should have been included --

MEMBER MUNN: Well, you know the discussion we were having just before you broke to send this material out has a direct bearing on what we're saying here.

CHAIRMAN GRIFFON: Yes, and that's number two in my thing, yes, yes.

MEMBER MUNN: Yes, yes, and that's what I'm looking at and -- and thinking how

much is reasonable and how much is really necessary for truly adequate audits. And unless you resolve that without my brain assimilating it we still haven't reached that point.

CHAIRMAN GRIFFON: Yes, I'm not sure we've gotten to the how much, but I think we did -- at least my opinion is that in the first 100 cases we -- and especially in the -- if I'm not wrong I think it was the fifth set, where we got into some of those best estimate cases where we really -- at least I was saying, geez, it would be nice to have those guidelines in these cases, because I think there were a number of Savannah River one and a couple of Hanford ones where -- and this was early enough on, maybe, that the TBDs weren't completed, or TIB 60 wasn't out there, or whatever, and we were trying to read in between the lines of what assumptions the DR -- the dose reconstructor made at the time, and that became very difficult from an audit

standpoint. It wasn't a good trail there for us to latch onto.

But I think in this report I left -- I guess my purpose there was, you know, no, I'm not going to get real specific because I don't think even at this point, you know, we're at a point where we can be real specific. I think we still have to resolve some of that on, you know, on what can be expected and what -- I think the notion that I want to be out there was that -- that showing more of that work and the, you know, those guidelines that got them there would have made it -- would have greatly improved the audit process from our standpoint.

MR. HINNEFELD: I think the method -- and this really isn't my issue. It's not my product, but I think the message might be more as, kind of like John phrased it, the record should have a clear path, to use that language --

CHAIRMAN GRIFFON: Yes.

MR. HINNEFELD: You know, the dose reconstruction file should leave, you know -- it should be unambiguous about what was done to arrive at this decision, and to the extent that you could put some of these details in as examples might capture the flavor because that's certainly is going to ring true with everyone -- you know, everybody who reads, write and associates with this program will agree --

CHAIRMAN GRIFFON: Right.

MR. HINNEFELD: -- it should be an unambiguous description of how you arrived at the decision. And so I think maybe something like that -- and it solves the dilemma of is it really going to be worth it? Is it going to work? Is it going to do this? Is it going to take that form or this form?

I think that might be option --

CHAIRMAN GRIFFON: I just wrote down that phrase because I like that.

MR. HINNEFELD: I will stop my

wordsmithing at this point, I promise.

DR. MAURO: I mean, that's the essence of what we're talking about. The key word is transparency.

CHAIRMAN GRIFFON: Yes, yes. I'll consider modifying number two for that. And back to what John said earlier, if you notice the last part of number two. That's sort of what I was getting at, that archival record.

DR. MAURO: Yes.

CHAIRMAN GRIFFON: So in addition to an auditable -- yes, but that -- I like that phraseology. Oh, sorry. I'm so conscious about being close to the mikes, you know. Anyway -- okay.

MEMBER MUNN: From the word unambiguous is certainly to the point.

CHAIRMAN GRIFFON: I like -- I definitely thank you, Stu. I'll try to revise Number Two to include something to that effect.

Any other thoughts on that, Mike or

Wanda? Mike, I haven't heard you weigh in on this.

MEMBER GIBSON: No, it sounds good, Mark.

MEMBER MUNN: My only thought is we're -- just trying to assimilate this for the first time is one that I've mentioned before, and that has to do more with the overall tenor of the statement than anything else.

It would be beneficial to consider the impact of relatively negative sounding statements that we send out to people, unless it is the feeling of the entire board that this is a negative process.

My personal opinion is that this is a positive process, and that as a result of what we're doing and the audits that have been done, we are improving and -- not only improving but also doing a better job of -- of fully capturing the actions of those reconstructions for, as you've already said

Mark, archival processes.

CHAIRMAN GRIFFON: I'm sorry. I was going to say when I was re-reading on the plane, that's part of what I was -- I was considering how is Wanda going to read this, you know. So, I will be open to some suggestions on tone, you know.

But on the other hand, you know, I feel pretty strongly about the five points that I wasn't going to --

MEMBER MUNN: Well, the content looks good to me.

CHAIRMAN GRIFFON: I wasn't going to try to sugarcoat things --

MEMBER MUNN: No, no.

CHAIRMAN GRIFFON: -- but I agree with you -- but we also want to say it like it is that I think NIOSH has been very -- you know, we've made some -- you know, here's the impact, and we -- it's an improving -- you know, there have been definitely some improvements, and so it's not meant to be a

totally negative report, but I also wasn't going to sugarcoat those findings. That's sort of how I was thinking about it.

MEMBER MUNN: Well, one of the other aspects that we've not discussed and doesn't jump out at one when you read it here is the internal processes, in my view, have improved significantly over the years.

The interactions of all of the organizations and individuals that are involved have been clarified significantly from the time we first started this, and that may be a point worth considering of whether it is added specifically to this or not, or whether it simply a thought that may be included a bit -- amplified just a little bit in that last paragraph.

CHAIRMAN GRIFFON: Can you tell me -- just give me an example, internal processes. I mean, I don't disagree with you, but I'm trying to understand what you mean by that, internal processes.

MEMBER MUNN: Well, I think everyone involved has a better concept of who does which segment of the work that's involved in these dose reconstructions, and it's not a simple and straightforward -- it didn't start out being a straightforward, simple process, and it's developed through the years, partly as a result of what has been done in group meetings like these.

And as I said, it's covered in concept --

CHAIRMAN GRIFFON: Yes.

MEMBER MUNN: -- in the last paragraph. We just simply didn't point it out anywhere else, but that will probably work itself out as you wordsmith it a little bit.

CHAIRMAN GRIFFON: Well, my hope today is that we can maybe vote on this internal draft as a subcommittee, and then when we bring it to the board, Wanda, I would certainly take -- if you have some language there that you want to add on to the last

paragraph, you know, friendly amendments, we can do it that way, if you want.

My hope is to get the report before the board next time, so logistically I hate to hold it up again here, because then we won't get to it until --

MEMBER MUNN: No, let's don't. Let's don't. Your goal is to --

CHAIRMAN GRIFFON: I don't disagree with what you just said, and if you have some language that you want to sort of add into that last paragraph or wherever it might fit related to that statement, I think we can add that on.

MEMBER MUNN: Are you going to try to come to some conclusion about anything more than the general sense of what we have here yet today? Are you trying to get an almost finalized copy today?

CHAIRMAN GRIFFON: Yes, my hope was to get a finalized copy, but, you know, I know there's wordsmithing to be done, so --

Make a suggestion, Ted?

MR. KATZ: I just have a suggestion which I raised the last time the subcommittee met and it was in response to, I think, how Paul and some of the people that are not involved in this process responded when Mark gave his update at the Albuquerque meeting.

And that's -- again, sort of sitting in the chair which I don't fit in, the Secretary of HHS, and coming to this report, these are all sort of close, narrow technical matters that are being brought to the attention of the Secretary, and I don't think he will -- I think that's fine. I think they're simply stated and so on, but what's not addressed in this report to the Secretary, given the amount of time now that's been -- everybody's gone at this is sort of the thousand-foot picture. What is the board finding in general about at this point in time about the quality and validity of Dose reconstructions.

Stu sent out to all of you in response to the last subcommittee meeting a breakout that shows, you know, how many of different kinds of dose reconstructions have been done to date.

And I think it was a very illuminating breakout actually, and that -- I mean, that gives you a context where you could speak to -- well, you know, for 70 percent, 60 percent, 30 percent, 10 percent -- you know, this is generally what the board is seeing at this point in time in terms of, you know, are people getting claimant favorable results from their Dose reconstructions, what have you. I'm not going to put any words into the subcommittee's --

But those sort of general -- I mean, that's really -- that's the bottom line charge for the auditing is so that the Secretary can know, you know, how long was this being done at this point in time, and where does it have to go from here.

And I think that you've given a little bit about where to go from here in a process sense, and you've given, I think, some nice, positive information about how the process is working in improving the Dose Reconstruction Program, but not really answering the question of how does it stand right now.

I think that's -- if I were the Secretary I'd want to know something about that at this point.

CHAIRMAN GRIFFON: And another problem with that is that these 100 cases were done over two years ago now, right? So we're kind of looking at a snapshot two years ago, you know.

MR. KATZ: But I think you can also speak to even though you haven't completed everything in the current cases. I mean, you have a general sense of how things are now, and you probably could speak to it without having final results about everything that's

still in process too, I believe --

CHAIRMAN GRIFFON: Right.

MR. KATZ: -- as to how things are looking in a tentative sense at this point in time.

CHAIRMAN GRIFFON: Right.

MR. KATZ: It's the board's decision as to how to report, but, again, as the Secretary I think I'd want to know something about the bottom line as it stands right now.

MEMBER MUNN: Well, and again I have not gotten through to the end of the document here and can't remember what we said we were going to include as enclosures. It would seem that a roundup of what has been done and what the results were would be fairly key here, and probably should be a part of -- at least referenced in the executive summary here.

CHAIRMAN GRIFFON: I didn't send the attachments. There are those attachments

that Kathy Behling primarily put together summarizing the cases.

MEMBER MUNN: Right, right.

CHAIRMAN GRIFFON: But, I mean, this question of the overall quality and validity of the Dose reconstructions, I mean, I did avoid that. Again, you're right. I think you're right, Paul did bring that up, you know, the bottom line question of -- and I think part of it is that -- and some of it, I think, is hinted at in the five things, but not absolutely pulled out, but we -- you know, I mean, this gets down to the question of do we want to try to give a grade, you know, after a hundred cases are reviewed we feel that, you know --

MR. KATZ: It could be very qualitative. You don't have to give a grade.

CHAIRMAN GRIFFON: -- or how -- I mean, how do we want to -- I guess I'm open for suggestions to how we want to say that. You know, my feeling is that, you know, if you

want to get down to right and wrong, I don't think we want to go there, how many they got right and wrong.

There were -- I'm pretty sure no one would dispute that there were several cases that they got the wrong result on in this first 100 cases, although all those that everybody would agree on anyway were in the claimant-favorable direction. I mean, these were those overestimates for compensable claims, so those, you know, they got wrong. So that's, you know, if you want to get down to a just -- you know.

And then there's the -- my take on the other side of it is that we have five best estimate cases, and that's where we got into this fuzzy ground. That's why I wrote it down as a finding this way, instead of -- so maybe we can get at this qualitatively, but I don't think we want to get into a sort of they got 85 percent, they got 95 percent, you know.

MR. KATZ: If you have a large -- I

mean, you can give contacts. They have a large quantity of claims for which they have overestimated or underestimated to expedite those, and how well has that worked. Has that gotten people compensated quickly, without error, and vice versa?

I mean, I think you can speak to that whole pie chart in effect, piece by piece. I mean, that pie chart was broken out into finer gradations than you would probably want to speak to because, you know, whether it's, you know, whether it's an overestimate based on internal or external or both doesn't so much matter, but just sort of a sense of when NIOSH is overestimating, how are they doing when they're underestimating to get people compensated quickly? How are they doing and so on, I'm going to --

CHAIRMAN GRIFFON: Yes.

MR. KATZ: You could speak to it, you know. You could speak to those. And I think some of that wouldn't necessarily be

controversial within the board, but I could be wrong about that.

CHAIRMAN GRIFFON: Stu, again, Number 4 does sort of get there.

MR. KATZ: But that's a few cases -- -

CHAIRMAN GRIFFON: Not as bold as you -- right.

MR. KATZ: -- that's a few cases as opposed to, you know, 40 percent of the cases where they overestimated properly or whatever it is, but, I mean, you have the pie chart. I mean --

CHAIRMAN GRIFFON: Right, right.

MR. KATZ: You're talking about tens of thousands -- you know, tens of thousands. You're talking about thousands of cases in these different categories.

CHAIRMAN GRIFFON: Yes.

MEMBER MUNN: And the chart is ultimately going to be what people will remember other than the words.

CHAIRMAN GRIFFON: And I'm not -- but I'm not sure --

MR. KATZ: I'm not suggesting --

CHAIRMAN GRIFFON: And you're getting a little more complicated how you, you know, if we can say, okay, you know, I don't know how many. I don't know the right number for this, but say the overestimate, I think it was four. I'm not sure on that. Four that were overestimated that ended up being compensable, when they shouldn't have been using the overestimate approach.

So say that's four out of 100, and then we realize there's so many overestimated cases in the whole pie. I'm not ready to say that that -- because that policy was changed at a certain point, so, you know, I'm not saying that that probably likely affected four percent of the overall. You know what I mean?

MR. KATZ: No, but, for example, there are thousands of cases for which OCAS has underestimated to get people compensated

quickly, has done a quick sort of underestimate of their dose to get people compensated in an expedited fashion.

How well has that process worked for that -- you know, if that's 15 percent of the entire caseload, you know, then you can say for 15 percent of the caseload this is how OCAS has gone at it, and this is how it's worked, and this is the problems with it.

And you can go down -- again, you could probably break the pie chart into four pieces or so that are really significant because there's a lot of lumping that could be done, and you could just speak generally about each piece of that, you know, with the context of how much of the whole load is this.

And what were the problems we saw with these, and what's the good that we've seen with this piece. I think you could do that -- and, again, I think that is what the Secretary would want to know about, more than that -- I'm sure the Secretary would be happy

to know that the process is going well and working together and improving the program, but I think that's the kind of bottom line messaging that the Secretary would want to know about.

MEMBER MUNN: Generally, that's what I'd expect to see in an executive summary, and that charts, especially when they're as simplified as that pie chart could be made -- always an outstanding way to transmit a lot of information in one glimpse.

So it's perhaps something we should strongly consider in terms of inclusion here, and --

CHAIRMAN GRIFFON: We can try --

MEMBER MUNN: -- perhaps have a single statement with reference to it.

CHAIRMAN GRIFFON: I mean, I can try to add that in. The question is timing on this next meeting, but I can try to add -- when you say if we state it qualitatively, I guess I was hesitating on it because if we

started to try to be quantitative about it, I thought we were going to go down a path where --

MR. KATZ: No, I understand that. I understand that perfectly. I mean, the only quantitative part is just the -- how much of the pie are we talking about with the qualitative information we're giving --

CHAIRMAN GRIFFON: Right, right, right.

MR. KATZ: -- so there's context.

MEMBER GIBSON: But, Mark, it also seems to me that we don't want the graph to make it look so simple that the wording and all of the work that we've put into this is just glossed over.

CHAIRMAN GRIFFON: Right.

MEMBER MUNN: I think that's unlikely, but it's -- especially if we've already given some sense of the percentage of cases that are even being involved in what we're looking at. That's -- which we do later

in the -- I believe we -- if I remember the letter from before, I believe we discuss, we mention the fact, not in this executive summary but elsewhere that -- that we're doing two and a half percent of cases, and this is only a hundred out of whatever number would be applicable for the period that these 100 cases -- I can't remember the date, the cutoff for the first 100 cases that we were looking at, but that would give a better feel for the --

DR. MAURO: That was the first two years out of a five-year contract, so those first 100 cases really were effectively processed during that first two years.

MEMBER MUNN: Yes, these were many years ago now and --

CHAIRMAN GRIFFON: Well, what I can do is add on some of this stuff, and I've got sort of -- I'm just thinking through this -- the underestimates for compensable claims, how effective is that process working. I think that's legitimate to put in there.

Overestimates for non-compensable claims and how -- and -- but in there I would add some of the pitfalls that have been identified, such as, you know, people coming back with additional cancers, PER reviews changing their numbers to lower values later, you know.

So, there have been -- if not necessarily technical problems, it's a communication to the public problem, you know.

MR. KATZ: It's been an important issue. It's not a small issue; it's an important issue in this program.

CHAIRMAN GRIFFON: Right, right. It's in the overestimate for a compensable, I think we have to identify that. The policy's changed, but it was an issue earlier, you know -- and then the best estimate.

Yes, go ahead.

DR. MAURO: I'm really stepping further away from this. I think that, if you remember, what we have here is the date the

board has performed audits of 140 cases.

CHAIRMAN GRIFFON: Right.

DR. MAURO: This represents the first 100.

So that's a very big context and, therefore, within that 240 -- it has to be understood by the -- that we're really looking at the first 100.

So there's a story emerges from that which is obviously different than if you were, you know, trying to capture where we are in the 240.

The other things that I -- one of the things that I've seen -- and I don't know whether you want to capture this or not. This is just -- I use the term unintended consequences. Let me explain what I mean.

The regulations have an efficiency requirement, have a consistency requirement, transparency, hierarchy of data. All of these things are fundamental to, you know, the regs. And one of the things that I've seen happen

in the process of trying to navigate and not only that and putting out water -- how many 24,000?

Whatever the number the pump is, putting them out, the pressure to put them out, so you're trying to put all these out as quickly as you can, but within the context of what I say competing objectives, that is it's not always easy to be efficient and meet the hierarchy of data.

When do you resort to surrogate data when you don't? There are so many judgments that have to navigate their way through what I would call to a degree certain competing goals, which they should be because you're trying -- and I could see the struggle.

And what we're watching is the maturation of a process that's trying to strike a balance that's navigating its way through this very difficult competing objectives.

And as a result of that there are

certain unintended consequences that came out that where -- and the thing that the board is doing is putting a spotlight on that. That's really what this whole thing that we've been doing to me has -- it's a way that while NIOSH is inside the trenches working the problems, putting out thousands of these Drs, what does the board do? The board steps back and says, well, you know -- and tries to step up into the stratosphere and starts to get a sense for, you know, where within this process and the demands placed on it by the regulations and the statute have there been unintended consequences that we have to recognize and start to, I guess, improve so that we strike that balance where all of these missions that's dictated by the regulations can be -- can strike that proper balance.

And I think that in the first 100 that balance was not necessarily always struck. And there's a process at work to re-establish that balance, to try to find that.

And I could see this whole program moving in that direction.

I don't know -- that kind of theme is very distant, but it's -- from the way you --

CHAIRMAN GRIFFON: Unintended consequences kind of falls off from --

DR. MAURO: Yes, it does, it does, but I mean I think is a very -- quite frankly I think there should be a positive. I think that the process that we're doing is very difficult, but if you step back and you look at what it is that we really did, it's really dealing with the tension, Lew Wade's word, the tension that exists within the regulations themselves to try to strike a balance, and this is not easy.

CHAIRMAN GRIFFON: No, that's fine. I got some of that down.

I guess what I'll offer is -- and Wanda and Mike if -- I guess what I'm going to try to do is redraft this report, and

obviously we won't be able to vote on it as a subcommittee, but maybe email it, you know, not the day before the May meeting, but email it a week before at least, and I will definitely commit to that, because if I do it in the next couple of days it will be fresh on my mind, too, and otherwise -- because when I went back to this I had forgotten some of those things, you know.

So I'll try to do this while it's fresh, email it out to the subcommittee members, and then present it at the board meeting and say that we had a lengthy discussion on these issues, but we didn't, you know, because of timing we didn't all vote on a draft, and then we can just vote on the report as a full board, you know, if that's acceptable.

MEMBER MUNN: Well, it's certainly acceptable to me. I'm sorry we can't have another hour or two-hour long teleconference specifically addressing this and nothing else

as it comes to the board, but I think it will be adequate for us to complete that task through email exchange if we all actually do sit down and address ourselves to it.

It's --

CHAIRMAN GRIFFON: I'd be willing to do a couple-hour conference call, but I'm not sure how long in advance we need to announce a subcommittee meeting.

MEMBER MUNN: I don't know either.

CHAIRMAN GRIFFON: Can we get it in before the board meeting? Is that --

MR. KATZ: Well, I mean we're ordinarily supposed to have 30 days to announce it. We can do a rushed thing. I would also note though that this board meeting agenda is relatively light on the second day, meaning that there's a good amount of time for board discussion for sort of hammering things out maybe to a degree --

CHAIRMAN GRIFFON: Right.

MR. KATZ: -- that you wouldn't

ordinarily have time for in a full board meeting, so --

CHAIRMAN GRIFFON: But I agree with Wanda, I'd rather come with a product from the subcommittee. That would be nice.

MEMBER MUNN: It would be very nice if we could. If we have to do it through email exchange and individual conversations with each other, then that's -- I'm sure that can be done. We haven't done that in the past, but --

CHAIRMAN GRIFFON: Well, let me -- at lunch time let me look at the calendars with Ted and everyone here --

MR. KATZ: Right.

CHAIRMAN GRIFFON: -- and let's see if we can get maybe a short conference. It won't have to be a face-to-face. We can do a conference call meeting and, you know, I agree with you, Wanda, I'd like to do it that way, if we can.

MR. KATZ: That calendar -- the

week right before the board meeting. I mean, I don't know if that's enough time --

CHAIRMAN GRIFFON: Has room?

MR. KATZ: -- but that week has room. It doesn't give the rest of the board a lot of time with it, but if you did it early in that week then they'd still, you know, have more less a week to cogitate over what you deliver.

CHAIRMAN GRIFFON: All right, we'll keep that option open, Wanda, either via email or a better situation would be by a conference call, either a week before or two weeks before the --

MR. KATZ: I mean, by email obviously you can't have a vote of the subcommittee or anything by email.

CHAIRMAN GRIFFON: Right.

MR. KATZ: You can share information.

CHAIRMAN GRIFFON: You can share information, but we can't vote, right.

Understood. So we'll try to convene a conference call maybe a week before the board meeting, but we'll look at calendars and I'll email you on that, Wanda. And I want to make sure we get John also available -- John Poston, I'm sorry.

MEMBER MUNN: Yes, that will be fine. The only day that week, looking at my calendar right now that is impossible for me is the fourth, that Monday. We have a medical procedure with my spouse, and I won't be able to be on board at all on the fourth, but any other day I could -- of that week prior to the Amarillo meeting.

CHAIRMAN GRIFFON: Okay.

MR. KATZ: Okay, May 5th might be a good one to shoot for.

CHAIRMAN GRIFFON: Cinco de Mayo, maybe. Okay. All right, I'll email people about that, but I'll try to resolve it before we leave today because Ted has to -- I mean, we have to make an announcement --

MR. KATZ: We have to make a Federal Register notice for that.

CHAIRMAN GRIFFON: Okay.

MEMBER MUNN: Good, yes.

CHAIRMAN GRIFFON: So I guess we'll leave the topic for now.

MEMBER MUNN: I'll look forward to getting your second round.

CHAIRMAN GRIFFON: You had another draft. Sixth round, actually, but who's counting?

MEMBER MUNN: Well, yes, but --

CHAIRMAN GRIFFON: Okay, I've got all my revs. Anyway -- so do we want -- if everybody's ready I was going to go into the sixth set and seventh set now, and then unless people need a break I would just as soon -- let's go into the sixth set at least and try to get through that, and then we'll get our lunch break in.

And, Wanda, are you dialing off soon or hanging up?

MEMBER MUNN: I'll try to hang in for another 45 minutes or so, but --

CHAIRMAN GRIFFON: Okay.

MEMBER MUNN: -- but by nine o'clock my time I have to be out of here.

CHAIRMAN GRIFFON: All right.

MEMBER MUNN: Thanks.

CHAIRMAN GRIFFON: Well, I'm glad we -- I'm sorry about it being so rough, but I'm glad we had the discussion while you were on the line.

MEMBER MUNN: Well, I appreciate your moving it up. Thanks, because I -- obviously if this is important and certainly looms large in my own personal concerns over what we're doing in this subcommittee, so thanks.

CHAIRMAN GRIFFON: All right. Okay, so if everybody's got -- I mailed like -- much like everybody else I mailed the updated matrices which I promised at the last subcommittee meeting and said that I would

send them out like a day later. I sent them out a day before this meeting, so they were a little late, but they are -- I think they're pretty easily formatted to go through. The yellow highlights should have the outstanding actions, so if we can just kind of turn to that sixth matrix and maybe start our discussion from there, and then you guys can tell me what's been sent around in the last couple of days.

MEMBER MUNN: There's one thing I ought to mention also, Mark. Two weeks ago, my electronic file for all of my ABRWH data self-destructed, and so if we're referring to any material that was transmitted or was in place prior to the month of March, then I'm going to have to back track and get that information from someone else, but --

CHAIRMAN GRIFFON: Okay.

MEMBER MUNN: -- I do not have the information on which I've been building for --

CHAIRMAN GRIFFON: Seventeen years.

Well, you do have the matrices, right, because I think I sent those out the other night?

MEMBER MUNN: I believe so. They're the sixth set, right?

CHAIRMAN GRIFFON: So I'm just going to do the same thing I did the last meeting, pan down and look for yellow highlighted items.

MEMBER MUNN: Right.

CHAIRMAN GRIFFON: The first one I have is Case Number 104.7 -- or Finding 104.7, asking NIOSH to provide the basis for the concentration of transuranics use for this site.

Do you have that? That was a site specific one, not a --

MR. HINNEFELD: The research into transuranics and uranium was done essentially on a grand scale. What can we find out about this, because this particular site -- I was just trying to open -- Doug, do you know which

site this is, off hand?

MR. SIEBERT: Superior Steel.

MR. HINNEFELD: So, it's Superior Steel. So it's one of the AWEs that would take the metal that we sent them and machine it.

And so there's a category of this research that has, you know, that essentially that addresses the steel -- or the metal inventory, uranium metal inventory at various stages and things like that.

And since it has a number of aspects associated with it, it's been somewhat controversial in our own shop, within OCAS's shop, and we've -- because of competing priorities have not come to a resolution on how exactly we'll proceed.

There is a draft of TIB prepared that addresses essentially. It would describe for uranium metal -- you know, this is the content, the likely content or the bounding content, or however it would be written for

these years and then for these years. I think there would some year-to-year specification in there, although I'm not terribly familiar with it. I haven't looked at it for quite a while. I'm not one of the people involved.

So it would be informative of this. I mean, it would be a way to describe the research that has been done, and it occurs to me that I should just go do that. I should just go read, you know, figure out what research has been done that reflects the metal content, not worry about the rest, and I can provide that information. I have not.

And I've kind of been, you know, lazily resting. I've been doing other things, because I've got plenty to do and letting this sit until we could come within OCAS to some resolution of that.

What is our approach going to be, the TIB is -- doesn't seem to be as precise as it could be, for instance.

So, maybe it is as precise as it

can be, you know. There's that debate as to what's going on. But given that I don't know that the debate really speaks to the metal, the uranium metal content, which is as I understand it -- in my poor understanding of this is probably fairly well understood, as opposed to the immediate products where the concentrations do not stay.

CHAIRMAN GRIFFON: Right.

MR. HINNEFELD: Once you've got the metal, it's going to stay there. So I could go and try to retrieve that -- you know, retrieve that portion of the research, you know, or that portion of the document -- kind of reproduce that for this subcommittee and say this is why we believe these values are correct, or the values in this TIB were based on old research and are not good, and we'll have to, you know, at least do something like a PER to this particular site.

DR. MAURO: I may be able to help a little. Because of the work we do with

Fernald and because a lot of the work I have done on these sites, I find myself getting very familiar with the uranium issue, and it's taken form in my mind what the issue is.

In essence, the metal that was shipped to AWE facilities, it was a specification that it shouldn't really not have more than parts per billion.

CHAIRMAN GRIFFON: That was an internal DOE specification?

DR. MAURO: Right, and from what we can tell that was at least starting at a given point in time seemed to hold up well, so when I review an AWE I usually come down pretty favorably as it applied to an AWE.

Where we started to run into a little trouble is at Fernald. Fernald would receive the material from Hanford and other facilities and in theory the default recycled uranium was 100 parts per billion, but there are lots of exceptions to that, especially this tower ash from Paducah, and in addition

there was another one that challenges that default assumption, and that is that apparently there was a change in the early years going from -- that go through the chemical separations process, the deliberate effort to chemically separate out the uranium.

There would be a specification on -- once you could separate the uranium out, to make sure that it met a certain spec. That was when they took the spent fuel and deliberately went through this process to separate out the plutonium, uranium.

There was also a plutonium step. But prior to that date which I believe is sometime in the mid fifties they were actually -- the digested spent fuel that was in the tanks at Hanford became -- was the source that was there, and then it came from there and then it was processed.

My understanding is that when they were in that mode, when they were working from the digestive spent fuel that was coming out

of the tanks that was being recycled, that's when there's -- we have some question about the break down and understanding the composition of the material that was sent to Fernald, and the material that may very well have gone on to AWEs, because there was less control over the mix.

And the mix of not only the plutonium to uranium that's 100 parts per billion but neptunium and the other radionuclides relevant -- in the mix also became a lot more uncertain.

So right now SC&A's position I guess is that the first line of concern is that there's an elbow between when they were working from digested material in the tanks and when they weren't, and when they weren't later on there was a lot more control of knowing what we were dealing with, as opposed to when they were working from material that was coming out of these.

CHAIRMAN GRIFFON: And you think

that time when they started to do the separations at Hanford or whatever, that was in the mid fifties or sixties. But before that it wasn't happening --

DR. MAURO: This is -- the way I see it is the root cause of the concern over getting a good handle on making sure that we understand what the composition of the recycled uranium is.

CHAIRMAN GRIFFON: Right.

DR. MAURO: Now the degree to which it reaches though -- this concern -- see, you have barriers. You've got the barrier of control that's at Hanford.

Then you go to Fernald, and of course that started up in I guess '52.

CHAIRMAN GRIFFON: I think it started around '52.

DR. MAURO: Right. And there was a time period where Fernald was dealing with this material, and of course from Fernald it goes to the AWEs, but there was also before

that. I mean, these AWEs were getting material before Fernald, you know.

CHAIRMAN GRIFFON: Right.

DR. MAURO: So we do have lots of AWEs that were processing recycled uranium. So the question was when they were getting that material before it came from Fernald they were getting that material, did the 10 part per billion still hold?

CHAIRMAN GRIFFON: Right, were there specs on it?

DR. MAURO: Exactly, so -- I mean, I'm trying to get the -- this is really where the I think the game is, where we have to get a good handle on -- and it has to do with time, and when the controls start to come in and take hold.

Once they took hold, I think that the 10 part per billion and 100 part per billion probably holds well. It's before those controls were in place.

CHAIRMAN GRIFFON: And I think

you're right. Complex wide, that's an important thing to look at, but for this individual part I think Stu's answer's I think a good approach here, you know. Look back to this particular case, see what you have.

DR. MAURO: Well, this is Superior Steel. I mean, within that context just on the date itself would give you insight on whether or not --

CHAIRMAN GRIFFON: Right.

DR. MAURO: -- you could trust --

CHAIRMAN GRIFFON: Yes, and I don't know when it was operational. Do you know off hand?

DR. MAURO: Not off hand. I did that once, and I don't remember the date.

CHAIRMAN GRIFFON: Well, let's just leave it as an outstanding action, but -- but I heard what you're saying, John, and that's good information.

But, Stu, you'll follow up --

MR. HINNEFELD: Yes, and it occurs

to me now sitting here that this could have been -- I've been sitting here waiting, thinking that, well, until we OCAS resolve our internal discussion about how were we going to deal with recycled uranium which actually informs us of some other dose -- there are other dose reconstructions as well, but we think we have, you know, the intention was let's describe what we can. I mean, and it may say if you've got site-specific data then this is the default. That may be what it says. I don't really know.

And I just kind of have been saying well until that's resolved there's no point in trying to resolve these, and that's not entirely true. If the debate doesn't concern what this DR --

CHAIRMAN GRIFFON: That's what I'm thinking. This might be a simpler situation --

MR. HINNEFELD: Yes.

CHAIRMAN GRIFFON: -- than some

other site. Some of the sites are going to get complicated because you overlap that time frame you were talking about.

DR. MAURO: It depends on where it falls.

CHAIRMAN GRIFFON: We might be able to resolve this one a little quicker.

MEMBER MUNN: Now did I understand that conversation correctly to boil down to how effective were early reprocessing efforts in actually extracting the materials that they were built to extract.

Is that the real question here?

DR. MAURO: I think it's a matter of implementing technical specifications on the product. That is, at some point in the process the ability to control the quantity of plutonium and other radionuclides in the recycled uranium, it improved as time went on, so that those specifications were in place, and the controls were in place to know exactly what we were dealing with.

MEMBER MUNN: Right.

DR. MAURO: As you go back in time, those controls were a little less -- they were more ambiguous.

MEMBER MUNN: Well, they were rudimentary, but the question then becomes whether it's necessary to know the source of the material as well as the approximate dates that the reprocessing of the material took place. In fact, isn't that getting enormously complicated?

CHAIRMAN GRIFFON: Well, I guess all we're asking for is, you know -- and maybe it is, maybe -- I don't know. Maybe what Stu's going to come back and say, you know, that we chose these values because we're not exactly sure of the source, and this would be bounding, or something like -- you know.

So all we're looking to understand in this particular case is why did you select the numbers that you did for -- is it General Steel?

DR. MAURO: Superior Steel.

CHAIRMAN GRIFFON: Superior Steel, I'm sorry, for Superior Steel.

So what's the basis for those numbers -- and, NIOSH may come back and say we, you know -- like you said we couldn't track down every source that they got, but based on our knowledge this would be the most bounding value, or something like that.

MR. HINNEFELD: And we may know that, and I just haven't pursued it to --

CHAIRMAN GRIFFON: That's sort of what I'm thinking, Wanda, anyway.

MEMBER MUNN: Okay.

CHAIRMAN GRIFFON: All right. Well, we'll leave it as an action, so we're not going to close the sixth set.

DR. MAURO: Well, does this go to -- this doesn't go to OTIB 53 then. In other words, this is not something that would be transferred?

CHAIRMAN GRIFFON: That's what I

was trying to avoid --

MR. HINNEFELD: Well, that --

CHAIRMAN GRIFFON: -- was not to have them rolled into that.

MR. HINNEFELD: You know, the thing about it is that we might be able to put this particular dose reconstruction or Superior Steel to bed without resolving everything else.

CHAIRMAN GRIFFON: So that's why I left it as an action on this site, because I thought the bigger TIB, it didn't have to wait --

DR. MAURO: I've got you.

CHAIRMAN GRIFFON: So I think we're on the same page now.

All right, moving on to 107.4, additional analysis information. Anyway --

MR. HINNEFELD: Well, I can summarize. I sent this fairly late yesterday -- pretty late yesterday for me, and I believe -- the note I took was to, let's see. I said

refer to the fairly extensive SC&A reaction in the resolution column. In other words, SC&A has provided a fairly extensive discussion of our earlier response, and then my --

The issue is what guidance is there for selecting chronic intake versus acute, or a series of acute intakes in cases like this, and what guidance is there for specifying duration of a chronic intake, and can't such guidance be developed. If so, where could it appear?

And it appears that it does exist now in OTIB-60, and the package I sent -- at least I hope I included -- is this the email I sent last night --

DR. MAURO: Yes.

MR. HINNEFELD: -- describes essentially passages from OTIB-60 that provide guidance to the dose reconstructors about choosing when you're doing a missed Dose calculation, what should you choose?

And there's -- the guidance in

OTIB-60 is largely that the presence or absence of bioassay data in and of itself is not a definitive indicator of potential for exposure. For instance, if a person is going on and is being monitored and their job -- and then there's a couple of years when they don't, say they were on annual sampling and there are a couple of years when they're not sampling, and although their job appears to remain the same and so on and so forth, then it would seem that their exposure potential -- you should not say that, well, they apparently weren't exposed because the sampling stopped, but there has to be some other evidence, as well. Just the sampling stopping would not do it, and there are examples in here what kind of evidence to look for.

And so I guess in this case -- and I guess -- like I said I looked at this very late and haven't studied it real closely, the persons essentially stayed in the same job, the other evidence -- the other supporting

evidence didn't go along with that, and so, you know, the guidance that's provided in the OTIB.

So essentially what we've -- what the project is about for this is the technique is usually to -- I think it's a chronic -- chronic exposure over the potential exposure period, if I'm not mistaken.

MEMBER MUNN: Right.

MR. HINNEFELD: So essentially it's -- you know, that kind of decision was made. Now I think there was some work done early on that indicates that chronic exposures -- that technique tends to bound what you can come up with if you do a series of acutes. Didn't we do that early on?

DR. MAURO: I remember Jim giving a presentation on that.

CHAIRMAN GRIFFON: Yes, David Allen, actually --

DR. MAURO: It was Dave Allen?

CHAIRMAN GRIFFON: -- earlier than

that. So we had a couple of those. We've been around the block on that.

MR. HINNEFELD: So that was -- and so that's kind of it, and since that's generally -- you know, since generally the bounding scenario then that's usually what's selected for this kind of exposure.

So that's how we got where we are. That's what I was able to find out.

CHAIRMAN GRIFFON: I mean, I think that answers the question. We had asked on 03-12 -- the real follow-up, I guess, on this issue was can NIOSH investigate -- you know, is there general guidance used for this determination, and your answer is yes, in OTIB-60, so I think that's our answer is that in OTIB-60 --

I'll ask Wanda this: is OTIB-60 still under review in the procedures work group, or have we --

MEMBER MUNN: Ask me that.

MS. BRACKETT: Well, this is Liz

Brackett, and I can tell you that it is. I'm right now asking questions --

CHAIRMAN GRIFFON: Yes, I thought it was.

MEMBER MUNN: Thank you, Liz. It was -- my memory was that it was still open, but I don't have my matrix in front of me.

MS. BRACKETT: I think there's just one open question on it. There have been some bounds already on it, and we're down to just one or two now, I think.

CHAIRMAN GRIFFON: Let me guess, chronic being bounding. I'm sorry, good to hear you, Liz.

So I just put that this guidance is available in OTIB-60. OTIB-60 is being reviewed in the procedures committee.

MEMBER MUNN: Right.

CHAIRMAN GRIFFON: So that's closed out for our purposes.

MR. FARVER: I mean, I just appointed the finding was in this case that

chronic wasn't binding.

CHAIRMAN GRIFFON: Right, that's right. That is.

MR. SIEBERT: Well, and I remember that we discussed this at the end of it last time. We did the comparison. We did the acutes, and it was both of those times larger than anything that was calculated in OTIB-1, any of the documented intakes that had been assessed at Savannah River.

MR. FARVER: Right, and this is what led to, well, how do you determine whether to choose multiple or acutes or chronics? It goes back to this finding or their response.

It pretty much -- I've been reviewing that while we've been talking, what's in OTIB-60, and it's not that specific.

CHAIRMAN GRIFFON: Okay, all right. So this is back to the -- and this is sort of the -- and these are the kind of findings that spurred my question of this DR guideline. You

know, is there more specificity in those guidelines, but apparently not, you're saying.

So I guess the issue remains on this. I'm sorry, Doug, I didn't mean to get ahead of myself.

MR. FARVER: I'm not sure you could make good guidelines to do that, you know, to determine whether you use multiple, acutes, or chronics, especially since this was a strange case. This was a person who moves around a lot and was on an annual frequency which compounds the problem, you know, considerably, so I don't know what you do.

CHAIRMAN GRIFFON: And then if you go back to Savannah River, I mean, some of my initial concerns about the whole high five -- I mean, you're saying that these would have exceeded any of the recorded, and that's -- I guess that's the key --

MR. FARVER: Right.

CHAIRMAN GRIFFON: -- recorded high intakes, you know, so --

MR. FARVER: And I guess I would feel better --

CHAIRMAN GRIFFON: -- is this guy someone who was missed?

MR. FARVER: -- is if it's somewhere included in the DR report that we've looked at multiple acutes, we've looked at chronic. Multiple acutes are not very likely because they would exceed, you know, the maximum dose here, so we chose chronic -- some kind of justification saying we looked at it, but.

MR. HINNEFELD: Well, I think -- I mean, like I said when you're generating an unambiguous record of the decision, it's always worthwhile to say as much as you can about how you reached your decision. I think that's probably a good point.

MR. FARVER: And whether that's in the DR report or in a comments form that's in the record -- or you want the records.

MR. HINNEFELD: The -- as I recall,

this person was this personal security officer --

MR. FARVER: Yes.

MR. HINNEFELD: Okay, so in order for the multiple acutes then to be, you know, realistic, then you would have a person who's generally in most places not considered highly exposed, you know, certainly not to an internal. I mean, it would probably be an event type of release likely for a significant exposure.

Multiple times, they went to a lot of places --

MR. FARVER: A lot of places --

MR. HINNEFELD: -- that I think in --

MEMBER MUNN: Briefly.

MR. HINNEFELD: -- in most cases that large intakes were people who were -- you would expect to be. Well, they were around an event, you know, a large event, or they were the people that you would expect to have --

you know, people who were welding and burning and cleaning out pipes and stuff.

CHAIRMAN GRIFFON: I don't know. I know a case -- I don't think this is revealing too much, but I know one of the cases that Tom LaBone presented several years back was this situation where somebody got unexpected, very, very elevated internal Dose, at least for the time period they were in, I think it was in the nineties --

MR. HINNEFELD: Yes, yes.

CHAIRMAN GRIFFON: -- and they were just doing surveillance through the -- you know, and there was this big debate between a number of people. I mean, I remember Skrable saying put BZAs on everyone and Tom LaBone saying, yes, right, that's ridiculous. That brings us back to school.

But, anyway, you know, so that's a situation where the guy wasn't being, you know -- so I don't know if --

MR. HINNEFELD: I mean, the large

intakes, you know, the large intakes context -- large, based on the time period, and these were multiple -- same guy, multiple large intakes, larger than any that had ever been reported down there, that had been recorded down there.

MR. FARVER: Right, all I'm saying is if you look at it and you say these are larger than anything recorded down there, so we chose this -- somewhere in the documentation that would be fine.

CHAIRMAN GRIFFON: Yes, again, that's unambiguous. I agree with you on this.

MR. FARVER: And this is what -- well, how do you know what to choose between the two?

MS. BRACKETT: Well, I -- in this case it clearly should have been modeled as a chronic intake, because there's three intakes in a row that are all positive and slightly increasing over time. That seems to be the most obvious way to model it.

If you have slightly increasing results over time, why would you model it as three separate acute intakes?

MR. FARVER: They were over a period of years.

MS. BRACKETT: Yes, but they were the only ones.

MR. SIEBERT: There were only two samples. Sorry, Liz, I just had to throw in. There's two samples, one in 55 and one in 56.

MS. BRACKETT: I thought there were three samples.

MR. SIEBERT: With -- with no necessary indication as to why they were taken, and Liz is correct, they were increasing, and that -- in the original response to this, the dose reconstructor did say that's why they selected chronic, because they were increasing over time.

MS. BRACKETT: And there is specific items in OTIB-60 that tells you to do that. It says under general philosophy --

well, in Section 5.3.2, it says fit all of the results simultaneously. A mix of chronic and acute intakes can be applied. A single chronic intake can also be fit when there are only intermittent positive results that are relatively small. This could be representative of a low level chronic intake.

So I mean, the general guidance to the dose reconstructors is to assume chronic; and in fact, I'm going to have to find a reference, but there is -- there have been papers recently published that said, if you don't know when the intake date is, it is more accurate to assume a chronic exposure during the time frame than to assume the midpoint. The British have published papers on that and have been doing some analysis of that.

And I would also mention that we can't possibly model every possible intake scenario. I mean, if we did that, we would be here till the end of time trying to look at everybody's results and come up with what

could possibly be the largest possible intake scenario for each individual.

CHAIRMAN GRIFFON: Well let me slip back on this one, was it a best estimate case? I don't have that.

MR. SIEBERT: No, it was about 35 percent, if I remember --

CHAIRMAN GRIFFON: Okay.

MR. SIEBERT: -- with some overestimates in them.

CHAIRMAN GRIFFON: All right, so it was not -- I mean, it doesn't seem as if, you know, there could be a debate maybe on whether --

MS. BRACKETT: Sure, for a best estimate you --

CHAIRMAN GRIFFON: Yes.

MS. BRACKETT: -- tone it down, but given, you know, the methods that we do, we couldn't get all the cases done if we had to --

CHAIRMAN GRIFFON: Oh, no, no, no.

I'm just saying it's not between 45 and 50, so it's not as if this was a, you know -- would this likely affect the outcome. That's the question I guess -- you know if --

MEMBER MUNN: Liz certainly gives us the basis for appropriate approach to this particular case. It sounds as though it was followed.

MR. FARVER: We're going to have to go and see what the difference in the doses would be.

CHAIRMAN GRIFFON: Right, right, right.

MEMBER MUNN: Does SC&A accept that?

CHAIRMAN GRIFFON: Well, he's looking at something right now. I mean I guess, you know, I would say this can be moved to procedures work group under TIB-60 unless it's an issue of the doses were very different and could, you know, potentially affect a 35 percent going up to, you know, near 50, which

I would think is unlikely, but you know.

MEMBER MUNN: So you're thinking this is an appropriate discussion for 60?

CHAIRMAN GRIFFON: Well, just that 60 is being reviewed right now under --

MR. SIEBERT: I believe within the last response we gave back in March, I believe it was, we did state, even if the acute intake scenario had been assigned using Type F, the overall POC would have increased from 35 and a half to 37.8 percent --

CHAIRMAN GRIFFON: Okay. Okay, so I think on that basis --

MR. FARVER: -- for internal, which still would not be enough.

CHAIRMAN GRIFFON: I think on that basis we have to -- yes, we have to --

MR. FARVER: I think we agreed it was a judgment call --

CHAIRMAN GRIFFON: Right.

MR. FARVER: -- and during the discussion we brought up, well how do you

determine --

DR. MAURO: Yes.

MR. FARVER: -- guides out there to say you need to look at this or what to do.

I mean, that was --

CHAIRMAN GRIFFON: Yes.

DR. MAURO: It sounds like in the context of this case, this judgment was reasonable, and another judgment could have been made, but it wouldn't change anything.

CHAIRMAN GRIFFON: But I would say, and I'm sure what finding remains open in TIB-60, but I guess the question to me now is to look back at TIB-60 and say, is there enough specificity for this -- because I heard some varying opinions on that as I'm listening.

MR. FARVER: Well, that might be one of the items that needs to close down. I'm not sure I remember all the findings from OTIB-60, but that might be one of them.

MS. BRACKETT: I don't think that was --

MR. FARVER: Was it --

MS. BRACKETT: -- because I know it does not contain enough detail, and based on experience that was gained since it was first written, I am trying to add, you know, more -- more specific detail into it where possible.

MR. FARVER: Well, that was the response to the initial finding, and that's -- you're going to add detail, and I think we accepted that.

MS. BRACKETT: Right.

MR. SIEBERT: So it's in abeyance.

CHAIRMAN GRIFFON: Let me ask -- let me ask the other question looming from our earlier discussion. Is there a Savannah River set of guidance or notes right now, or have those been --

MR. SIEBERT: They would not have handled this situation.

CHAIRMAN GRIFFON: They wouldn't have handled this situation?

MR. SIEBERT: At that time, we

probably -- and I'd have to go from memory -- we probably had something in there that was very much like what went into OTIB-60 --

CHAIRMAN GRIFFON: Okay.

MR. SIEBERT: -- because that has been the prevailing --

CHAIRMAN GRIFFON: It wasn't any more specific, or -- okay.

MR. SIEBERT: Right.

MEMBER CLAWSON: And I'd just like to say one thing. I heard that they were saying the security cards would not be a part of it. In our situations out there when we have an event or something goes awry, a lot of times security has to come in and cover that, and they've actually come up with a lot of higher doses than what the operators actually got into.

There's a protective process in there, a lot of these different ones, they basically have to secure up everything, and we come to find out later that we were actually

putting them in more harm's way than the actual operators, because the operators were prepared for it. The guards weren't.

MR. HINNEFELD: Yes, that's a good point.

MEMBER MUNN: Well but Brad, wouldn't that explain the reason for the two specific pieces of data that have been collected on this particular --

MEMBER CLAWSON: It very possibly could. He could have been involved in something, especially in the earlier years in something like that. When something went awry, the guards would actually come in and protect this while they reconstructed a -- well, what we call a recovery action or so forth like this, and this very possibly could have --

MEMBER MUNN: Yes, yes -- well, we're all familiar with that. We know how that works, but this -- when those things did occur, it was generally -- the administrative

action was to gather as much data on the exposed individual as possible, and I thought that's probably what was occurring here with these too high reports that we have.

MEMBER CLAWSON: It very possibly could -- it's just under --

CHAIRMAN GRIFFON: Well I think the generic issue we're going to send your way, Wanda -- although I'm on that subcommittee, too, so I'm not getting out of anything, but I think I've closed it out on this one. I mean, I think Scott's answer that they did examine the acute scenario in this case anyway, and it still doesn't affect the PRC, but you know, OTIB-60 is still open and apparently still being modified, so either the current review of OTIB-60 on the procedures work group or the review of the modification of OTIB-60, I think that's where it'll be picked up.

MEMBER MUNN: Okay.

CHAIRMAN GRIFFON: All right? Just wanted to give you some work before you --

MEMBER MUNN: Thank you so much.

CHAIRMAN GRIFFON: -- before you get on the airplane.

MEMBER MUNN: I do appreciate that. Every -- every little bit helps.

CHAIRMAN GRIFFON: Anything I can do to help, Wanda. You know me.

MEMBER MUNN: We know, we know.

CHAIRMAN GRIFFON: All right, moving on, we're going to try to get through set six before lunch here.

So that one's closed, and it's a ways down here -- 119, is that where you're at?

MR. FARVER: 118.1.

CHAIRMAN GRIFFON: 118.1, yes.

MR. HINNEFELD: That's where I took the next note.

CHAIRMAN GRIFFON: Yes, 118.1 is the next one -- is continuing to look into this, and there's a note on 12/12 that says what this is.

MR. HINNEFELD: I think it's --

CHAIRMAN GRIFFON: -- hear the response.

MR. HINNEFELD: Okay, now that -- that response is in what I submitted last night. It quotes from a couple of technical documents, one from Idaho and one from Hanford. The Idaho badge at the time -- let's see, that was implemented in 1958, was apparently tailored after the Hanford multi element dosimeter, and had both the sensitive and insensitive film, and gives a pretty wide range, utilization range, for the combined film.

So I guess since -- you know, this was just provided --

CHAIRMAN GRIFFON: Yes.

MR. HINNEFELD: -- and it would have to be, I guess, you know, it would have to be looked at.

I would think those documents would be available on our site research data base,

which you guys --

CHAIRMAN GRIFFON: I already -- I already put the action for SC&A to review these, because I think we got them late.

MR. FARVER: You did send them?

MR. HINNEFELD: They're in -- I didn't send the documents. I sent the response. The documents -- I mean, I can get them.

CHAIRMAN GRIFFON: Are the -- does the response include the --

MR. HINNEFELD: The response includes the --

CHAIRMAN GRIFFON: The citations?

MR. HINNEFELD: -- the citations, yes. And they should be on the site research data base. Well, I guess one would probably be in the Idaho, and one would be in Hanford.

MR. SIEBERT: One specifically does have the SRBB number on it. The other one apparently doesn't, the Hanford one.

CHAIRMAN GRIFFON: Let me just find

this. Is it called the sixth --

MR. HINNEFELD: It's the sixth case. What was my email's name?

CHAIRMAN GRIFFON: December -- I'm looking for which one?

MR. HINNEFELD: It's written in the -- and the response is clipped into the matrix.

CHAIRMAN GRIFFON: You put it into the matrix, okay.

MR. HINNEFELD: And it's a matrix from -- from NIOSH, April 15th '09, is the last -- is the end of the title. Starts with --

MEMBER MUNN: It's down on page 52.

MR. HINNEFELD: It was on my email from yesterday -- last night, and it's -- it's clipped into the matrix, so --

MR. SIEBERT: It's in the NIOSH response column.

MR. HINNEFELD: Yes, and I thought I had made it a different color to make it

stand out, but apparently I failed.

MEMBER MUNN: Well it's a little different color, but --

CHAIRMAN GRIFFON: It's the April 15 -- okay, I got it. So I'm going to cut and paste that over to the one I'm working from.

MR. HINNEFELD: Okay, sure, yes.

CHAIRMAN GRIFFON: But the references are in there, and I'll put an action for SC&A to --

MR. HINNEFELD: Yes. If you have any trouble finding either one of them, just let me know, and we'll pull it out and give it to you.

CHAIRMAN GRIFFON: Give me one second, I'm going to get this together. Okay, so I got that action. I copied your response in the working matrix, and then let's look for the next item -- 118.6.

MEMBER MUNN: 118.6.

CHAIRMAN GRIFFON: Yes, this was what --

MR. HINNEFELD: That was an action from December, I think --

CHAIRMAN GRIFFON: Oh, SC&A agrees with NIOSH. No further action -- okay, I've just got to remove the highlight there, so that's done.

118.7, is this also closed? Yes. Is that it? I think that's it, yes. That's all I found. Anybody else have any others? Doug?

MEMBER MUNN: I'm sorry, did I miss what you were just saying on 18.7?

CHAIRMAN GRIFFON: 18.6 and seven, I left the highlighting on. It was closed at the March meeting. If you note down below the highlighted portion, it says that no further action --

MEMBER MUNN: Yes, right.

CHAIRMAN GRIFFON: Yes, so I just -- I didn't take the highlighting off.

MEMBER MUNN: Okay.

CHAIRMAN GRIFFON: So that's it for

the sixth matrix --

MEMBER MUNN: Great.

CHAIRMAN GRIFFON: -- yes, we only have a few hanging out there, so --

MR. HINNEFELD: It might just be that -- well, depending what do you do with OTIB-60 and that one --

CHAIRMAN GRIFFON: well that's been referred, so that's closed, yes.

MR. HINNEFELD: I think it's just the one on the -- well, I'll provide whatever I can without waiting for a meeting. I'll just go ship it to all my usual addressee list here, the subcommittee members, SC&A, and the associated feds who I'm sure have me on quick delete. Whenever they get an email from me, they just delete it automatically.

MEMBER MUNN: Okay.

CHAIRMAN GRIFFON: Wait, there is a quick delete?

MR. HINNEFELD: No, I haven't found it. If you're good, there probably is. You

can probably set your -- set your email so that it throws away every -- you know, just identify me as spam. You'll never have to read this crap again.

MEMBER MUNN: My assistant has already done that for me.

CHAIRMAN GRIFFON: All right. Well, I think rather than start into the seventh, this might be a good place to break and take our lunch break and come back at 1:00.

And Wanda, I assume you'll be on your way to the airport?

MEMBER MUNN: I will be -- hopefully have something in a suitcase by then, and yes, I'll be on the highway.

CHAIRMAN GRIFFON: All right. So Mike -- Mike, we're going to reconvene at one if you're -- hopefully you're available?

MEMBER GIBSON: Yes, I'll be available.

CHAIRMAN GRIFFON: Okay. All

right, great.

MEMBER MUNN: Thanks, folks. See you later.

(Whereupon, the above-entitled matter went off the record at 11:49 a.m. and resumed at 1:03 p.m.)

A F T E R N O O N S E S S I O N

1:03 p.m.

MR. KATZ: This is Ted Katz with the Advisory Board on Radiation and Worker Health, Subcommittee on Dose Reconstruction Review, and we're just reconvening after a break for lunch.

And I just want to check on the phone lines for board members, to start with. Who do we have? Do we have Mike?

MEMBER GIBSON: Yes, I'm here, Ted.

MR. KATZ: Good to hear you, Mike. And by any chance to we have Dr. Poston, John Poston?

Well, how about Bob Presley?

Okay, no board members I take it, then.

Do we need to check on any ORAU or SC&A attendance?

CHAIRMAN GRIFFON: No.

MR. KATZ: You're not worried about it? Okay.

CHAIRMAN GRIFFON: Ted, we've got some other people on there, too.

MR. KATZ: Yes, we do. Is there anyone on the line that wants to identify themselves?

Okay, so let's carry on.

CHAIRMAN GRIFFON: Okay, we're going to move into the seventh set, and do the same thing we did with the sixth set, hopefully as quickly.

We had some outstanding items, and hopefully, I did the same kind of thing. If everybody has the matrix, I've got the highlighted actions, so starting from the top there is one right away on Case Number -- or Finding Number 121.1. So this remains an outstanding item from NIOSH by way of the use

of TIB-70 and TIB-6000.

MR. HINNEFELD: Yes, I've -- there was --

CHAIRMAN GRIFFON: Yes, I think I have something on that.

MR. HINNEFELD: Yes, I'm having a little trouble getting my hands on my own right now.

The -- well, there are a couple of items here. I -- well I collected my notes from -- when I wrote my notes from the last meeting, I wrote notes for findings 121 and 122 -- 121.1 and 121.2 --

CHAIRMAN GRIFFON: Okay.

MR. HINNEFELD: -- and part of the comment I think also pertains to 121.3 because -- let's see, OTIB --

CHAIRMAN GRIFFON: Where is your response? Is it in this --

MR. HINNEFELD: I'm just trying to figure that out. I'm trying to figure out -- I don't know if I sent the right one.

CHAIRMAN GRIFFON: Is it in the matrix that you sent?

MR. HINNEFELD: It would have been. I tried to put them in the matrix.

CHAIRMAN GRIFFON: Yes, I don't see anything in the -- in the matrix for that one, anyway.

DR. MAURO: Conceptually, the issue has to do with an AWE facility, and it goes back to, on many occasions what we see is, for the residual period, many of the cases NIOSH would use data collected during the FUSRAP characterization program, and apply that -- those exposures and measures to residual period exposure that may have occurred a decade, two decades, sometimes three decades earlier, and now -- and basically the comment here is that -- well listen, you know, rather than do that, which is sort of questionable, you know, to use this time span -- there are now tools in place, namely OTIB-70 for a residual period of TBD-6000, both of which

address this issue in a better way, and it seems that, you know -- and that's really what the comment was.

MR. HINNEFELD: Yes, that's the nature of it, and there's a couple of tools, OTIB-70 and OTIB -- and TBD-6000. One is sort of -- I think sort of an externally related, and one's internal --

DR. MAURO: No, no. Seventy is specifically for residual --

MR. HINNEFELD: Residual, okay.

DR. MAURO: And it only applies to AWE facilities. Six thousand is not only residual but is everything.

MR. HINNEFELD: Okay, all right. So those are -- that's two of it, and then there's the third comment that the model is constructed as a -- a -- a distribution model. I mean, there's something that's chosen as the -- the mean value with a geometric standard of deviation. You know, some other value was chosen as the geometric standard of

deviation, and so -- and then the TBD says apply this to everybody. One size fits all.

And the other comment was, well, this person was in a -- what seems to be a particularly highly exposed job. Shouldn't he really get more than the full distribution, you know, toward the top end of the distribution rather than the full distribution.

So that was the nature of the comments.

Now I did get a response -- and this was a cut and paste or a save error on my part, because I did not save the response to the file I thought I was saving at -- where I intended to save it, so I probably sent you one that does not have its response.

CHAIRMAN GRIFFON: Okay, yes, I can see it in the matrix.

MR. HINNEFELD: Yes. And so we have a note, or it appears that -- well, there's a -- one reviewer, or the person who

wrote the response said that the TBD-6000 approach, were it used for -- this is for Finding 1, which is, what, re-suspension?

DR. MAURO: No, this is the --

MR. HINNEFELD: External?

DR. MAURO: I think this is --

MR. HINNEFELD: Okay. Yes, okay, for external -- that TBD-6000 would result in a lower dose. Now that's -- you know, someone apparently has looked at that, but it doesn't really walk you through the discussion or the, you know --

This is the selection I made out of TBD-6000, and this is why I reached that conclusion, so that really needs to be expanded on a little bit.

DR. MAURO: But it -- yes --

MR. HINNEFELD: And in fact, I think -- I think that's why it's not in the matrix is because when I read this, I said, that doesn't quite answer it. It needs more. You can't just say, well, TBD-6000 would be -

-

DR. MAURO: Yes, but -- we're dealing with TBD-6000.

MR. HINNEFELD: And there are options in TBD-6000.

CHAIRMAN GRIFFON: Right.

DR. MAURO: The right way to do this is you actually have the procedure in OTIB-70, and that is you say, listen, at the time, at the end of operations, we have airborne data, we have external data, which sort of sets an upper end of what it might be at the beginning of the residual period.

Then you also say, somewhere down the line, maybe 10 years, 20 years, 30 years later, you have a whole bunch of measurements taken just prior to the FUSRAP cleanup as part of the characterization program. This is the way OTIB-70 reads, and it makes sense.

So you've got an upper-end value right at the beginning of the residual period, and you've got an estimate before they did the

cleanup as part of the characterization. You've got two points. You draw a line between the two points, and that is the slope of the exposure that is indeed experienced, whether it's external or internal, by people during the residual period.

That makes sense, and I guarantee you if you applied that --

CHAIRMAN GRIFFON: Well even there there's some assumptions on the data.

DR. MAURO: Okay --

CHAIRMAN GRIFFON: Right, right. I just circled that explanation.

DR. MAURO: Yes, I'm just trying to conceptually and philosophically -- it is a sound principle upon which to base your models, your approach to the problem.

Whether your data is adequate to support that, that's a different question, but I think we have to agree that that basic approach is the one that you want to embrace across the board on a residual period, and it

makes sense.

And that's what it says --

CHAIRMAN GRIFFON: Yes.

DR. MAURO: -- in TBD -- now then -- you know, when you actually apply it on a case-by-case basis, you run into trouble sometimes, because the data aren't there to do it the way you really want to do it.

For example, when the data aren't there, you guys assume, well if we do have the data for the first point but not the end point, we assume one percent per year --

MR. HINNEFELD: Well it's faster than that.

DR. MAURO: -- or one percent per day, I'm sorry, which is -- one percent per day is not the rate at which this stuff is going away.

So there are issues on TBD-70 also. Anyway, but that's what this is all about.

CHAIRMAN GRIFFON: Well I think we have to kind of put this one on hold --

MR. HINNEFELD: Yes, and actually this is one I pulled out, and I've got the technical documents in my briefcase, thinking that I would have time to think of -- you know, take some shot at this, and I haven't.

So this is -- let's see, this is a -- well, I'm not sure if it's an OCAS or not. This needs additional work. You just can't be, you know --

CHAIRMAN GRIFFON: I think that applies for one, two and three.

MR. HINNEFELD: And I think it applies to 3-F, as well, because if I'm not mistaken looking -- you had a comment -- then you highlighted area on three, and three is -- I've got to look and see what three is real quick.

DR. MAURO: There's no doubt that, when it comes to residual period, we have a standing issue on how you deal with re-suspension inhalation.

MR. HINNEFELD: Yes.

DR. MAURO: You know, we know that ten to the minus six -- you know, that's -- time and again we run into that.

MR. HINNEFELD: I think -- I think 121.3 is -- I think that mean is during the residual period, if I'm not mistaken.

CHAIRMAN GRIFFON: I think -- I think you're right.

DR. MAURO: 123, this is the --

MR. HINNEFELD: 121.3 is inappropriate data used for modeling inhalation ingestion -- intake.

DR. MAURO: Oh, I'm looking at --

MR. HINNEFELD: Intake --

CHAIRMAN GRIFFON: Yes, I think you're right.

MR. HINNEFELD: I think -- I think it's during the residual period, so I think it's very much the same. I mean, it's the same kind of thing as one, with a different, you know, exposure about it --

CHAIRMAN GRIFFON: Yes.

DR. MAURO: Yes, different --

MR. HINNEFELD: -- if I'm not mistaken.

CHAIRMAN GRIFFON: I think you're right. I think it's correct.

So they're going to be put on hold, all three of those, I think, Stu, just --

MR. HINNEFELD: Yes.

CHAIRMAN GRIFFON: It sounds like you've looked into it, but you might have to just go back to ORAU and get a better explanation on -- than what you have right now.

MR. HINNEFELD: Yes, I have -- we have to expand on this explanation a little bit, so --

CHAIRMAN GRIFFON: Okay.

MR. HINNEFELD: Yes, in fact, if I had paid more attention to my handwritten notes on my sheet here, I would have realized that I don't have a check mark by that one, which would indicate I didn't try to fix it.

CHAIRMAN GRIFFON: All right, then I'm moving down to 122.1 as the next one.

MR. HINNEFELD: And I believe this is the same --

CHAIRMAN GRIFFON: Yes --

MR. HINNEFELD: -- 121.2, which is using the full distribution --

CHAIRMAN GRIFFON: Full distribution versus --

MR. HINNEFELD: -- for again what seems to be a likely highly-exposed person.

CHAIRMAN GRIFFON: So it's the same -- I mean you don't have a response on that one?

MR. HINNEFELD: Yes, we don't have anything on that.

CHAIRMAN GRIFFON: 122.3 --

MR. HINNEFELD: I didn't have anything -- I didn't have a note for that.

DR. MAURO: This is the rod and billet exposure.

CHAIRMAN GRIFFON: Yes.

DR. MAURO: I think this guy might have been a furnace operator.

CHAIRMAN GRIFFON: I think you're right. He had a high exposure.

DR. MAURO: And he was only working with billets.

CHAIRMAN GRIFFON: Yes, it was this question, SC&A feels that it may not be bounding for this particular worker --

DR. MAURO: No, this is a --

CHAIRMAN GRIFFON: -- because it was a high -- yes.

MR. HINNEFELD: Oh well, isn't that the same, though? I mean, 122 -- yes -- 122 --

CHAIRMAN GRIFFON: Same kind of --

MR. HINNEFELD: 122.3 is much the same as 122.1. It's the same kind of thing. This is a highly exposed person.

DR. MAURO: Yes.

MR. HINNEFELD: Aren't they -- aren't they pretty much -- I mean, it may be -

- I think it's different exposure modes, or something?

DR. MAURO: Yes. You know, if I had the full case in front of me, if I remember a case where the guy was a furnace heater -- the furnace where you heat up the billets. The billets come in, you heat them up, so that they can be rolled into rods. His full-time job was to work with billets --

MR. HINNEFELD: Right.

DR. MAURO: -- and I think that the default method here, if I remember correctly, was that there's a 50/50 between rods and billets. It turns out the exposure rate from billets is about twice as high as the exposure rates from rods, because of the size and geometry, so we felt that, as applied -- that approach -- that fundamental approach, the 50/50 -- three and a half hours each a day, is good, but not for this guy, because this guy is working entirely with billets, and as a result of that -- not only that, he may be

working with more than one billet, because right now, it's based on a single billet.

His external exposure rate could be substantially higher than -- I think we said about a factor of two higher -- or 40 percent. It's coming back, 40 percent higher, because of the kind of work he does.

And whether that's -- how important that is to the -- but if 40 percent is --

CHAIRMAN GRIFFON: It's listed in NIOSH's response, I think. It says it only shifts the POC from 28.5 to 29.3, right?

DR. MAURO: Oh, is that right? Oh, okay.

MR. HINNEFELD: I think we've seen that one earlier.

DR. MAURO: I believe that.

CHAIRMAN GRIFFON: Right, right.

DR. MAURO: Bear in mind when we --

CHAIRMAN GRIFFON: But the question could remain that -- I mean, the question could remain that -- that -- I mean, the

question could remain that, you know, for this -- for -- you know, how is that type of worker handled. I mean, in this case it didn't really affect the POC. But the general question still stands.

MR. HINNEFELD: It's a fairly specific example of --

DR. MAURO: Yes.

MR. HINNEFELD: Is a one size fits all appropriate?

DR. MAURO: Right.

CHAIRMAN GRIFFON: Right.

DR. MAURO: There are -- we've run into situations where -- in fact, it went the other way the last time. Remember when we talked about the nurse, where they were assigning a generic --

CHAIRMAN GRIFFON: Right.

DR. MAURO: -- I mean, we went the other way. We said, listen, you were giving this nurse exposure that no way that she could get. And now we have the opposite. Now this

guy is a furnace operator. He's going to be on the other side of these. For the one size fits all, it doesn't always work very well.

And I guess that's a critique that is I think a little bit more intentioned. It could be, wait a minute, this guy's a little bit different than the average guy.

I don't know if you guys want to do that, but that's how we see it.

MR. HINNEFELD: One size fits all are convenient.

DR. MAURO: Convenient, yes.

MR. SIEBERT: As simple as possible.

MR. HINNEFELD: The -- even I can understand those dose models sometimes, but the, the way it's constructed, the valid point, I think the real point here is constructed as a distribution, as if we don't know exactly, we think this is a likely median estimate, and we think this is a likely bounding estimate for people who work there,

without saying specifically, this is the most -- we're going to reconstruct the most highly exposed people, even though there could be uncertainty in that, and you could say this is what we expect, and this is what the upper limit could be of the most highly exposed people.

And just for -- so that we're -- because we're not confident of our ability really overall to sort people into high and modest, we're just going to give it to everybody, which is why we gave it to the nurse.

You know, because we're not really that confident of our ability in every case. And so -- so we've done that on a number of occasions. Now in this case we didn't -- we didn't write it that way. We said this is what we believe, you know, is the dose rate. We didn't really say that it's -- or provide any evidence that this is likely as high as even the most highly exposed person could have

been exposed to --

CHAIRMAN GRIFFON: Right, right. I think that was the question.

MR. HINNEFELD: -- which, it seems to be it.

DR. MAURO: Well in your defense, I will argue that the very assumption that a person is going to be one foot away --

CHAIRMAN GRIFFON: For all of that time.

DR. MAURO: -- in front of a billet, so in other words, you're almost, in a funny way, you're sort of caught between a rock and a hard place. In other words, you come up with a fundamental one size fits all. You say we're going to apply this to everybody, where they're standing one foot away from the billet, and they're there for seven hours a day.

Now right off the bat, that approach itself is extremely conservative, because it's unlikely anyone's going to be

doing that, but that's what you're doing, so therefore, that's a given.

Now but then you come along with a person who -- that, you know, you say well what do we do about this other guy who only works with billets, he may be working with multiple billets, and I don't know how long he stays in front of it, but is it possible that for him we've got to treat him special.

So it's -- you're in a funny spot. You know, the fundamental model you use -- there's no doubt that that's conservative, but there's also no doubt that he probably has a potential for exposure that's substantially higher than, say, most of the other workers. And most of the other workers are probably not going to get that exposure.

MR. HINNEFELD: Yes, I understand.

CHAIRMAN GRIFFON: And I think that's why it was a remaining action, because we wanted to see --

MR. HINNEFELD: Yes.

CHAIRMAN GRIFFON: -- if your approach left the dose reconstructor the flexibility to assign a higher amount for some job types or whatever.

MR. HINNEFELD: Well, I mean, right now --

CHAIRMAN GRIFFON: Right now it doesn't.

DR. MAURO: Well, in a way, you know --

CHAIRMAN GRIFFON: I guess that's why it remained, because obviously it doesn't affect this particular case very much.

MR. HINNEFELD: And the other interpretation of this is that the model is constructed, even though it wasn't constructed this way, but the way the numbers come out is an estimate of as high as anyone could have been exposed on this plant.

Now that's not the way it's written and constructed.

DR. MAURO: I think that if he

would have written it that way --

MR. HINNEFELD: If you had written it that way, and you said, because we're not confident of our ability to sort -- now some we could probably sort. But we don't necessarily feel confident of sorting all these job titles, and we may not even know job titles.

DR. MAURO: Yes.

MR. HINNEFELD: We're just going to apply this -- we think this is as high as anybody could have gotten exposed.

You know, I think that's an acceptable approach on something like this, but we didn't write the thing that way. We didn't write it. We wrote it more in lines of we're going to kind of homogenize the work experience here. We're going to include some rod exposure. We're going to include some billet exposure to sort of homogenize it, and so we didn't really try to write it for the most highly exposed.

DR. MAURO: One of the dilemmas, too, is that, you know, since we're looking at all of these different AWE sites, and what they did at Bethlehem Steel was assume the person is spending all day one foot away -- no, no, standing in front of an infinite slab of uranium, where the dose rate at one foot is two mR per hour.

So in other words, now we have a circumstance -- and I don't know what you do about this, you know, because we're talking as the years progress, and you mature, and your models develop, now you have a group of workers that worked at Bethlehem Steel as being given an external dose that is pretty high.

CHAIRMAN GRIFFON: Yes, this equity claim.

DR. MAURO: But now you have another group that's doing jobs that are, you know, but now you're getting a little more sophisticated. Well, this is really a billet

or a rod.

Well they were working with rods, also. They weren't working with big slabs of uranium. So then you say, well, what do you do now? Is it fair that they're getting this, but they're getting that? I don't know.

MR. HINNEFELD: Yes, and there is a lot of radiation monitoring data from the plants that did uranium -- or uranium metal handling that, you know, so there is this whole population of claimants out there who are -- who handled uranium metal who are monitored -- uranium metal and essentially nothing else, like Fernald I'm thinking of, and to a certain extent Y-12, but they're a little more exotic, that were monitored and handled that way.

And you've got this whole history of how high the exposures went at those sites where the metal was handled, so there's a lot of things that could kind of inform an answer here, I think. But anyway, I have nothing new

on that -- on those findings, either, but I do, starting with the next one.

CHAIRMAN GRIFFON: Yes, I think we've all agreed that it doesn't affect this particular case, but what I want to find out for the resolution is, are you going to modify your language in your, you know --

MR. HINNEFELD: I think something. I think --

CHAIRMAN GRIFFON: That's the question, and if so, how are you going to modify it?

MR. HINNEFELD: Yes, yes.

CHAIRMAN GRIFFON: All right. So moving on. So 122.7 --

MR. HINNEFELD: That has new information, thank goodness.

CHAIRMAN GRIFFON: We've got one. Is that in the matrix?

MR. HINNEFELD: It's in the matrix, and this one I did manage to change the color on this one, too. This one is sort of blue.

CHAIRMAN GRIFFON: Okay.

MR. HINNEFELD: I guess it's blue.

CHAIRMAN GRIFFON: And it's in your response column, right?

MR. HINNEFELD: It's in the response column, yes.

MR. FARVER: We're going to have to look at this.

DR. MAURO: Could you just give us a quick --

MR. HINNEFELD: I'm not sure I understand it. I may have just clipped it off and put it in there.

DR. MAURO: What is the issue here? Which side is this?

MR. HINNEFELD: It relates to some HASL published data, and again, to really understand the whole conversation, you've got to look at the finding in the original review.

DR. MAURO: Yes, is this an AWE?

MR. HINNEFELD: This is still 122, so --

MR. FARVER: Simon Saw.

DR. MAURO: We're still on Simon Saw. I know Simon Saw well.

MR. HINNEFELD: The reviewer questions whether the assumptions used for calculating thorium inhalation -- well okay, you can read that.

And I believe -- I don't know, but I think probably what happened was there was some -- maybe there was a certain small set of samples of thorium air monitoring, and then there was a broader -- maybe more air sampling during other -- during uranium operations. Is that what went on?

MR. FARVER: Thorium inhalation during the rolling operation?

MR. HINNEFELD: No, maybe not. Maybe it was just done -- maybe it was based on --

CHAIRMAN GRIFFON: So it was a one-day study. Is that what --

MR. HINNEFELD: Well, that's not

true. I don't know for sure.

DR. MAURO: Well, the -- yes --

MR. SIEBERT: Actually, I think it is.

DR. MAURO: There is only one day. And that was one of my comments on, when we get to Simon Saw, is to see the exposure matrix.

CHAIRMAN GRIFFON: One day.

MR. HINNEFELD: Okay, yes. Apparently, there was one day of thorium air sampling, and it was assumed to be representative of all the 36 rolling days.

DR. MAURO: That's it.

CHAIRMAN GRIFFON: Okay. So -- and we have as Simon's 13, and that reference is on the O drive. Do you have that right there?

MR. HINNEFELD: It should be on the O drive. It should be.

CHAIRMAN GRIFFON: I guess that would be the only thing. I think you need to look at this, but John, do you have that

reference, do you know?

DR. MAURO: I'm sorry, I was looking at -- which one is that?

MR. HINNEFELD: It's the HASL data, Simon's 13.

CHAIRMAN GRIFFON: Do you have that reference that they note in their response?

DR. MAURO: I don't know.

CHAIRMAN GRIFFON: Do you know how the --

DR. MAURO: I don't know.

CHAIRMAN GRIFFON: You refer to it as Simon's 13. If we don't, Stu, you'll make it available in the -- okay.

So I think I'm going to put that NIOSH provided a response and SC&A needs to look at the response along with the HASL report, right?

MR. FARVER: Yes.

CHAIRMAN GRIFFON: Sorry for the delay. I just wanted to -- I'll lose track. This seems to be working for me.

All right, 125.1, I think he did provide something for Case 125. Anyway, I think I saw it.

MR. HINNEFELD: Yes, 125.1 is in the response under the response column. It's also in blue.

CHAIRMAN GRIFFON: Okay.

MR. FARVER: Here. Now, I read that, so it wasn't in the --

MR. HINNEFELD: The finding was correct. The finding was correct. The 1984 dose was not; it was inadvertently omitted from the original case.

MR. FARVER: Okay.

CHAIRMAN GRIFFON: So NIOSH is --

MR. HINNEFELD: And so we've apparently gone through and added all the doses from the comments, you know, the various comments, and rerun the POC, and it changed very marginally, 34 to 35.

CHAIRMAN GRIFFON: Just give me a few seconds to update that.

And you provided the supporting files?

MR. HINNEFELD: I think I did. I think they were attached --

MR. SIEBERT: Yes, that -- it was the honking zip file that came across last night. I believe that's a technical term.

MR. HINNEFELD: The big honking --

MR. SIEBERT: Yes, the big honking.

CHAIRMAN GRIFFON: But I mean, I'm going to say no further action on this, but I'm assuming that, Doug, you'll take a glance at those files.

MR. FARVER: Yes, I put down the note to review it, but I don't think there's going to be any action.

CHAIRMAN GRIFFON: I don't think it's -- based on your POC calcs, I don't think --

MR. FARVER: No.

CHAIRMAN GRIFFON: If you can take it upon yourself to catch that, or to review

it. I'll put it as closed, but since you have provided the attachments, we should look at them, right?

MR. HINNEFELD: They did all the work.

MR. SIEBERT: No, just ignore that one. It makes my job easier later on. I can just throw anything in there.

CHAIRMAN GRIFFON: All right, definitely review it now.

All right, so that one's closed unless we find something strange, which is doubtful.

All right. So 125.4 then, is this -- it's not related, is it?

MR. HINNEFELD: Same claim, different issue. It relates to positive cesium, whole body counts, correct?

CHAIRMAN GRIFFON: Yes.

MR. HINNEFELD: And -- I may have to have Scott help me out here. It would appear that these are nominally --

CHAIRMAN GRIFFON: First of all, you didn't provide anything in the matrix, did you?

MR. HINNEFELD: Yes, Matrix 125.4, it's in there.

CHAIRMAN GRIFFON: Okay.

MR. HINNEFELD: The positive results are I guess, what, nominally higher than background, or very slightly higher than the NCRP published --

MR. SIEBERT: Yes, the first one is -- yes, rather than the -- is slightly higher than the average NCRP.

MR. HINNEFELD: The population average that NCRP would say that a person had from fallout --

MR. SIEBERT: Right.

MR. HINNEFELD: -- essentially. Okay, from testing fallout. And so the actual -- if there's an actual intake there on top of the fallout cesium, it's -- it's small enough that the doses are a lot less than a millirem

a year, or something.

MR. SIEBERT: Yes, I mean we overestimated it. When we re-ran this in the big honking file, we actually overestimated using the highest cesium result that we had for the whole employment period, and it was 30 millirem that we overestimated it.

MR. HINNEFELD: Okay, did you use that highest result as the net result?

MR. SIEBERT: Yes, without any stripping --

MR. HINNEFELD: Without any stripping of any -- of what might be there from background?

MR. SIEBERT: Correct.

MR. HINNEFELD: Okay. So I guess the reason why these doses weren't included, you know -- I mean, the company even says they're small doses. I think the comments said that. But the reason they weren't included was that I guess they were judged to be essentially no different than what

atmospheric testing background would have led those people to have.

MR. SIEBERT: And the DR report should have probably said that?

MR. HINNEFELD: Yes, yes.

MR. FARVER: One point is that there is a certain table that you go by of cesium values, and if it's below, you don't consider them, and if it's above, the TBD says to treat that as an occupational intake.

And there were values that were above --

MR. SIEBERT: Right.

MR. FARVER: -- that were not calculated --

MR. HINNEFELD: Yes.

MR. FARVER: -- so regardless of what the dose is, it was just not handled properly.

MR. HINNEFELD: Yes. Well, if it's less than one millirem we don't -- we --

CHAIRMAN GRIFFON: You're saying

the difference between --

MR. SIEBERT: It could be. Yes, I believe the actual -- and then Doug's right, I think the total dose was three millirem.

MR. HINNEFELD: Okay, all right. Okay, it probably should have been in there, then.

MR. SIEBERT: It probably should have been in there.

MR. HINNEFELD: Okay.

CHAIRMAN GRIFFON: Yes, but we all agree it was no effect on the --

MEMBER CLAWSON: And Stu, help me with this, because I guess I'm -- you know, as we go through these dose reconstructions, and we find issues like this where they weren't really handled correctly, or not, or whatever, we can change this one, but what are we doing in the process to make sure that it doesn't happen on other --

You know, this is really why we're doing this sampling and so forth, because so

many times I've seen that we've come up with stuff, but how do we, you know, how do we follow up to make sure that this is being done on other ones?

MR. HINNEFELD: Well, that's a good question.

MEMBER CLAWSON: This has always bothered me on this, because we find, you know, on some of them we can cover them with OTIB-60, I believe it is, and so forth, but when we -- when we see an issue like this, I'm just wondering how we get it so that we're not making this mistake.

MR. HINNEFELD: Well, I don't know. And one of the things that makes this difficult is that, if we're talking about a category of a mistake like this one, which was a three millirem omission, or even a 30 millirem omission, we're talking about things that really are not going to be consequential in the outcome.

And so to do something --

CHAIRMAN GRIFFON: That might result in a PER for that, right.

MR. HINNEFELD: Yes, yes. So to do something for this, you know, for this error that was seen in this dose reconstruction, you have to build some sort of system that's going to take work by different people, a variety of people. You know, you've got the --

It's been captured. You know, by identifying it, it's done, but then you have to essentially turn it -- well, why would this have happened, and how can we prevent it. There's work to decide how -- how that would happen. You know, it has to do that.

And then, from the time you take the corrective action, presumably that -- that corrective action will impose additional work on additional people to do that.

Now without really saying as much just, you know, right out, although I have said a number of times to make the basis of this, we have always aspired to concentrate on

the correct outcome -- you know, the probability outcome.

That's -- and so from our standpoint -- from our standpoint as the OCAS reviewers who approve a dose reconstruction, we have not made it a practice to correct, or to send back for a correction, an omission of a few millirem, or the inclusion of a few millirem that may be more than it should.

So when there's a -- when there's a something -- you know, even if we see it, we say, even if we see that and comment and send it back, that puts, A, delays the answer for this dose reconstruction, and throws this dose reconstruction back through this whole cycle for this change that makes very little difference, and quite likely is within the uncertainty of the total -- the final number, anyway.

So I guess that's kind of where we're coming from is we have not really embarked on a program of trying to eliminate

an error that represents essentially a small omission like this, or a small overestimate, if it were an error in the other way. We have not really made that a part of our mission.

In our -- you know, in our review, just because of our -- you know, is the effort that that requires, is that worth -- you know, is it worth the outcome? Is the change, the improvement going to be worth that?

MEMBER CLAWSON: Well, and I understand that. I guess I kind of looked at this as another standpoint. But with this one, it may not. What about the ones that maybe this change is actually -- would make the difference. I guess what I'm looking at -- you know, I guess part of my issue and part of my feeling is that the reason that we're going through these is to also make sure that it's being done properly, so forth, and if we are seeing errors, how do we correct them so that it's the best quality that we can.

Now this one may have been a

smaller dose or so forth like that, but -- and it wouldn't have made any difference in the compensation of this one, but what about the ones that the same thing could have possibly happened that it would have?

MR. HINNEFELD: Well, for a case where there's close to 50 percent, those reviews are done far more carefully, and in those instances if you're at 49 percent and you see a relatively small error, you want to make sure you correct it.

MEMBER CLAWSON: Right. Well, the thing is we're not reviewing, you know, all of them. That -- that was my point.

CHAIRMAN GRIFFON: I guess that's what Brad is getting at --

MR. HINNEFELD: But we do.

CHAIRMAN GRIFFON: That system's in place, right, and you have some --

MR. HINNEFELD: When our guys look at it -- you know, first of all, everybody hates to pick one out at 49 percent. When you

get one of your reviews at 49 percent, you say, oh, man, this one is going to take me forever, you know.

CHAIRMAN GRIFFON: And rightly so. I mean, that's the ones --

MR. HINNEFELD: Yes. And so those are the ones where you really worry about things like this.

CHAIRMAN GRIFFON: Yes.

MR. HINNEFELD: If you've got one that's at 30 percent and the majority -- now you probably don't even add up every number --

CHAIRMAN GRIFFON: Right.

MR. HINNEFELD: -- you know, to make sure that --

CHAIRMAN GRIFFON: But there's also other -- other -- I mean, part of the reason we built this review system this way -- we're only reviewing a sampling and part of -- I'm not sure people pay attention to this as much, but I think we have as we've gone on, is this notion of the case finding versus the broad

finding, and I've sort of ended up being the one characterizing those, but we always discuss them, and I think we've had a number of those like the dose conversion factors and things like that --

MR. HINNEFELD: Yes, they've been broad findings.

CHAIRMAN GRIFFON: Yes, they end up being broadly applied, and then you end up -- you know, they may result in a PER, so there's a number of mechanisms that might kick in --

MR. HINNEFELD: Yes.

CHAIRMAN GRIFFON: -- you know.

DR. MAURO: I think that there is a way to deal with this problem. This is a good example.

Here you are, you have a dose reconstructor going through a process. He knows that in the guidelines if you're above one picocurie, whatever the cesium number is, if you see it more than that that means it's above what we sort of agreed it might be, due

to occupational, as opposed to fallout.

But at the same time you say, I know this is not going to change anything. I mean, I'd hate to take that away from this guy, so all he's got to do is say -- say that. Say, listen, I realize this is above it, but I'm not going to go through the process of going through all the calculations because -- so I'm just going to disregard it.

You've done it in other places where you've said that, you know -- I've seen it. For example, very often you would just disregard submersion of -- and uranium airborne for particulate for a guy who was an AWE worker. Why? Because you know that that dose contribution is going to be very, very small, maybe above one milligram a year. I understand it was below one milligram a year, and that's the end of it.

But even if it's above and you know where this guy's coming out, it would be -- I'd hate to force someone to do a silly

calculation when it doesn't have to be done. But I think at the same time to go back to transparency --

CHAIRMAN GRIFFON: Well, let me turn that question around --

DR. MAURO: Yes.

CHAIRMAN GRIFFON: -- to your own procedures. Of course, you do -- I mean, is it prescriptive to say that anything over millirem should be included?

MR. HINNEFELD: What is the current --

CHAIRMAN GRIFFON: I don't know.

MR. SIEBERT: I don't recall it specifically saying a one millirem --

DR. MAURO: Unless -- unless you walk away from it.

CHAIRMAN GRIFFON: I know. I've heard that discussion, but I don't know where it's documented.

MR. SIEBERT: It's something we've talked about numerous times, and they think

it's understood because IREP only goes out to one millirem.

DR. MAURO: So you --

CHAIRMAN GRIFFON: Right, right, right.

MR. FARVER: But there's, you know, a couple of issues with that. Number one, you're not going to know it's one millirem unless you're going to do the calculation, even if it's just some bounding thing, okay, you're not going to know that.

The second issue, the DR report said that during this time period, they had three whole body counts, and there were no positive samples. All three were positive: potassium, sodium, and zinc.

So, it's incorrect in the DR report --

CHAIRMAN GRIFFON: Yes.

MR. FARVER: The next issue is -- your peer review check list specifically asks all positive bioassay samples considered --

yes, no, or not applicable. It should have been caught there.

A lot of times you have an Excel file that's put out what's called prep -- where it has all the external and internal data in there, and sometimes it's flagged if it's above MDA or body count, or lung count. I've seen that before.

You know, they'll have the result, plus they'll have the MDAs along side of it, and it's very easy to tell if something's exceeding the MDA, whether it's a positive count or not.

So there are some ways to catch it. It's just you get caught. It is not just that it's less than a millirem, it's that the DR is incorrect and the peer review should at least have a note somewhere -- and it may -- saying that, you know, no, they weren't all considered, but down in the comments you could put: but it didn't matter. But I don't know.

MR. KATZ: Just from John Demming's

perspective, I mean the question you ask yourself is, is this a systems problem or is this sort of a random number of errors, and if it's a random number of errors that have resulted in the situation, you generally don't go in and monkey with the machinery.

But if it's a systems problem, that's when you would make a change. And so, I mean, I think that's the way you need to think about these, isn't it. Do we have a systems problem, or is it just that it's a bad --

CHAIRMAN GRIFFON: One DR.

MR. KATZ: -- or a bunch of errors came together and produced this -- individual errors.

MEMBER CLAWSON: Well, and I understand what you're saying, Ted, but we're sampling basically what -- one percent?

MR. KATZ: Right.

CHAIRMAN GRIFFON: Well, two and a half eventually, is what we're shooting for.

MR. FARVER: This one was kind of interesting to me because there was several different errors in it and stuff like that.

I've always looked at this as if we would come back or somebody would come back and look at this without all of this matrix or anything else like that, would they be able to figure how and what was done, and stuff like that. And I don't see that level of detail, I guess, coming back into it, because so many times in our dose reconstruction reviews and so forth we find small errors, and I can understand that, and a lot of it has been -- it wouldn't have made any difference.

Just somehow I guess -- maybe I was looking at, and I know it's probably not a procedure to do it or whatever -- just so that people knew that we did this when we change the POC because of this, or something like that.

I'm just looking at this also from a historical -- try to come back and look at

this.

CHAIRMAN GRIFFON: Yes, and I agree with Doug that, I think, the bigger story here in this case is there's other things in it. If we start to see a trend in those, that's a problem, you know. That's what we --

MR. FARVER: Well, I've got to tell you what I just heard.

CHAIRMAN GRIFFON: I mean, if you know that it's not a big deal that it was left out, but the fact that it was missed on peer review -- yes.

DR. MAURO: I thought it was just maybe something that said I'm not going to bother you with this, but, no -- there's --

CHAIRMAN GRIFFON: Right. Yes, that's right, that brought us back to the meat of the --

DR. MAURO: Thanks.

CHAIRMAN GRIFFON: That's sometimes what the problem is from working with the matrices, because you don't remember exactly -

-

MR. FARVER: Well, that's why I try to pull up the cases, because I don't remember them.

CHAIRMAN GRIFFON: Nonetheless, I think NIOSH is in agreement in this case, so that it probably should have been assigned, right, and that would be the end --

MR. HINNEFELD: Yes, yes.

DR. MAURO: I hate to do this, but I think that Ted hit the nail on the head though. Is there anything about this case that would be indicative in the system file? That's really what we're asking.

CHAIRMAN GRIFFON: Well, you can't find out from one case.

DR. MAURO: You can't find out from one case --

CHAIRMAN GRIFFON: That's what I'm saying.

DR. MAURO: -- but there was --

CHAIRMAN GRIFFON: It doesn't mean

we're not going to try.

DR. MAURO: But through the system it was self-evident, at least to you, that, listen, they have these positive hits of three radionuclides, and every step in the process --

CHAIRMAN GRIFFON: Right.

DR. MAURO: -- denied that that occurred. It said, no, it's okay. In other words, why would -- how could something like that happen? I guess, why did it come to you for you to pick it up?

MEMBER CLAWSON: And looking at this down from another standpoint, if we do have a lack in the quality assurance or whatever or there's been a glitch or something like this, this is the opportunity to be able to go back and say to the people that are doing this, these are the things that have been seen.

We need to focus more in on this. If they need to change a process or a

procedure or whatever else, then that's different. Or what -- we've got to look at the quality assurance.

DR. MAURO: I would have taken it a step further. Even though we're operating as an independent auditing TBD work group, what I'm hearing, if I was sitting outside, I would say I want to know why that happened, and I would -- and I would have an action item that would go back and see where in the process did it break down that we didn't catch it, and why did that happen. Is there a systematic problem or just something that, you know, I don't know -- or was done on purpose. Or was a judgment made, no, this is not going to change anything and I'm going to let it go.

Then at least we'd know that it was done consciously and deliberately, and there's reasons for it, as opposed to no one was watching the store.

MEMBER CLAWSON: Right, because we've -- and I hear so many times that our

quality assurance on this -- we have this check, this check, this check, but now all of a sudden we're pulling one of these up.

And granted, Stu, I'm not criticizing or anything else like that because I think you do a marvelous job, but the thing is I see a glitch here that we may be -- may want to review, just to call a process of this, to be able to -- to see maybe where we stubbed our toe or whatever of how did this happen, and do we have something to stop it from happening, because that's been my whole question is -- as we find these small ones -- is there a bigger issue that's lurking out there, and that's --

CHAIRMAN GRIFFON: Well, yes. I guess that's my -- I don't disagree with what you said, John. The question I have is, well, just to step that through a little bit. I mean, is it a -- is that -- you know, to ask NIOSH to look back at that, I'm imagining that if you went to the peer reviewer they're going

to say, oh yes, I looked at it, but I considered it a minuscule difference.

I can give you the answers now, if you want them, you know, so where are we going to learn that exercise? I'm not sure we would gain a lot from that exercise.

On the other hand, in my matrix I think I ranked this as a -- one of these low-high items, you know, low case relevance but high --

DR. MAURO: Yes.

CHAIRMAN GRIFFON: -- high overall relevance, and that should get the attention of our subcommittee and the whole board, and then if we start to have a lot of these findings related to quality or questions about quality or peer review of cases, then that's what Ted was getting into. Then we sort of see -- looking for these trends, you know?

I don't know that we -- we start chasing down for one -- I don't know. I don't know if we start chasing it down for one case.

MR. HINNEFELD: Well, realize what you're doing here. You're defining the acceptable quality for dose reconstruction, because you're saying that these errors essentially are significant enough that -- not that the dose reconstruction is unacceptable, but we expect the program not to make these errors.

CHAIRMAN GRIFFON: Right, right, right.

MR. HINNEFELD: I don't know if we ever had that objective, to try to avoid an error of a few millirems. I don't know that we've ever had that as a program objective, to say that --

CHAIRMAN GRIFFON: But that's not the error --

DR. MAURO: It's procedure. There's a procedure. Yes, there's a procedure.

CHAIRMAN GRIFFON: It's the error of -- these other errors, you know, that I

think are more concerning to me anyway, to Doug --

MR. SIEBERT: Knowing this case and like you said, going back it's hard to reconstruct what somebody was thinking --

CHAIRMAN GRIFFON: Right.

MR. SIEBERT: But knowing the case and knowing who did it, my guess is it probably was considered. Just like we were saying, it's barely over the NCRP value. It's going to give very little dose. He forgot to write it in the dose reconstruction and considered that and probably was -- he didn't change the template language to say there were no positives. That's my initial guess.

MR. FARVER: But whoever reviewed it made the mistake -- the same mistake.

CHAIRMAN GRIFFON: Yes, same mistake, right.

MR. FARVER: And they also did the same thing for the next finding, 125.5, where it was the wrong absorption type.

MR. SIEBERT: In the text?

MR. FARVER: In the text, which also should have been caught according to the --

CHAIRMAN GRIFFON: Yes, so it looks like a case of -- maybe a little bit -- I mean, I can imagine that you get -- you know, that's the question -- is there a trend here, or is it just an isolated incident where you saw a low POC, you saw a fairly straightforward -- you know, and the peer reviewer was a little lax maybe in this case. Or is that one or is it a trend? I think that's what we want to look out for, I don't know.

MR. KATZ: I don't know that's at -- on this one case you can't say this is a high impact or anything like that, potential impact. I think you just want to track and see, is there more evidence of this kind, at this point?

CHAIRMAN GRIFFON: No, when it's --

when I've given a high ranking it's because this -- the nature of the finding could have effects on more than this case -- you know, broader impact.

MR. KATZ: The finding being?

CHAIRMAN GRIFFON: The finding related to quality, right. So --

But anyway that's where I -- I would not -- I don't think I'm -- I'm not leaning toward having a NIOSH action to go back and investigate this case to see why this happened. I'm more interested as we go forward, do we see more of these, you know?

At least that's my feeling right now.

MEMBER CLAWSON: Yes, that's -- and I guess I'd even go a little bit step further. I guess that in the processes that I'm used to, when we kind of have an audit like this -- and they may not be significant issues or anything else like that -- but it's always portrayed back to us: these are some small

things we saw. They're not -- I guess, what is the process back to you guys? I just want to make sure, you know, that it is addressed, that they may be minor items, and stuff like that, but we are -- we are seeing these things and maybe be able to say, you know, we need to look at maybe our quality assurance and make sure that we try to catch these things.

I guess I was looking kind of also too of the feedback to make sure --

CHAIRMAN GRIFFON: And that's -- we have the opportunity to convey that to NIOSH in our recommendations or in our reports to the Secretary. You know, if we start to see those kinds of trends I think we -- we write that sort of thing out and say, you know --

DR. MAURO: It's just a matter of --

CHAIRMAN GRIFFON: I mean, my concern about having an action for this particular case would be that, you know, basically what Scott said. I mean, it's going

to be people trying to remember what they did and likely to say, I think this is probably what happened, you know.

And how useful is that going to be, you know.

DR. MAURO: I think that NIOSH has an obligation. When a judgment is made and it should be given to the team to make a decision -- a judgment. In this particular case, I'm not going to follow the procedure because it doesn't make sense to follow because I know it's not --

CHAIRMAN GRIFFON: But that should be documented.

DR. MAURO: And that should be documented. That's it.

But right now there is no way for us to know whether that was what was done, or there's a breakdown of QA. We just don't know.

CHAIRMAN GRIFFON: Yes. But I agree with Doug where, you know, your peer

reviewer came in, you should have at least checked it off and said, you know, it looks like this will be a low dose. Is this why you didn't include it?

DR. MAURO: Yes.

CHAIRMAN GRIFFON: And then it would have closed the circle completely, you know? So that's the question.

MEMBER CLAWSON: This comes back to --

CHAIRMAN GRIFFON: I think we've beat this issue around enough, yes.

MEMBER CLAWSON: But this also comes back to your earlier comment earlier today of kind of keeping track of how they -- how they did with those process of -- you know, the process of --

CHAIRMAN GRIFFON: Right, an unambiguous -- yes, yes.

So -- and, Doug, I guess we've got one more of these. I didn't realize that -- something similar to this, but for now I

included that NIOSH is in agreement, but I don't have any further action on this particular case.

But like I said, it doesn't mean that it's lost to our overall assessment. I mean, we understand that the issue's out there. That's my feeling. I'm not at this point ready to make an action out of, you know, going back to --

MEMBER CLAWSON: Well, and I wouldn't know what the action would be.

CHAIRMAN GRIFFON: That's what I mean.

DR. MAURO: Yes.

CHAIRMAN GRIFFON: That's what I mean. I'm not sure to what end, you know -- or John was bringing that up. That's why I said, you know, to have NIOSH go back and investigate this. I don't think it's fruitful at this point.

All right, I think we have that issue.

MR. FARVER: And if you're the employee and you get this report you're going to say, my gosh, I know I had positive bioassays --

CHAIRMAN GRIFFON: Yes.

MR. FARVER: You know, it's just not good all the way around.

CHAIRMAN GRIFFON: Well, I agree, I agree. So we got the point.

Okay, let's move on to 125.5, especially if it's there -- the similar thing --

MR. FARVER: Well, that's been closed.

MR. HINNEFELD: Well, that was supposed to be closed.

CHAIRMAN GRIFFON: It's been closed.

MR. FARVER: It was.

MR. HINNEFELD: It was the same thing.

MR. FARVER: Same thing.

CHAIRMAN GRIFFON: Okay. It was a quality product, so you already captured that in Resolution 2. All right.

And I am down to 125.9.

MR. FARVER: 125.6.

DR. MAURO: Yes, what happened to six?

MR. HINNEFELD: I had it as point six.

CHAIRMAN GRIFFON: Sorry.

MR. FARVER: Stu added some there.

CHAIRMAN GRIFFON: Okay. Okay, I just -- I didn't have it highlighted, that's why, okay.

The remaining question is documenting what approach was used, I guess.

MR. HINNEFELD: Yes.

CHAIRMAN GRIFFON: And then I say no further action.

MR. HINNEFELD: For 125.6, the note I took was when there is information -- like in this case there was -- a TBD gave you a

certain year range for a particular practice, and it was subsequently determined that that range should have included one more year.

So prior to -- so my note was prior to revision of the TBD, how is that information captured and shared with dose reconstructors, and that's what our response speaks to.

MR. FARVER: Right. This is one of these cases where it wasn't -- the information was not in the document that was referenced in the DR.

MR. HINNEFELD: Yes.

MR. FARVER: It was an in-between TBD type issue, so when we go back and look at the next rev of the TBD, yes, they followed that.

CHAIRMAN GRIFFON: I see.

MR. FARVER: I guess this goes back to your -- your DR guidance issues.

CHAIRMAN GRIFFON: Yes. So do we have a bottom line on this one, then?

MR. FARVER: I mean, it is what they said. It was in the next rev of the TBD. It does follow the current guidance.

CHAIRMAN GRIFFON: It does follow the current guidance. It just wasn't -- there was nothing at that time --

MR. FARVER: There was nothing in the TBD that was referenced. It did not follow that guideline.

CHAIRMAN GRIFFON: So this could have been a case of that in-between DR guidance --

MR. FARVER: Yes.

MR. HINNEFELD: Apparently, there was one.

MR. SIEBERT: Actually, yes it is, because I was able to track down the Hanford --

MR. FARVER: Right.

MR. SIEBERT: -- guidance that was in place at that time, and I put a copy in there, and it does specify --

CHAIRMAN GRIFFON: You did put a copy in there?

MR. HINNEFELD: I think I sent that.

MR. SIEBERT: Yes, that did come across last night, and, yes, it does -- it does specify that for that year you used a 44 to 46 value. And that's a good example of something that is good for us to have. I agree.

CHAIRMAN GRIFFON: Yes.

MS. BEHLING: This is Kathy Behling. Just for one second. Okay, this is one that Stu sent and it's SC&A 125.6 support document, and what was included here, as we've been talking so much about today, is what reminds me of a DR guideline. I believe that's what you could call this, and this is why, I guess, we've been pushing to say this would be something that would be such a useful tool to have in the case files.

I don't know if you all have that

open or if you can view that particular document, but would you agree, Stu, that this would be considered a DR guideline?

MR. HINNEFELD: Yes, I believe if there were -- I mean, this one -- I think this specific one has elapsed because the TBD has been revised, but things like this would be what I intend to tell ORAU to use. You know, if there's one that pertains to a cit and there are dose reconstructions from that cit -- -

CHAIRMAN GRIFFON: To include in the file.

MR. HINNEFELD: Just stick it in the file. You don't have to -- if you don't use, no matter if you don't refer to it, you don't use it, if it doesn't even apply, it doesn't matter.

MS. BEHLING: Right.

MR. HINNEFELD: Stick it in the file.

MS. BEHLING: And not only is this

invaluable to the auditors, but it's invaluable to, like we've been talking, years from now --

MR. HINNEFELD: Right.

MS. BEHLING: -- if we ever go back to this, you'll know precisely what was done.

CHAIRMAN GRIFFON: Yes. One second. Now 125.9 is the next one, right?

MEMBER CLAWSON: Yes.

MR. HINNEFELD: I didn't really have anything. We were hoping to get a little more clarity about our action here, because I failed to make any notes on this last time.

CHAIRMAN GRIFFON: Yes.

MR. HINNEFELD: It was one of the highlighted items. I just didn't have any notes, and I couldn't recall what the discussion was.

MR. FARVER: Okay, the -- it looks like the DOE records indicate this employee was involved in four incidents. Three in '57 and one in '61.

In three of the incidents it said bioassay requests. For example, potential fission product, uranium and plutonium inhalations, positive nasal smears. Bioassay requested on two dates.

Well, these dates don't match up to the bioassay data, and also the write-up in the -- well, I guess that write-up refers to the CATI report, not the DOE record.

The DR does talk about some instances in the DOE files of contamination events, but since the person was being monitored for internal and external, well they should have been taken -- should have been included with the bioassay data.

But I don't believe the dates of the incidents correspond with the bioassay data.

CHAIRMAN GRIFFON: So that's the question?

MR. FARVER: Yes.

CHAIRMAN GRIFFON: So the bioassay

request forms related to the incidents do not match the bioassay data, and NIOSH was going to look into that --

MR. HINNEFELD: Well, we -- I couldn't remember. I couldn't remember what to do on this, so I didn't take --

CHAIRMAN GRIFFON: No, no, no, right. I mean, that was the clarification for next time, right? Was that what we're after?

MR. FARVER: Yes.

MR. HINNEFELD: Okay, so this is an instance where we have -- you say it's a DOE record that describes the incident --

MR. FARVER: Right.

MR. HINNEFELD: -- and this person's is set for bioassay, or whatever.

MR. FARVER: It's either written on there or checked --

MR. HINNEFELD: Yes.

MR. FARVER: -- and I forget how it is.

MR. HINNEFELD: And so there's no

bioassay approximating that date --

CHAIRMAN GRIFFON: Around that time period.

MR. HINNEFELD: -- around that time period, or at least from that time period, or at least not from that point later. And so what happened to those bioassay samples and how do we know we got them, or why didn't we get them?

CHAIRMAN GRIFFON: Right.

MR. HINNEFELD: Should we, you know, make another attempt? Our additional attempts back for data have largely been fruitless, although it doesn't mean we shouldn't go back and ask.

I think -- what would an explanation like this be, that since this person was on a bioassay program and didn't -- apparently we don't have an incident sample from these incidents but we do have a routine sampling regimen, it would seem to me that an intake, an acute intake associated with this

event, could be matched up with later bioassay --

CHAIRMAN GRIFFON: Right.

MR. HINNEFELD: -- and you could compare what does that -- you know, how big could this event have been -- with the subsequent bioassay date, and how does that compare with what we assign, because we probably used a chronic if we didn't have any positives or something. How does that compare with a chronic?

So that could be it.

CHAIRMAN GRIFFON: And I think you see, looking at the 12/08 action, if you look at that that's all those things you're saying. Was all the data obtained?

Why wasn't it picked up in peer review? That's another standing question here. And then is the chronic bounding, and if you can sort of demonstrate that that the chronic is bounding, then I think that would, you know --

MR. HINNEFELD: Yes.

CHAIRMAN GRIFFON: I think that would, you know. Yes, we couldn't find the incident data; however, you know --

MR. HINNEFELD: Yes.

CHAIRMAN GRIFFON: -- these dates and looked at the data and, you know.

DR. MAURO: This is a recurring theme, and if I understand what we have here is, yes, that's correct. There is this misalignment, but it doesn't really matter. The answer is: well, it doesn't really matter because it probably was because of -- he was on a routine bioassay.

All of that answers why it's okay that that wasn't done. It leads us right back to what we were talking about before: transparency, documentation, archiving, the four processes that went into it. So I guess, you know, we're hitting this over and over again.

CHAIRMAN GRIFFON: Well, but the

other thing on this one -- I agree with you, John, but the other part -- and I'm not that familiar with this case, so I might be speaking out of turn here, but I guess the question I would have also is are the incidents related to the similar nuclides that are involved in the chronic -- or the routine bioassay.

DR. MAURO: Right.

CHAIRMAN GRIFFON: The incidents were contained in something else.

DR. MAURO: Yes, well, one was uranium and one was plutonium.

CHAIRMAN GRIFFON: Right, and then you're back at square one. And I don't know, I have been on sites where incident data is sort of kept separate from routine bioassay logs and stuff, so it may be that there is some missing chunk of data. It could be across the board for a number of employees, not just, you know --

I think that there's some other

questions here.

DR. MAURO: You're absolutely right.

MEMBER CLAWSON: Doug, do you have this one? Was this the Nevada Test Site?

CHAIRMAN GRIFFON: Hanford.

MEMBER CLAWSON: I thought I saw some NTS stuff on here. Okay.

CHAIRMAN GRIFFON: All right. So --

MR. HINNEFELD: Okay, that's more clear. At least I remembered to take some notes this time.

CHAIRMAN GRIFFON: But I think -- like you said, Stu, it may be what you come back with isn't -- isn't -- isn't the data itself -- but the fact that later data, you know, considering the dates of the incidents and the matrix incidents, we clearly show we come down -- that kind of, you know. So that may be your response.

MR. HINNEFELD: Well, we've got

some people on the project who are pretty smart about Hanford and so, you know, if the incident data would not have been captured --

CHAIRMAN GRIFFON: Right, they should know that.

MR. HINNEFELD: -- in the record, you would think that they would know that.

CHAIRMAN GRIFFON: Yes, that's true.

MS. BEHLING: I believe this individual did work occasionally at the Nevada Test Site, also.

CHAIRMAN GRIFFON: Oh, really?

MEMBER CLAWSON: I thought I saw that on there, but that's been one of the questions of is -- especially being on the Nevada Test Site, Savannah River, so forth, what I've run into is the home place says that they're being -- say it was Hanford, well, Nevada Test Site actually monitors them while they're down there, and Nevada Test Site says, no, they're not our responsibility. They're

Hanford's site.

So there has been -- as I have seen there's been a disconnect on where the data went.

CHAIRMAN GRIFFON: That would a complicating factor.

MEMBER CLAWSON: It's a complicating factor in who is actually responsible for them, but they both point fingers in the opposite direction. There was data taken, but what happened and where did it go?

MR. HINNEFELD: Well, the incident file we have -- the incident's from Hanford? I mean, that's usually the site that gives us an incident report in the exposure history. You know, normally Hanford does that. I don't know that NTS does that.

CHAIRMAN GRIFFON: Nevada didn't have --

MR. HINNEFELD: Yes.

CHAIRMAN GRIFFON: Anyway, I won't

go there. I'll save that for next week.

MEMBER CLAWSON: But I'm glad this came up because this had been a reoccurring thing that we've seen similar things like this, but several different sites, especially where they were going out and coming back and so forth like that.

CHAIRMAN GRIFFON: Okay, I think that -- that completes 125, and I'm going to propose a -- we take a 10-minute -- 10-minute break, comfort break, maybe turn the heat down in here.

MR. KATZ: I feel it. It's a little warm is right. Okay, so I'm just putting the phone on mute. I won't disconnect the line.

(Whereupon, the above-entitled matter went off the record at 2:10 p.m. and resumed at 2:23 p.m.)

MR. KATZ: All right. Hello, we're back. We're back on the phone.

CHAIRMAN GRIFFON: Okay, we're back

live in the Cincinnati Airport Hotel.

MR. KATZ: Mike, Mike, are you with us?

MEMBER GIBSON: Yes, I'm still here, Ted.

MR. KATZ: Thanks, Mike.

CHAIRMAN GRIFFON: All right, Mike, thanks for hanging in there, Mike. It's exciting material -- we do get through the details, this is good.

We're on Case 126, although I have to find the next one that we really -- 126.2 has a follow-up item. This is NIOSH to verify based on work history that OTIB-2 is appropriate and the certainty that it is bounding.

MR. HINNEFELD: Well, I sent a 126 on --

CHAIRMAN GRIFFON: So one case finding went to 126.2. Did you sent something for 126?

MR. FARVER: Yes, that's what file

--

MR. HINNEFELD: Yes, I sent it last night. It was on the part two email, so in set response is part of two.

MR. FARVER: I haven't looked at it.

MR. HINNEFELD: There's a 126 zip.

CHAIRMAN GRIFFON: Can maybe you just present it and then -- SC&A hasn't had a chance to look at it, but at least maybe you can give us an overview.

MR. SIEBERT: Wait a second, let me finish the email that I'm already doing.

CHAIRMAN GRIFFON: The zip only has about 12 files in it, right? More than that?

MR. SIEBERT: Okay, the email file is on the way to your desk.

MR. FARVER: The real one?

MR. SIEBERT: It's the real one, unless I sent the wrong one. Which one are we looking at now?

CHAIRMAN GRIFFON: 126.2, it's a

zip file that was sent last night.

MR. SIEBERT: Okay, that's what this is. What's in the zip file are all the -- - all the background files to demonstrate that if we had assessed the internal based on his actual data, it's less than what we assigned under OTIB-2.

CHAIRMAN GRIFFON: Right.

MR. SIEBERT: That's -- I mean, that's all --

CHAIRMAN GRIFFON: That's what's there, right? Yes. Really, we just need to give SC&A time to --

MR. SIEBERT: Right.

CHAIRMAN GRIFFON: I don't want to do that live, you know. Yes. Doug, agree?

MR. FARVER: Yes.

CHAIRMAN GRIFFON: I thought you'd agree with that.

MR. FARVER: But that was just a question, right -- whether it's bounding or not?

CHAIRMAN GRIFFON: Right.

MR. SIEBERT: And that's all that's demonstrating in this.

CHAIRMAN GRIFFON: So I'm just going to put NIOSH provided supporting files and SC&A will review them.

DR. MAURO: Mark, after we do the review do we -- how do we mechanistically handle it? Do we just email you, say that we recommend closing? Is that how we --

CHAIRMAN GRIFFON: How do you come back to this meeting?

DR. MAURO: Oh, the next time would be -- so you wouldn't do it in between?

CHAIRMAN GRIFFON: No, I don't want to close out, because the work group's closing. We don't want to get into that issue of the --

DR. MAURO: Oh, no, I'm not saying we're closing. We just recommend that we close --

CHAIRMAN GRIFFON: Right.

DR. MAURO: -- and give you the reason and you have it?

CHAIRMAN GRIFFON: But I know that's one of the problems I've had with the procedure, the subcommittee's database --

DR. MAURO: Yes, yes.

CHAIRMAN GRIFFON: -- is that sometimes I see SC&A closed this issue.

DR. MAURO: Well, no -- no, no --

CHAIRMAN GRIFFON: They recommend.

DR. MAURO: -- we recommend, and that's the only reason I asked you. Would you like to see something from us before the next work group meeting with our recommendations, so that then you could act on it?

CHAIRMAN GRIFFON: Oh, it's always better if you have a response ahead of time. We all get into this habit of the last minute.

DR. MAURO: As opposed to doing it here?

CHAIRMAN GRIFFON: Yes, but if you have a response ahead of time --

DR. MAURO: We'll do it.

CHAIRMAN GRIFFON: -- then at least we can -- but then we can formally close it.

DR. MAURO: And then close it at the meeting? That's what we try to do.

MR. FARVER: And if there's supporting information, I usually try to email that ahead of time --

CHAIRMAN GRIFFON: Right.

MR. FARVER: -- things like that.

DR. MAURO: Good.

CHAIRMAN GRIFFON: Okay -- so moving on 127.1, and I don't know why. I had a couple -- I had highlighted in the NIOSH response as well. Anything about an additional response?

MR. HINNEFELD: Yes.

CHAIRMAN GRIFFON: Was that something I was missing or -- anyway.

MR. HINNEFELD: I had a note that we were supposed to provide evidence that EE worked in Building 108 while in the 100 area.

That's the note I took at the March meeting.

CHAIRMAN GRIFFON: And that I have in the -- yes, that I have in the resolution column, but then I have in the matrix -- under the NIOSH response I have something about additional response. I'll try to --

MR. SIEBERT: Well, the additional response is -- the April 15th response.

MR. HINNEFELD: I see. Your -- in what I sent.

CHAIRMAN GRIFFON: It's in your --

MR. HINNEFELD: What I sent last night was --

CHAIRMAN GRIFFON: There it is, okay. Oh, and it's a good one. It's a long one.

MR. SIEBERT: Don't mix those up.

CHAIRMAN GRIFFON: So can you maybe summarize that -- what you found out?

MR. HINNEFELD: Well, I mean the person was a laboratory technician in the 100 area, and so I think the finding relates to

why weren't neutrons included in the dose reconstruction, since they worked in the 100 area, which is the reactor area.

CHAIRMAN GRIFFON: Right.

MR. HINNEFELD: And our response was, well, not every building in the 100 area is a reactor building. This person was a lab tech and, you know, based on the work, et cetera.

And so this is more exposition on that. It explains where in the file -- in the case file we find the information that describes, you know -- well, I guess where it describes that she's in Building 108, or I guess in one case Building 1713.

MR. SIEBERT: Both -- both areas.

MR. HINNEFELD: And then we quote from a -- it looks like a document available on the web about work activities that occurred in Building 1713.

CHAIRMAN GRIFFON: What's the relevance of this beryllium work?

MR. SIEBERT: Well, the bottom line is they exposed rats for research purposes and then transferred them over to another building for care --

CHAIRMAN GRIFFON: But exposed to beryllium -- or not radiation?

MR. SIEBERT: Right, but they were -- but they were exposed in another part of the plant, and -- what this is pointing out is they were transferred to this facility, which clearly is not a facility with neutrons.

MR. HINNEFELD: It's where the --

MR. SIEBERT: It's where they took care of the lab animals.

MR. HINNEFELD: One of the buildings is where the EE worked, and so they were taking care of lab animals in that building.

MR. SIEBERT: So that combined with being a lab technician dealing with biological blood samples, stuff like that from the animals, the Dose reconstructors determined

that neutrons would not have been appropriate because they weren't working anywhere near the reactors, and it's just explaining that situation, which I think we had agreed on the last time. You just wanted a little bit more specific information as to why we came up with that idea.

MR. FARVER: Oh, I thought I just agreed to it, but --

MR. SIEBERT: Well, we'll go with that, too.

CHAIRMAN GRIFFON: So I guess SC&A's --

MR. FARVER: I'll read through it. I think it would be okay.

CHAIRMAN GRIFFON: I'm sure it's how the TBD states it. I mean, do they segregate -- I mean, how do you -- I don't know --

MR. HINNEFELD: Do you know, Scott?

CHAIRMAN GRIFFON: -- if it generically says that neutron exposures took

place in the -- you know, because it segment out in different buildings.

MR. SIEBERT: I can't tell you off the top of my head.

CHAIRMAN GRIFFON: I'm just wondering about, you know, going forward on other cases if --

DR. MAURO: Am I correct, Doug, when we see that someone's in the 100 area at Hanford we automatically assume they should be assigned neutron does? Is that something that we --

MR. FARVER: We don't do that.

DR. MAURO: Okay.

CHAIRMAN GRIFFON: What was your -- Doug, what was your answer to that? Do you know?

MR. FARVER: Oh, we just don't automatically assume.

CHAIRMAN GRIFFON: You need more information, right?

MR. SIEBERT: And if I remember

correctly, it was actually stated specifically in the dose reconstruction -- as a laboratory tech her duties included reading dosimetry badges for personnel, which obviously you wouldn't be reading personnel badges in a neutron area, performing tasks and so and so forth. And they specified that as their work and used that idea as to why they did not assume neutrons. So it was in the original dose reconstruction.

CHAIRMAN GRIFFON: Going back to our theme of the day, this -- this -- these duties and the job activities were in the original --

MR. SIEBERT: Yes.

CHAIRMAN GRIFFON: -- dose -- okay. Okay, so I think that closes that issue. It does happen.

All right, 127.5. -- it's the same -- is it the same issue? It's missed neutron, right? It's the same --

MR. SIEBERT: It's the same thing.

CHAIRMAN GRIFFON: Same exact thing. I'm completing the record here. Okay.

Now 127.8. I should look in your matrix. You probably have a response, or no?

MR. HINNEFELD: I've got on in there.

CHAIRMAN GRIFFON: Okay, and SC&A -- Doug, have you looked at this one or had a chance to?

MR. FARVER: No, we haven't.

CHAIRMAN GRIFFON: Stu, can you give us a summary of it maybe and --

MR. HINNEFELD: Well, the -- the finding I think relates to the fact that there is some common fission products that aren't addressed in the internal dose. And I think we -- you know, Scott, you know, again correct me if I say something wrong or stupid here.

Our approach to fission products is rather than identify every potential fission product and try to do a dose estimate on every single one, let's choose the most

radiologically significant, you know, in terms of this person's dose, essentially assume all the fission product activity is that radionuclide, which would then give you -- which would be higher than the dose had you apportioned that radioactivity among the various radionuclides and assigned a dose in that fashion.

And so I think that's what this is trying to explain. It's a long explanation, and I didn't get the chance to read much before I sent it out, so I think that's what it's trying to say.

MR. FARVER: Is this our standard one that has to do with OTIB-54?

DR. MAURO: Fifty-four, right. But that has a mix. In other words, 54 has the different reactor types. It has a different mix of radionuclide. In other words, what you do is you go to gross beta gamma in the urine and say, okay, given that gross beta gamma in the urine we're going to assume that this kind

of reactor -- this is your default mix and you get your intake, as opposed to what you just described which would be a single radionuclide.

MR. HINNEFELD: Yes.

DR. MAURO: Okay.

MR. HINNEFELD: I, really -- I'm just speaking off the -- but I think it is true that we don't attempt to identify every radionuclide and assign a dose for everyone. We try to find one or perhaps a suite and apportion the activity, the total activity among those, you know, and the knowledge that those are more radiologically significant and, therefore, would bound with any other distribution of the dose.

MR. FARVER: This looks like the one where you went to the radionuclide chooser on this one.

MR. SIEBERT: Right. This was done prior to OTIB-54 and OTIB-39, which is the co-worker.

CHAIRMAN GRIFFON: It's basically seen as more conservative than --

MR. SIEBERT: And when we went back and re-calculated, if we did it the present way the doses went down --

CHAIRMAN GRIFFON: Went down.

MR. SIEBERT: -- from what we assigned. I've got to read this over again.

CHAIRMAN GRIFFON: Did you provide those calculations to us, or was that part of this transmittal? You may not.

MR. HINNEFELD: I don't know. I don't remember any 127 files.

CHAIRMAN GRIFFON: Because the way I read that last part, you know, they have typically resulted in lower internal -- you know, it's a little squishy there, so --

MR. SIEBERT: It's one of those where we may not have done the actual --

CHAIRMAN GRIFFON: Right, right, right.

DR. MAURO: By the way, on the

OTIB-54, we did review it and found it favorable.

CHAIRMAN GRIFFON: Is that still in the work group or --

DR. MAURO: I think we've gone through it, and there was a few comments, but by and large it was a favorable finding. I don't know --

CHAIRMAN GRIFFON: Is that approach as Stu described it, or is it --

DR. MAURO: No, what we did -- what they did is they took different categories of reactors --

CHAIRMAN GRIFFON: I think it's a little more sophisticated.

DR. MAURO: It's very sophisticated. And, you know, whether or not this particular reactor is embraced by that range of reactive types that are captured in 54.

Then what we did is we did a very detailed analysis of the origin runs that were

run, to figure out the radionuclide mix and what would be the limiting -- Joyce did the work, and she did a very thorough review, and we came back saying, good job.

CHAIRMAN GRIFFON: So they actually went with a mix rather than just a --

DR. MAURO: They went with a mix but it was based on --

CHAIRMAN GRIFFON: I haven't looked at TIB-54.

DR. MAURO: The -- the -- the starting point though was the bioassay, and the problem is --

CHAIRMAN GRIFFON: Right.

DR. MAURO: -- there's a lot of gross beta gamma data in urine out there. What do you do with it?

CHAIRMAN GRIFFON: Of course. So I guess what I would -- I don't know about Doug but what I would want in this case maybe is just the assessment that Scott described just now, the documents that show that, and then we

can close it out, you know.

MR. FARVER: Yes, I thought there was another finding from another case about -- we had this question about, well, we used a radionuclide chooser, and we always come back to say, well, 54 should have taken care of it. We're looking at that, but I never remember it being closed out.

MR. HINNEFELD: No, it's an open finding in a number --

CHAIRMAN GRIFFON: Yes, it is.

MR. HINNEFELD: -- findings, the kind to reconcile this -- the fission product internal dose approaches, you know.

MR. FARVER: Okay.

MR. HINNEFELD: You know, old approaches with current and sort of the basis, and essentially also at the same time as this --

CHAIRMAN GRIFFON: In other words, is this method used in the past more bounding or at least as bounding as TIB-54.

MR. SIEBERT: Right, yes. When this was initially done this person had gross beta urine and whole body counts, and back at that time, without OTIB-54, if you tried to base everything off the urine, the numbers were just unbelievably large --

DR. MAURO: I remember this.

MR. SIEBERT: -- and so what we did is we eliminated with the most claimant favorable radionuclide based on the whole body counts --

DR. MAURO: Yes.

MR. SIEBERT: -- which is where that whole chooser thing came from. Now that we have OTIB-54, a claim like this would be based on the gross beta urine, and with the suite assigned to it, and what we need to do is we need to make that, I guess, what you want to see is that comparison of doing it that way --

DR. MAURO: Yes.

MR. SIEBERT: -- versus what we did

previously with the chooser.

CHAIRMAN GRIFFON: And you answered my other question which is why -- why did things get switched over to this sophisticated model in TIB-54, and the answer is the doses were way too --

DR. MAURO: Too high.

CHAIRMAN GRIFFON: -- astronomical, right.

So what is the -- the remaining action here, I think, is that, you know, NIOSH will provide support files to indicate that it is at least as bounding --

MR. HINNEFELD: Yes.

CHAIRMAN GRIFFON: -- as bounding as TIB-54 approach, or something like that.

Okay, moving on, 127.10, you added a response to those, Stu.

MR. HINNEFELD: Yes, I believe it's much the same issue but from this -- is that right?

MR. FARVER: Probably, let's see.

DR. MAURO: Yes.

MR. FARVER: Well, we closed a section of the TBD that talks about Carbon 14, P-32. There was a radon generator as potentially --

CHAIRMAN GRIFFON: And this is --

MR. FARVER: But I thought we had discussed this.

CHAIRMAN GRIFFON: The way that's worded, several -- radionuclides as opposed to the fission -- you know, it seems like it's a different thing.

MS. BEHLING: It's definitely different than the fission product.

MR. FARVER: Yes, it is.

MS. BEHLING: And I thought we were still waiting on maybe NIOSH to resend a response, because I don't seem to see one here.

CHAIRMAN GRIFFON: Yes, they did -- they did add a response --

MS. BEHLING: Okay.

CHAIRMAN GRIFFON: -- but I'm not sure it's responsive.

MR. HINNEFELD: Well, yes -- to be honest with you that was a response to the note that I wrote last time which has to do with send initial responses to these findings, so that was my note that I wrote last time.

MS. BEHLING: Okay, and I see they did introduce a response into the matrix, into Stu's matrix. I guess we just need to look this over.

CHAIRMAN GRIFFON: I'm not sure -- Doug, can you -- Doug or Kathy, can you go over the original? You have the text there. I mean, it doesn't seem to be related to the fission product question.

MR. FARVER: No, it doesn't. It has to do with Carbon 14 and P-32.

CHAIRMAN GRIFFON: Right.

MR. FARVER: Apparently, it's -- there was a radon generator used for animal studies in the 1008-F Building and later moved

to some other place. Monitoring was probably just by air sampling, but no information has been discovered yet. So that's taken as a TBD.

I guess if we can conclude that this person -- well, no, they didn't work in the 1008.

CHAIRMAN GRIFFON: So Scott, are you saying that those doses from those other nuclides are also bounded by the fission product?

MR. SIEBERT: No.

CHAIRMAN GRIFFON: No.

MR. SIEBERT: I think --

CHAIRMAN GRIFFON: Yes, I think that -- yes.

MR. SIEBERT: I mean, radon, I can tell you right now, isn't an issue that's pressing.

CHAIRMAN GRIFFON: Right. Do you want to strike this response, is this going to confuse us down the line?

MR. HINNEFELD: Yes.

MR. SIEBERT: Yes.

CHAIRMAN GRIFFON: I'm down to 129.5. This is the TIB-54. This is the exact question we were just bringing up, right?

MR. HINNEFELD: Yes.

CHAIRMAN GRIFFON: So do we have files for this woman?

MR. SIEBERT: Well, this is Savannah River. This would be a different issue because as it stands right now OTIB-54 is not applied to whole body counts, and that's what we are -- that's where the discussion needs to be dealt with.

CHAIRMAN GRIFFON: So this was done based on whole body counts?

MR. SIEBERT: Right. This was using chooser with the whole body count.

CHAIRMAN GRIFFON: Right. And the question I have -- maybe this is wrong, but we were going to -- NIOSH was going to compare this to values using TIB-54 and see if the

approach was still bounding or consistent or -- - is that wrong?

MR. SIEBERT: Well, I'd have to look at this case. If this case does not have urine bioassay --

CHAIRMAN GRIFFON: Right, right, so I'm not sure.

MR. SIEBERT: -- for beta, I -- you don't -- 54 doesn't really apply, or we don't have a method to apply it at the moment.

MR. HINNEFELD: There are -- aren't there a series of Savannah River internal fission product dose reconstruction limits around here somewhere?

MR. SIEBERT: It falls under all the rest of them with Savannah River where we used chooser as being -- as what we were going to look into.

MR. FARVER: Yes.

MS. BEHLING: I don't believe that in this particular case there was any urinalysis data. I think it was lung and

whole body count data, and 54 I don't think would apply here.

MR. SIEBERT: Well, as it stands right now, that's one thing I believe we are looking into is how we could apply them -- 54 methodology to whole body counts.

MR. FARVER: Yes, that's what --

MR. SIEBERT: And that's the issue.

CHAIRMAN GRIFFON: Yes.

MR. FARVER: Can it be applied.

DR. MAURO: Isn't Savannah River the place where you used the high five -- highest five, or are you not doing that any longer?

MR. SIEBERT: Well, that's OTIB-1. That's the overestimate.

DR. MAURO: Right, but you weren't doing that here?

MR. SIEBERT: No. This was actually using the chooser -- used the largest of the most claimant favorable of the radionuclides that were monitored within the

whole body count.

DR. MAURO: How does the dose reconstructor decide when to use the high five, as opposed to this method? What would be the judgment --

MR. SIEBERT: When they can use an overestimate.

DR. MAURO: So, in other words, was this person denied?

MR. SIEBERT: I would assume, probably yes.

DR. MAURO: But if you would have gone with the high five, he wouldn't have been?

MS. BEHLING: John, this is a best estimate case.

DR. MAURO: I'm sorry, say it.

CHAIRMAN GRIFFON: Best estimate case.

MS. BEHLING: This is a best estimate case.

DR. MAURO: Oh, this is a best

estimate. Okay, I'm sorry -- okay.

MR. FARVER: This is right after --

DR. MAURO: And he was compensated. And you wouldn't use high five under those -- okay, got it.

CHAIRMAN GRIFFON: So, Scott, let me just capture that. You said you were reviewing TIB-54 first to determine whether it can be used with whole body count data, right?

MR. SIEBERT: Right.

CHAIRMAN GRIFFON: Or whether that --

MR. SIEBERT: Right. I know that's on our plate. We're looking at that.

CHAIRMAN GRIFFON: But I don't know that that impacts this finding right now. I mean, that's -- that's sort of would go over to the procedures work group, right?

MR. FARVER: Well, it's going to come up a lot in findings that you won't have.

MR. SIEBERT: And it has been for quite a while --

MR. FARVER: Right.

MR. SIEBERT: -- because every time we bring up chooser this is what we end up with --

CHAIRMAN GRIFFON: Right.

MR. SIEBERT: -- that it's being looked at and --

MR. FARVER: I think we're still --

CHAIRMAN GRIFFON: And do we have any kind of time frame on that, or is that way out there, or it's hard to tell?

MR. SIEBERT: I can't tell you.

CHAIRMAN GRIFFON: All right, we're going to leave -- I'll leave it on there for now because we left it on there last time, so --

MR. SIEBERT: Well, in this case -- and it's certainly up to you, but in this case it was comp so it's not going to make a decision, and it's already captured in many other places, you could just close it.

MS. BEHLING: This case -- I

thought this case was denied.

MR. HINNEFELD: If it was 70.00 it shouldn't have been.

MS. BEHLING: No, it's 36.6.

MR. FARVER: Did I read the wrong one.

MR. SIEBERT: Now I'm seeing 46.9. So what's the right answer?

CHAIRMAN GRIFFON: We've got three different -- we'll leave it on there either way. We can -- we can deal with that later, but --

MR. FARVER: Well, but I don't have the --

CHAIRMAN GRIFFON: I mean, it's not going to matter that much for the whole matrix because if we delete them all -- if they all fall off at once, that's fine.

All right.

MR. SIEBERT: It's 129.

CHAIRMAN GRIFFON: 130.6. I'm moving ahead.

MR. SIEBERT: 36.63. Do we all agree now when we look at the right one.

CHAIRMAN GRIFFON: Kathy, you were right.

MS. BEHLING: Thank you.

MR. FARVER: I guess what's scary is we could all look at different cases and not realize it.

MEMBER CLAWSON: That comes up to a quality assurance.

DR. MAURO: Failure to communicate.

CHAIRMAN GRIFFON: So I'm on 130.6 now, so we can --

MR. FARVER: Trying to get there.

CHAIRMAN GRIFFON: -- get focused here. We're getting near the end of set seven.

I though we would be doing set 11, but not quite. So is this a question of the work history, right, to see if --

MR. SIEBERT: It's a question of when is it appropriate to be assigning missed

fission product dose for this individual --

CHAIRMAN GRIFFON: Right.

MR. SIEBERT: -- based on the area. And further investigation of where the person was put them in the 400-D area, which is not a reactor area.

MR. HINNEFELD: Is that the heavy water area?

MR. SIEBERT: The heavy water facility. So obviously tritium monitoring would be appropriate; however, fission products, you're not going to be getting it in that area.

So what we determined is that is made sense not to be assigning it. The individual also didn't have a badge, an external monitoring badge, because it was practice in the area of not assigning badges to that area because it wasn't external exposure, as well.

So everything that we found during those earlier years wind up that he was

actually in the 400-D area, and it was appropriate not to assign this.

CHAIRMAN GRIFFON: Why don't we -- that was your initial response, really, but for some reason we were requiring --

MR. SIEBERT: You wanted to get -- you just wanted us to go a little bit more deeply into determining the 400 area, which we delved into and found. Yes, that's what everything is.

CHAIRMAN GRIFFON: But I guess what I'm getting at is I don't see an additional response on that -- that delving into it.

MR. SIEBERT: It's in Stu's.

CHAIRMAN GRIFFON: Okay, thank you.

MR. SIEBERT: Sure.

CHAIRMAN GRIFFON: So, Doug, did you have a chance to look at this?

MR. FARVER: No, I have not.

CHAIRMAN GRIFFON: Would you like a chance?

MR. FARVER: Yes, please.

MR. HINNEFELD: Now this person's exposure record theoretically would have a bioassay cards, it would have the work locations?

MR. SIEBERT: Yes, it does. It's listed as 400-D in the very early years, or just D a little bit later, which was fifties, early sixties. And we also looked at the fact that Savannah River doesn't have a D reactor. It has a C, L, K, all those others, so it couldn't be confused with a reactor area. When they were specifically saying D, they meant the 400-D area on the cards.

MR. FARVER: That's correct, 400-D is heavy water.

MR. SIEBERT: And the person was an operator, foreman, and supervisor in the heavy water operations.

CHAIRMAN GRIFFON: 131.4 is the next case I have.

MR. HINNEFELD: I don't think I

sent anything to you on 131.4.

DR. MAURO: I think we had an action on that, right?

CHAIRMAN GRIFFON: No, NIOSH will provide a sample calculation for those.

MR. HINNEFELD: My action item was sample dose calculations showing how dose was reconstructed for this DR-4 for a given year. Is this --does this have a shallow dose?

DR. MAURO: You didn't have all the --

MR. HINNEFELD: I'm on 131.4.

MR. FARVER: Yes, I thought we closed this last time.

MS. BEHLING: I thought so, too.

CHAIRMAN GRIFFON: I had something about a sample calculation using --

MR. HINNEFELD: I had them there, too.

MR. FARVER: Yes, this is the point three. I do remember this one. This is one we couldn't figure it out, and they were in --

CHAIRMAN GRIFFON: So it's a remaining action?

MR. HINNEFELD: Yes, yes, and I didn't send anything before this meeting. I didn't know.

CHAIRMAN GRIFFON: 131.6?

MR. HINNEFELD: Yes, I didn't send anything additional with this one either, but this is -- it sounds a lot like the one we talked about just a minute ago.

It wasn't in the consolidated matrix that came over a couple of days --

131.4 and 131.6.

CHAIRMAN GRIFFON: I took a big jump down to 135.1, is the next one I found.

MR. SIEBERT: No, we haven't answered that one. I think it was just -- matrix --

CHAIRMAN GRIFFON: Oh, it is.

MR. HINNEFELD: Yes.

CHAIRMAN GRIFFON: Doug, you probably haven't had an opportunity to look at

this, have you?

MR. FARVER: No.

MR. SIEBERT: Well, it probably shouldn't be that hard. The question was whether it is based on missed or co-worker dose, and it was based on -- the person was actually monitored the full time, so it was based on actual badge numbering, and it was based on missed.

That was the only question I had outstanding.

CHAIRMAN GRIFFON: Yes. So it was based on reported badge doses and missed doses, not a co-worker model, right?

MR. SIEBERT: Correct.

CHAIRMAN GRIFFON: Is there any follow-up on that SC&A, Doug? I think that --

MR. SIEBERT: It's clean.

CHAIRMAN GRIFFON: Yes. 135.4.

MR. HINNEFELD: I didn't send anything new on that. I'm still working on

that.

CHAIRMAN GRIFFON: Okay.

MR. HINNEFELD: I think we're supposed to provide information about work locations where tritium might have been a factor in 112. Isn't that what we were asked to do?

CHAIRMAN GRIFFON: Yes.

MR. HINNEFELD: Because our response says based on where he worked. There isn't any, but that was all it said.

CHAIRMAN GRIFFON: Right. All right, yes, because he reported on the CATI, too. It was reported on the CATI.

MR. HINNEFELD: Yes, he probably checked it on the CATI.

CHAIRMAN GRIFFON: All right, 136.3.

MR. HINNEFELD: I think that was an extra file I sent last night.

MR. SIEBERT: Yes, that's the x-rays at Rocky Flats.

CHAIRMAN GRIFFON: Is that in the matrix or is it --

MR. HINNEFELD: It's separate, and I'm thinking that might be part three. No, not part three.

It's in the seventh set response it is not part two or part three. It was the first of the messages. There are a series of 136 files attached there.

CHAIRMAN GRIFFON: I'm sorry, Stu, which --

MR. HINNEFELD: There are a series -- it's on -- the message I sent just said seventh set response. I sent it at 5:23 yesterday, and it doesn't have a part two or part three on it -- the title.

MR. FARVER: I don't see anything in there concerning x-rays.

MR. HINNEFELD: Well, I don't know. I sent a bunch of 136 files.

MR. SIEBERT: Yes, those are all the internal files for 136.

MR. HINNEFELD: Oh, this is -- okay, these are 36.4 and 5. That's not for three --

MR. SIEBERT: Yes.

MR. HINNEFELD: -- so I have not got a report back; in fact, I have, I think, a phone call in from --

MR. SIEBERT: No, we've got that done.

MR. HINNEFELD: Did I do something on this?

MR. SIEBERT: Yes, this is part of what I sent.

MR. HINNEFELD: Well, I dropped this one. I dropped this one, then.

MR. SIEBERT: The bottom line on this one, if this is where we were having the issue that the Rocky Flats films may not have lined up with the paper record that we were basing everything on, so we had requested from Rocky Flats to look through their films for specific cases to see if there was a

difference in what was in the film versus what they sent us.

And this was one of the ones that came back and actually what we had in the paper record was identical to what was in the film record. So this one actually, because we used the paper record as a best estimate, it was appropriate because it's the same as what was in the film record.

Now we found at Rocky Flats there are some where there are more films than what was in the paper records, and that's a different issue that we're dealing with. But for this specific case they lined up on a one-to-one basis so what was done using the paper record was accurate.

MR. FARVER: But you didn't know it was accurate at the time?

MR. HINNEFELD: At the time we did the dose reconstruction we didn't know that the -- that there was a problem with the paper records.

MR. SIEBERT: Right.

MR. HINNEFELD: That we discovered later.

MR. FARVER: Even though that's in the TBD?

MR. SIEBERT: The TBD says there may have been inconsistencies, however, it didn't always direct to always use annual -- we had this discussion before.

MR. HINNEFELD: Yes, the TBD left the dose reconstructor with nothing to do -- I mean, no -- it said it threw that in there but didn't provide any direction, and it took us a while to discover that we needed some direction, and then once we started looking in it we saw, yes, that's really true. We can't rely on the paper record, and so that's when we started . I think we were actually retrieving the paper records.

MR. SIEBERT: But they're going through all the films.

MR. HINNEFELD: Yes, that's what I

meant, going through all the films.

DR. MAURO: So you don't default to this -- what is it, Ron Kathren's report, the OTIB-6, for all x-rays. In other words --

MR. SIEBERT: No, not if we have something in a -- not if we have a TBD.

DR. MAURO: And you have actual film records for this worker and how many records --

MR. SIEBERT: We ended up going back to the film record.

CHAIRMAN GRIFFON: We had a paper summary, yes.

MR. SIEBERT: We had a paper -- it's Rocky Flats. So we have a TBD, which told us -- gave us direction but it was not real clear on how we implemented the direction, and then once we determined that was the case we -- this really came up because I was trying to determine if the paper records were fully complete or not, and when we looked at those seven ones requested, most

of them had some films in there that were not in the paper record.

Now this one, like I said, this one did bring up that issue.

DR. MAURO: Just for my own information, did this person's records include one per year or more --

MR. SIEBERT: No, no, it's -- there's one in '69, there's one in '73, one in '75, one in '77, '78, '83, and '84.

MR. FARVER: You tell me that's what they did. As you got older, you had them more frequently.

MR. SIEBERT: Right.

MR. FARVER: But it doesn't match up with the frequency in the TBD. Has the guidance in the TBD been changed or clarified?

MR. SIEBERT: I don't know.

MR. HINNEFELD: Well, there was a lot of changes made to that TBD. There were a lot of changes made. I don't know if this one was changed or not.

MR. SIEBERT: This is a relatively recent --

MR. HINNEFELD: Yes.

MR. SIEBERT: -- issue that's come up in the last few months that's exactly with the film records and so on, so I'm guessing probably not at the moment.

CHAIRMAN GRIFFON: Well, can I -- you might have answered this already, but going back to Doug's initial questions you assumed up front when the case was done that the paper record was complete. And you kind of got lucky on this one. As you said, other cases didn't line up, but how did you -- you didn't know that beforehand.

MR. SIEBERT: The way the TBD was written is it said there may be some inconsistencies. So what we looked at doing was if it appeared to be -- and this has to be a judgment call.

If it appeared to be complete to the dose reconstructor -- there's no reason

for them to believe things were missing out of it. That's -- they made the assumption that the paper record was accurate and moved on from there.

And that's what they did in this case, because he was getting one every couple of years. There's wasn't just huge time frames that were missing, so they used their professional judgment of saying it looks like it's complete, so we'll make the assumption that it is complete.

MR. FARVER: It just -- it was not clear to TBD?

MR. SIEBERT: Right.

MR. FARVER: You know, TBD says based on the records review during preparation of this document, no worker received x-rays more often than annually. And then it goes on without a review of the specific claimant's x-ray file, an exact count of the x-rays is impossible. Medical files do not always document each x-ray taken, at least

not in the years before the mid seventies.

So claimant's favorable approach is to assume -- lumbar spine was taken, that the claimant worked -- it gives guidance about what to assume, then.

MR. SIEBERT: Right.

MR. FARVER: But --

MR. SIEBERT: And another thing to point out there, it does say prior to the mid seventies.

MR. FARVER: Yes.

MR. SIEBERT: One, two, three, four, five -- five out of his two, four, six, seven -- out of his seven x-rays were taken from the mid seventies forward, so --

MR. FARVER: No question about it.

MR. SIEBERT: -- once again the dose reconstructor looked at it and said, well, it looks like it's complete, and I don't have an indication that it's not. And that's why a default process went in there.

CHAIRMAN GRIFFON: I'm not sure

where. Is this a remaining TBD? I should ask the question. We have some --

MR. HINNEFELD: I've got a note. I'll ask and see --

CHAIRMAN GRIFFON: We still have some Rocky Flats.

MR. HINNEFELD: There's still some Rocky Flats changes? We'll continue getting Rocky Flats cases or cases outside the class period, so --

MR. SIEBERT: And now that we're getting the film records --

MR. HINNEFELD: And we're getting the films --

MR. SIEBERT: -- the TBD's going to be easy enough to say you've got the film record, go with it.

MR. FARVER: And that's kind of what I was getting at.

MR. HINNEFELD: Yes.

MR. SIEBERT: Right.

MR. FARVER: You change it to say

that.

MR. SIEBERT: Right, we have not done that, as of yet.

CHAIRMAN GRIFFON: So you have -- I mean, there's complete sets of films --

MR. HINNEFELD: Yes, I've put it on the list. You understand --

MR. SIEBERT: That's what they're going through now.

MR. HINNEFELD: Our project to-do list --

CHAIRMAN GRIFFON: They'll be there for all workers, do you think?

MR. SIEBERT: Yes, they're going through --

MR. HINNEFELD: Our project to-do list is a Microsoft project file that --

CHAIRMAN GRIFFON: But you haven't made that commitment yet, so you definitely use those records or that's just something --

MR. SIEBERT: Well, we internally are.

MR. HINNEFELD: What's that?

MR. SIEBERT: Go ahead, I'm sorry.

MR. HINNEFELD: I was just babbling about our to-do list. I said I would put this TBD revision on the to-do list, and our project to-do list is a Microsoft project file about this thick.

CHAIRMAN GRIFFON: I was making a to-do list on the plane just for tomorrow -- anyway.

So, you're saying --

MR. SIEBERT: But this is a good example of something that we can't put into a guidance document.

CHAIRMAN GRIFFON: Yes, exactly. That's what I was thinking. It's for guidance; it's not a TBD yet.

MR. SIEBERT: And then there's -- I don't see it.

CHAIRMAN GRIFFON: Right. Okay. I mean, I captured that stuff and said no further action for this case, I don't think.

We've got another one now.

All right, 136.4. Now these are --

MR. HINNEFELD: Yes, point four and point five are in the files that I sent along, okay.

MR. FARVER: I mean, the real files aren't the ones that they sent. That was some teaser file to attract you this morning. And once they finally sent me the real file --

CHAIRMAN GRIFFON: Can Scott --

MR. HINNEFELD: Did this come over in the transfer file?

MR. SIEBERT: Yes, I think so.

CHAIRMAN GRIFFON: Scott, can you send us the correct file, as well?

MR. SIEBERT: I'm not sure I have everybody's address.

MR. HINNEFELD: Did you send it to me?

MR. SIEBERT: Yes, I just forwarded it to you a little while ago.

CHAIRMAN GRIFFON: Stu, I know you

were looking at this on the break. I mean, are you ready to --

MR. HINNEFELD: Oh, no. I finally found out what the real file was, and I'll have to look at that.

CHAIRMAN GRIFFON: Okay, all right.

MR. HINNEFELD: The other file's really --

MR. SIEBERT: You thought nothing had changed because with the files you had nothing had changed.

MR. HINNEFELD: Right.

DR. MAURO: Are you saying the original analysis used Type S, and you agree that Type M should have been used? Is that what this is? And then you reran it with M?

MR. SIEBERT: I'm sorry, it's the one where -- yes, we assumed -- we assessed it as Type M because the dose came out more claimant favorable than Type S, based on the assumptions on how you fit the data.

And Doug came up with a way to fit

the data that Type S had a larger dose, but the file that I sent out a little while ago demonstrated that that actually overestimated earlier chest counts, and is also inconsistent with assuming exposure during the whole employment time frame.

CHAIRMAN GRIFFON: In other words, the approach that Doug described. You're saying the course that he described?

MR. SIEBERT: It's outside --

CHAIRMAN GRIFFON: They were given higher chest measurements than they actually have to?

MR. HINNEFELD: Yes.

MR. SIEBERT: Yes, yes. It's two to three times higher than the actual results.

MR. FARVER: And just from looking at your file, I still have some questions about it, so I'll ask you about them.

CHAIRMAN GRIFFON: Do we still have a working subcommittee? We have me and Mike, out of five?

MR. HINNEFELD: I don't know.

CHAIRMAN GRIFFON: I'm not sure that we can --

MR. KATZ: There's no quorum requirement for the subcommittee.

CHAIRMAN GRIFFON: Oh, there's no quorum requirement for the -- okay.

MR. SIEBERT: You can have a meeting all by yourself.

CHAIRMAN GRIFFON: I was getting tired.

MR. SIEBERT: We can put one in place.

MS. BEHLING: No, no.

CHAIRMAN GRIFFON: That's the 100 cases report.

MR. HINNEFELD: Yes, I just copied everybody --

CHAIRMAN GRIFFON: I try, I try.

MR. HINNEFELD: I was with you.

CHAIRMAN GRIFFON: This is only the dead spot in the afternoon.

MR. HINNEFELD: Yes, I was right there with you.

CHAIRMAN GRIFFON: I need one more coffee.

MS. BRACKETT: Hello. I'm sorry, this is Liz. Emily, are you sure there's no quorum requirement since they have a charter?

MS. HOWELL: No, because the subcommittee is less than quorum anyway.

MS. BRACKETT: Oh, okay. No, I meant quorum of the subcommittee members.

MS. HOWELL: I don't think so. I don't -- I can check.

MS. BRACKETT: Okay.

CHAIRMAN GRIFFON: Yes, Liz, if you can find something -- I'm a little low on energy, so anything you can find.

MS. BRACKETT: I'll look. I'll pull up Roberts and make sure, but, no, just carry on. I just wanted to double check. Thanks.

CHAIRMAN GRIFFON: All right. I'm

going on to 137.4, overarching issues. So I think this is just going to be an on-going --

MR. HINNEFELD: Yes, my note was that this was going to be an overarching issue.

CHAIRMAN GRIFFON: Right, right. 137.6.

MR. FARVER: I'll have to review this.

CHAIRMAN GRIFFON: Did you guys send the data? Okay.

Is there a response in the matrix, or is this pile that you --

MR. FARVER: In the matrix.

CHAIRMAN GRIFFON: 137.7.

MR. FARVER: I'll have to review that. See, a lot of these ones like this I can just email you back saying --

CHAIRMAN GRIFFON: That's fine. And then we might be able to very quickly at the next meeting. That's fine.

MR. FARVER: Right.

CHAIRMAN GRIFFON: This is also in the matrix?

MR. FARVER: Yes.

CHAIRMAN GRIFFON: I'm sorry to take the time up this way, but it's going to make it a lot easier.

MR. HINNEFELD: That's great.

CHAIRMAN GRIFFON: Okay, 137.8, anything?

MR. FARVER: Same thing.

CHAIRMAN GRIFFON: A lengthy response.

MR. HINNEFELD: Yes, it's -- it went really long. Trying to be explanatory.

CHAIRMAN GRIFFON: We appreciate that, Stu.

MR. HINNEFELD: Part of this is my fault. The original response to that I didn't think answered the whole question, so I answered more and it really came across with a lot more.

CHAIRMAN GRIFFON: Looking down, is

there any of those here?

MR. HINNEFELD: I think one's 144.2, maybe.

CHAIRMAN GRIFFON: Yes, 144.2 is the next item I have. Did you respond to that in the matrix?

MR. HINNEFELD: Let me see.

MR. FARVER: Yes.

MR. HINNEFELD: Yes, I did.

MR. FARVER: Now would this be an example of something that would be a DR guideline?

MR. SIEBERT: I'm sorry, I'm still tracking back to 136.

MR. HINNEFELD: 144.2 where it says -- this is -- there's an inconsistency in the ambient dose table in Los Alamos.

MR. SIEBERT: Oh, this is the table, yes.

MR. HINNEFELD: Is there a guide out about that?

MR. SIEBERT: No, I'm sure --

probably it's correct in the tool, and you would never assign outside the tool, so --

MR. HINNEFELD: So in other words this is -- the additional guidance is in the tool?

MR. SIEBERT: Right, the tool handles the issue itself. It has from the initial version of it. It has always used the max value as opposed to the value that says it's the max in that table.

MR. HINNEFELD: Is there a site protocol?

CHAIRMAN GRIFFON: So the tool has the correct maximum value in the table, and the table has the wrong one -- the table in the TBD?

MR. SIEBERT: The TBD has the correct values across the board, except it has a table that says the max, and it isn't always the maximum from all the other tables.

CHAIRMAN GRIFFON: Okay.

MR. SIEBERT: It should be, but it

isn't. It's a TBD issue that we're aware of, and I know the TBD authors are going to fix that in the next version of the TBD.

The tool itself from its initial incarnation has always had all those tables in there and assigned the maximum of them, as opposed to what came out of the max table.

MR. FARVER: Okay.

MR. SIEBERT: So the maximum was always being assigned, even though the TBD didn't specify it correctly in the maximum table.

MR. FARVER: Oh, no, I understand the process. I'm just trying to think how anyone could check those numbers then if, you know, if they didn't know that.

In other words, if you can go to the tables and pull out what should be pulled -- the numbers that should be pulled out, you are going to get different answers, like we did when we looked at it.

MR. SIEBERT: Well, depends on what

you say should be.

MR. FARVER: Okay.

MR. SIEBERT: If you should be using the maximum table in a TBD, which has a couple of entries that are wrong, yes, you will get the wrong answer.

MR. FARVER: Okay.

MR. SIEBERT: But if you use the maximum value from all the tables, you will get the identical answers we get, which is the correct answer. It's just that max table is wrong and needs to be updated.

MR. FARVER: Did you send out a notice saying, hey, this max table is wrong? No.

MR. SIEBERT: Probably not.

MR. FARVER: Right, because they're using the tool.

CHAIRMAN GRIFFON: Right.

MR. SIEBERT: Right. It's -- once again it's something the TBD author is aware of and needs to be fixed, and then it can

merge into the TBD.

From our implementation point of view, it's already covered, but from a documentation point of view, I see where you're coming from.

MR. FARVER: I'm also thinking that before you do another one of these cases we're going to have the same findings.

MR. SIEBERT: It was only -- if I remember right it was only a few years that had that issue. I mean, it's only three, four years out of all the years.

MR. FARVER: Do you feel lucky?

MR. SIEBERT: You happened to pick one of the years.

MR. FARVER: And that was all. If we're going to run this again, it's just trying to figure out how to avoid it.

CHAIRMAN GRIFFON: Right. I think for this case it's closed, it's picked up in the revised TBD. I put that down.

Is that the last one, and it's the

last one I have.

MR. HINNEFELD: That's the last one I had.

CHAIRMAN GRIFFON: I think it's a good point for a break, and then maybe we can -- let's look at the eighth matrix. If people still have some energy I'd like to go another hour, maybe with -- continue on the first pass through the eighth matrix.

DR. MAURO: Well, I was going to make a suggestion. There are --

CHAIRMAN GRIFFON: Yes, the other cases.

DR. MAURO: -- that are the back, which are site profile --

CHAIRMAN GRIFFON: Why don't we do those. Have you sent --

DR. MAURO: Yes, we're ready to do that. I think -- I think our team is still there. I haven't lost some of them.

CHAIRMAN GRIFFON: All right. That's right because Kathy told me Hans is

available, and he did one of them, yes.

Is that okay, Kathy, if we do that? We'll take a short break, 10 minutes, and then we'll --

MS. BEHLING: That will be fine. Yes, Hans is available.

CHAIRMAN GRIFFON: All right.

DR. MAURO: Which -- it's the -- in the back of the eighth set it's Bridgeport Brass, Harshaw, and Huntington Pilot Plant.

CHAIRMAN GRIFFON: And they're all in the back of the eighth?

DR. MAURO: And they're all in the back.

CHAIRMAN GRIFFON: Let's do those because we've got the availability --

DR. MAURO: Right, and by doing those keep in mind that most of the comments on real cases that deal with those are going to be addressed --

CHAIRMAN GRIFFON: I agree.

DR. MAURO: -- so by doing that we

may knock off 20 cases.

CHAIRMAN GRIFFON: And these each are at the point where you provided comments, NIOSH provided responses, and now --

DR. MAURO: All except for Huntington. I don't think we've received anything back.

MR. HINNEFELD: We haven't given you any comments on Huntington.

DR. MAURO: The Bridgeport Brass and Harshaw are very mature. We went back and --

CHAIRMAN GRIFFON: Okay, okay, so let's do those when we come back. Let's take 10 minutes and then we'll attack those first.

MS. BEHLING: I also wanted to just mention that I was a little bit late with this, but I did send out two file -- two white papers yesterday that will be part of this discussion, so, hopefully --

CHAIRMAN GRIFFON: Right, and I think we all got those.

DR. MAURO: I brought extra copies of that last one, the Bridgeport Brass one, that was prepared last night. In case anyone doesn't have it, I can hand out. I brought extra copies.

CHAIRMAN GRIFFON: Okay, we'll take 10. We'll put you on mute, I guess --

MS. BEHLING: Okay, very good.

CHAIRMAN GRIFFON: -- and keep the line on, Ted. Is that what we're going to do?

MR. KATZ: Yes.

CHAIRMAN GRIFFON: Okay, all right, be back in 10.

(Whereupon the above-entitled matter went off the record at 3:28 p.m. and resumed at 3:38 p.m.)

MR. KATZ: Kathy, are you with us and Mike?

MEMBER GIBSON: Yes, I'm still here.

MR. KATZ: I thought maybe you guys would be chased off by that terrible sound

that came on the line right after we ended the session.

CHAIRMAN GRIFFON: So Kathy and Hans or John, I don't know who --

DR. MAURO: Let me -- the first one I'd do is Bridgeport Brass.

CHAIRMAN GRIFFON: Okay.

DR. MAURO: Just let everybody know this is different than everything we've done before.

We actually did a mini-site profile review on three AWE site profiles and prepared reports with findings that were attached to the back, Attachments one, two and three of the eighth set of cases.

CHAIRMAN GRIFFON: Right.

DR. MAURO: So unlike what we've been doing before when we were looking at a particular case, we're not looking at a case now. We're actually looking at a -- we're doing a site profile review, for all intents and purposes.

On Bridgeport Brass we had a bunch of findings contained in our report. Our response came back from NIOSH regarding our findings, and just very -- just last night Hans prepared our response to that response. A few folks have it on your -- machine's great. If not, I have extra hard copies here of Hans' comments on your comments. If anybody needs them -- but with that I'll turn it over to Hans, and there's a story to be told here.

Hans, I don't know if everybody's familiar with Bridgeport Brass, but you may want to tell the overarching story and then get into the details.

MR. KATZ: Do we have Hans on the phone?

DR. MAURO: He's probably on hold.

CHAIRMAN GRIFFON: Kathy, Hans? Hans, Kathy?

MR. HINNEFELD: John, Bridgeport's all we're going to talk about?

CHAIRMAN GRIFFON: Maybe they figured 10 minutes -- regular board's 10 minutes is like 20 minutes.

DR. MAURO: I could take it. I could certainly get it started. Hopefully, we'll get him back, but let's --

CHAIRMAN GRIFFON: Why don't you give the background?

DR. MAURO: Okay.

CHAIRMAN GRIFFON: Or is there another one that you want to start with that Hans wasn't involved with that?

DR. MAURO: Yes, Hans has Bridgeport Brass and Harshaw, and I have the last one, Huntington, but I'm very familiar with --

CHAIRMAN GRIFFON: All right, all right.

DR. MAURO: I'll get it started; in fact, I carried it from the front end. Hans did the last round --

CHAIRMAN GRIFFON: Okay.

DR. MAURO: -- where he responded to the NIOSH comments.

DR. BEHLING: John, this is Hans. I just joined. I didn't realize you'd be back this quick.

DR. MAURO: Hans, I just gave some introductory comments regarding Bridgeport.

DR. BEHLING: Okay, so we're starting with Bridgeport instead of Harshaw?

DR. MAURO: Well, I'm going in the order in which they are in the attachments. The first attachment is Bridgeport, and you may want to tell -- I don't think everyone's familiar with Bridgeport and the story, so to speak. So you may want to take them to the top.

DR. BEHLING: I guess I'm going to also ask you, John, did you take some copies with you that you expected to distribute?

DR. MAURO: Well, it sounds like everyone's got them, though. Does everybody have Hans's file?

MR. HINNEFELD: No.

DR. MAURO: No? I've got a stack of them. Whoever needs one, take one. Anybody else?

CHAIRMAN GRIFFON: If you have enough, I'll take it. That's easier for me to read on the --

DR. MAURO: I want to get rid of them. I don't want to carry them back. By the way, the only problem some of you may have is that -- some of the figures are in color, but not in the copies.

So when you get the electronic version, which should be on your machine shortly if not already, you'll have the color graphs.

CHAIRMAN GRIFFON: I have color in my copies.

DR. MAURO: You've got my originals.

CHAIRMAN GRIFFON: Okay, Hans, we're turning it over to you.

DR. BEHLING: Okay, I guess I'll just follow the contents of the white paper just as a review. John mentioned the fact that we may want to just go over the site profile to some extent in explaining what the time periods were, et cetera, and that's under operational history 1.1.

Important to note were the time periods of operation from '52 to August of '62 for the Havens laboratory, and for the Aiken plant the period of operation was from '54 to '62. And, of course, we're going to be looking at those dates in context with one of the findings

Let me just briefly -- one of the things I wanted to summarize is that this is a composite of -- of several documents obviously, starting with the actual site profile or what's called the matrix for the Bridgeport Brass facility.

And then, of course, SC&A had the opportunity to review that particular matrix

and identified findings one through five. And those are summarized also under section one, page two and three. And you can briefly scan through those particular findings.

Obviously, this is just a summary of those findings and a more elaborate explanation's given in one of the appendices that's also enclosed in that document.

In -- on January 26, 2009, NIOSH issued a working draft response to the above-cited findings, which are also enclosed in this document as Appendix A, and I briefly will summarize this.

In response to Finding Number 1, NIOSH agrees with findings and will conduct additional analyses of data. To date as best as I know, we have not received those additional -- that additional data, and so I guess that issue requires some additional evaluation down the road. And so when we talk about conditional resolution, it's conditional on the issue that we have access to that

response, and then of course that the work group agrees with that response.

DR. MAURO: Hans, why don't you just give a brief summary of each issue so that everybody has context.

DR. BEHLING: Okay, I can read it, or you can read it with me on line on page two of the report.

Finding 1 states the site profile would benefit from additional analyses that demonstrate that the default intake rates adopted in Table 3-1 of ORAUT-TKBS 0030 of the exposure matrix, the claimant favorable for early operational periods in different job categories.

And to just add to that, there is just very little data for the earlier periods, and the co-worker model is really based on later time periods. And so the question arises can we transport in time and space information that may or may not necessarily apply to the earlier time period.

And as I say, the issue of Number 1 is that it is something that NIOSH agrees to look into and will come back to us with additional findings or analyses.

So, let me see -- where am I here?

Finding -- response to Finding 2, let me just briefly iterate what Finding 2 is. Finding 2 is the documentation from the 95th percentile estimate of the external doses are inadequate. In addition, it appears that the default 95th percentile doses adopted by NIOSH for non-penetrating and penetrating radiation are low by about a factor of two.

And that required a fair amount of explanation that you will see in the attachments there that involves basically the issue of statistics. Let me go and --

This particular response initially -- and John maybe you can supplement my comments -- this particular initial response or finding to two was done by Harry Chmelynski, who is our resident statistician,

and he believes that when you look at the data, and the data's really for a couple of years and they involve external radiation exposures as defined by a film dosimeter that was issued on a two-week time interval.

And what was done there was to essentially aggregate that data and then establish a 50th and 84th percentile value and then end up with something that was assigned as a value to people who may not have been exposed or who were not monitored during an earlier time period.

And it is SC&A's opinion that the 95th percentile value is underestimated by a factor of two, based on the fact the data are correlated, as opposed to non-correlated.

And really -- I'm not that familiar with the --

DR. MAURO: Hans, you know, let me take a run at it, and is Harry on the line?

DR. BEHLING: No, he's not.

MR. CHMELYNSKI: Yes, he's on the

line.

DR. MAURO: Harry, you know what I'm going to do, I'm going to give it in my layman's perspective of what was done as I understand it, and then you correct me because I think I've got it.

MR. CHMELYNSKI: Okay.

DR. MAURO: All right? I'd like to ask everyone to open up to -- sort of like in the middle of this handout is a page seven, and it's called Table 1, external gamma film badge results. Okay? If you have that in front of you. That's the data.

In other words, think of it like this. What we have is one through 46 on the left hand side is the name of a real person. We took the name out and put a number in. I'm sorry, the other way around, the other way around. I wasn't sure of the way you entered it.

All right, so we have the names of the people, A through R, and the numbers one

through 46 are two-week readings on a film badge. In other words, what we're looking at is for period number one, worker number B got 20 milliroentgen. Okay, so these are individual film badge readouts.

Now you say, okay, I've got all this data, this matrix of data. There's your starting point, and with that we want to build a co-worker model for all those workers that either have incomplete data or for all workers, who have not been monitored. In other words, one size fits all. How do we use this data to build a co-worker model.

Now one of the -- there are a lot of options that as we understand it were available to NIOSH to do that. One option is to collect all this data, make a big basket of data, plot it out on a graph paper, and come up with a log normal distribution, which it might follow, and pick off the upper 95th percent, two-week reading. In other words, this is the -- close to one of the highest

readings anyone experienced in one two-week period. Multiply that by 26 and get an annual dose.

That would be unrealistic, off the charts. In other words, no one's going to get every week, after week, after week, after week the upper 95th percentile two-week reading. So rather than do that, what my understanding is that NIOSH did is they took these numbers, and here's where I want to make sure I get this right.

You go into this and you sample -- you take a random sample of these data and you do that 26 times. This is a basket of numbers, say it's 200 numbers. You reach in, you pull a number out. Okay, you reach in and pull a number out, and you pull out 26 of those and you add them all up, okay? And then you've got -- okay, I've got one-year's worth of data. In other words, this is like one person's number, and you do that again, and you do that again, and you do that again until

you've got a thousand estimates of an annual dose, based on going in and pulling a number out. And you plot that, and on that you pick up your upper 95th percentile. That's called uncorrelated data. That is -- as if each one of these two-week readings were independent of every other one. That's what they did.

They said they didn't do it, and in the write-up they said, no, they did a correlated analysis, but the reality is we wanted to actually mail their number doing it just the way I described. So we believe this is an important finding. We believe that though you said you did a correlated analysis, you actually didn't. And the problem with that is as follows.

If everyone is treated independently, it doesn't take into consideration there are some workers who have a job with -- they have a job that gives them a high end. By doing it uncorrelated, you actually sort of average everything out, and

you don't want to do it that way.

We -- Harry went in and he went in and did a correlated analysis, and he could explain what that is, but what that does is take into consideration the fact that, no, there are some workers who week after week after week are going to have the high-end exposure, or higher exposure. And so you want to work -- what you really want to do is take the annual dose for each worker and plot those and pick off the 95th percentile from that, because that would take correlation into consideration. In other words, take the -- each worker -- you know, reach into the basket and actually say well we're going to look at Worker A, B, C, D. Each one will have his own annual dose and plot that.

So we did it that way and came up with a dose both for external penetrating and external data using the correlated approach, and we took it up with a factor of two higher.

Harry, did I describe that

conceptually correctly?

MR. CHMELYNSKI: That's very close to what we did, yes.

DR. MAURO: Okay. Anything about that that you want to clarify?

MR. CHMELYNSKI: Well, there's a difference here between the original analysis that we presented to NIOSH, which dealt with the pooled data alone. In other words, we tried to follow their assumption that we should use pooled data and then tried to reconstruct their numbers, and then we did it a different way.

Dose round what we did was actually build those individual dose estimates for each worker, and that's not using pooled data anymore. We're actually using the individual worker data, and even though some of them don't have data for the whole two years we were able to assign an annual dose to each worker.

And only the difference -- rather

than phrase it in terms of correlation and uncorrelated data, I think the better way to think of it is should data be pooled across all workers for analysis, or should we be looking at individuals?

And in our final tables here that's what we were doing was looking at individuals, finding that if you do it that way you get higher doses at the 95th percentile.

DR. MAURO: Now I think -- I mean, I think if you're comfortable with conceptually with what we've just described, there's an important difference between using -- well, we have a two-fold difference, and we believe that's the reason for the two-fold difference. We think that though the site profile states that they did in fact use correlated data, we don't think you did. We think that somewhere along the line you went and actually did it in an uncorrelated way, the way I just described it by the sampling method, because when we did it that way we got

your numbers.

So we think that's the problem. Now I think that your response --

Now, Hans, when we -- when this exchange took place, what's NIOSH's current position on this issue from the last go around?

DR. BEHLING: Okay, let me go -- You have to have it in front of you, John.

DR. MAURO: Okay.

DR. BEHLING: That is defined in --

DR. MAURO: What page -- what page should we look at in your report?

DR. BEHLING: It's Appendix A, and it's page two of Appendix A.

DR. MAURO: Page two?

DR. BEHLING: Yes.

DR. MAURO: Okay, here we go.

CHAIRMAN GRIFFON: Can I ask just a housekeeping question? Do we have this Appendix A in a Word document, because I want to cut and paste it into a named matrix.

MS. BEHLING: Yes.

CHAIRMAN GRIFFON: You do? Do I have that Kathy, or can you provide it?

MS. BEHLING: Yes, I'll --

CHAIRMAN GRIFFON: All right, that's just a -- but I just want to keep this in the main matrix, also.

DR. MAURO: Yes, unfortunately, right now what you have is a report.

CHAIRMAN GRIFFON: That's fine. Just for tracking, I want --

DR. BEHLING: John, do you have the hard copy in front of you?

DR. MAURO: Yes, everyone does, yes.

DR. BEHLING: Yes, as I said, the response, the NIOSH response is really defined in the summary findings matrix --

CHAIRMAN GRIFFON: Right.

DR. BEHLING: -- it's just a, you know, a column of statements, and you will -- I can read it for you if you can't put your

hands on it. In response --

DR. MAURO: You're good, okay. But I guess the point is that this is one of the places where we're still in disagreement. I think that NIOSH's position is, no, we're okay, and our position, no, I don't think you're okay.

CHAIRMAN GRIFFON: John, can you explain, or Harry maybe, on page 13 in the back the difference between -- and I'm just looking at this for the first time, too -- the difference between individual doses, annualized dose, and your 95th there versus your SC&A simulation with 100 percent correlation?

DR. MAURO: Harry, do you have a copy of Hans's report?

MR. CHMELYNSKI: Yes. I'm looking at the table now. Essentially, the pooled data columns are the original finding and that's as far as we went in our original analysis. The individual dose analysis was

added as part of this white paper, so that's just in terms of background where these came from.

Now the pooled data calculations, both of those used the log normal distribution that John described earlier, which is to take all the numbers that you saw in Table 1, put them on a curve, and come up with a distribution. And what you have is the distribution of two-week measurements, and then the question where we differ in the two columns here between NIOSH and SC&A is how we treated the distribution of the two-week measurements.

That distribution -- when NIOSH did it in their column, it says no correlation. They did theirs by picking 26 random numbers and taking the sum of them.

Now what I did was -- was essentially to take the two-week distribution and multiply it times 26, to get an annual dose, which would be the 100 percent

correlated idea that in every two-week period this worker would get the same number if he did the draw and, therefore, we could estimate his annual dose by multiplying by 26.

And the individual dose calculations are completely different. They're not based on pooled data. What I did there was I looked it on the column for each worker and said, well, here we have his dose totaled over x number of weeks, which may have been more than a year or less than a year, and I calculated what the implicit average annual dose was for that worker. That gave me doses for twenty some workers, which I could put on a curve and pick the 95th percentile from.

So the individual doses do not use the pooled data distribution that John described originally. They use the individual annual doses, of which I only had 20 workers, so that's -- I had to fit a curve and pick the 95th off of that.

DR. MAURO: So am I correct -- let

me see if I got this right. So if you used the individual doses and you plot them, you get a 95th percentile annual dose of 634?

MR. CHMELYNSKI: Right.

DR. MAURO: As compared to the 452 obtained by NIOSH --

MR. CHMELYNSKI: Right, and if were to 100 percent correlate it, which is either side that at the beginning may be too high because it's based only on the two-week data, we do get something much higher, which is twice as high as NIOSH.

So there's three different numbers here, and they sort of lie where we might think they would have come out.

DR. MAURO: Okay. Just to get the 634 again, so this is actually taking each person --

MR. CHMELYNSKI: And estimating his annual dose --

DR. MAURO: Okay.

MR. CHMELYNSKI: -- on average over

that period.

DR. MAURO: Okay.

MR. CHMELYNSKI: And then having a collection of individuals and taking the 95th percentile of those individuals.

DR. MAURO: Okay. So what we really have is that there are three different ways you could come up with a 95th percentile.

The approach taken by NIOSH that we believe is probably not claimant favorable. Whether you want -- now there are two other approaches you're presenting, one that gives you a number that's 634 versus 452 millirem per year versus the 955.

I guess -- here's the story. We do think there's a problem. We do think there's a problem with the current matrix. What the solution might be, you know, is to go back and take a look, and maybe you want to take a look of doing it in a correlated way and, you know, coming up with your own approach, but we're think you're too low.

MR. HINNEFELD: Okay, this is Stu Hinnefeld. I just want to ask Harry one more time for the column, the FTA simulation, 100 percent correlated --

MR. CHMELYNSKI: Yes.

MR. HINNEFELD: I think I've forgotten what you described. Those were -- could you describe one more how -- how you arrived at -- that distribution was generated?

MR. CHMELYNSKI: Well, okay. The -- if were to take the two-week distributions and pick off the 95th percentile, that would be what we would call the 95th percentile or the two-week data.

MR. HINNEFELD: That two-week period, okay.

MR. CHMELYNSKI: And if we had a 100 percent correlation, we would have 26 of those identical numbers in a column --

MR. HINNEFELD: Right, okay.

MR. CHMELYNSKI: -- and I -- and rather than putting them all in a column I

just multiplied one of them by 26, because they're all 100 percent correlated.

MR. HINNEFELD: So -- okay. So you took a two-week -- in other words you took --

MR. CHMELYNSKI: I took the two-week distribution, and I picked a draw from it and then I multiplied it times 26 to get an annual, yes.

DR. MAURO: When you say you took the two-week distribution, what do you mean -- in other words, we've got a bunch of numbers in that table. What do you mean by the two-week distribution?

MR. CHMELYNSKI: Well, the log normal with 1.45 and sigma 1.31 in that particular -- for the gamma dose, but it is the distribution you described at the beginning, which is to take all the Table 1 numbers and put them on a log normal plot and pick off the 95th.

DR. MAURO: Oh, okay, so --

MR. HINNEFELD: Oh, okay --

DR. MAURO: Okay, so treated each one, you treated each individual measurement on Table 1, plotted that --

MR. CHMELYNSKI: All pooled -- yes, the pooled data from Table 1 all on one distribution.

MR. HINNEFELD: All on the single frequency distribution, and then you --

MR. CHMELYNSKI: Right, and I think we both used that distribution. The only question is how do we use the pooled data distribution. That's how we differ in these two columns.

DR. MAURO: Okay. Well, let me see if I understand that. In other words, if I were to take all these numbers, all 200 of them, whatever they are and rank order them from top to bottom. Let's forget about log normals and everything, and I picked off the upper 95th percentile number, then multiplied that by 26, would that come pretty close to the number you got?

MR. CHMELYNSKI: Yes.

DR. MAURO: Okay, I would say that's overly conservative.

MR. CHMELYNSKI: I agree.

DR. MAURO: Okay.

MR. CHMELYNSKI: And that's -- and like I said, that one comes out the highest.

DR. MAURO: Okay. Now the way I would do it is I would take each person. Now we don't have that many people, but somehow get an estimate of --

CHAIRMAN GRIFFON: That's your first column --

MR. CHMELYNSKI: And that's the first column.

CHAIRMAN GRIFFON: Right, individual column.

DR. MAURO: I like that better.

CHAIRMAN GRIFFON: Oh, yes.

DR. MAURO: I've got to tell you until now in having this conversation around the table, I wasn't quite sure of which

approach was used. I like the 634 better, so it's not a factor of two, it's one point five.

Okay, and that probably also goes for the data, the non-penetrating. Good.

CHAIRMAN GRIFFON: I don't know that we're good, but --

DR. MAURO: We're communicating.

CHAIRMAN GRIFFON: I understand the issue, yes.

MR. CHMELYNSKI: I guess the point of this discussion, the reason why this ended up catching my eye in a sense was because when you read the original site profile or exposure matrix, it says that when we did the simulation we did take correlation into account.

CHAIRMAN GRIFFON: Yes.

MR. CHMELYNSKI: But yet I don't see where that was done. And the individual dose approach is a way of trying to bring the correlation back into it. It doesn't use the same distribution as you used, but it's

another way of looking at the problem.

CHAIRMAN GRIFFON: Can you explain why the -- why the beta dose for the individual doses doesn't -- those three numbers that we just discussed for gamma dose why they don't fall out the same way for the beta dose. In other words, your individual dose is lower than the NIOSH estimate?

DR. MAURO: That's a good question.

MR. CHMELYNSKI: I agree. It comes out -- well, actually, I'm not sure myself.

CHAIRMAN GRIFFON: Okay. I just wondered if there were an obvious reason or not.

MR. CHMELYNSKI: No, they are two different approaches --

CHAIRMAN GRIFFON: Yes.

MR. CHMELYNSKI: -- and that's how it came out.

CHAIRMAN GRIFFON: Okay.

DR. MAURO: I've got to say it's counterintuitive that the -- in the beta --

you know, you would expect that if you picked -- you have all these two-week numbers, you would expect a 95th percentile of those to always be higher than when you do -- you know, when you take a person for a year.

So I don't know why that's --

CHAIRMAN GRIFFON: You don't touch the final number, right? That's the 7-3-6 --

DR. MAURO: Oh, no, I'm sorry, I'm sorry. No, I take it back.

CHAIRMAN GRIFFON: That's way higher. It doesn't make sense to me. So that makes sense, that part.

DR. MAURO: It makes sense.

CHAIRMAN GRIFFON: The first column I was curious about.

DR. MAURO: So what we're really saying to non-penetrating radiation, it looks like your approach is fairly in agreement.

MR. CHMELYNSKI: Yes, they come out about the same.

DR. MAURO: So the real -- the only

problem area we -- this is good. The only problem area --

CHAIRMAN GRIFFON: There had to be a logical explanation for that why it differed so much for gamma and not as much for beta.

DR. MAURO: So that -- if the penetrating --

CHAIRMAN GRIFFON: I'm not sure it's intuitively obvious.

MR. SIEBERT: And this is pulling the data from Table 1 and Table 2?

CHAIRMAN GRIFFON: Yes, it looks like it.

MR. SIEBERT: The question I have, in Table 1 and Table 2 do the dashes mean no monitoring or no detection?

MR. CHMELYNSKI: I would -- I'm not sure. It means we had no data for that time period. Now why I'm not sure.

MR. SIEBERT: My question there is when you do an individual dose are you just taking the percentage of the years that they

were monitored and then multiplying to make it a full year --

MR. CHMELYNSKI: Yes.

MR. SIEBERT: -- because then if somebody's monitor it for a short amount of time but has more dose, they're going to be skewing the distribution?

MR. CHMELYNSKI: Yes, and that could be the effect here.

MR. KATZ: I think that's why you have these two different results.

MR. CHMELYNSKI: You get two different results, yes.

MR. SIEBERT: I look at, you know, Person M and he has less data than most but he has some of the higher results and he's probably pushing the distribution up if he was multiplied to make him a full year.

MR. KATZ: I agree. I think that's why you get these different results with beta and gamma. Just looking at the data it just makes sense.

MR. CHMELYNSKI: I guess the plots tell me that story here is there are some workers who routinely were in rather exposed jobs and others who weren't, and that's literally where I have a problem with pooling the data when you have that situation.

DR. MAURO: And now we're at a point where it's really a judgment call. That is, we know that there are people -- some people -- that got substantially higher doses than others. You know, how do you want to build your co-worker model.

You want to make sure that everyone -- no one is underestimated. Certainly, the non-correlated approach you're going to run into a problem. Correlated approach and how you process this data, sort of the kind of questions you just asked Scott, is something you've got to think about and decide what is the way to do it so that at the end I have a degree of confidence that everyone is going to -- no one dose is going to be underestimated,

because that's really our goal. You want to make sure that no one is underestimated.

Right now I think -- the problem quite frankly wasn't as serious as I thought with a dose factor of two. It clearly is less than that, but I still think there's something that has to be dealt with here.

CHAIRMAN GRIFFON: Do we know -- I mean, what percentage of the workers were monitored at Bridgeport? I mean, you have A through R here, but how many -- how many people are going to rely on co-worker models entirely?

DR. MAURO: I don't know.

CHAIRMAN GRIFFON: I don't know either.

DR. MAURO: Hans, you want to move on to the next issue?

DR. BEHLING: Yes, if we're through with that one. Issue Number 3. Issue Number 3 centers around the concern regarding the ability to reconstruct extremity doses, skin

doses to the extremity, but perhaps also skin doses to other parts of the body that were perhaps not properly monitored by way of a film badge that's worn on the chest and shows as a whole body exposure.

And we do know the fact that these people were probably not given anti-c's -- anti-contamination clothing, nor were they probably frisked on the -- when they left a radiologically controlled area, et cetera. So the question arises can we rely on a film badge data that's a film badge dosimeter that was worn on the chest to account for skin exposures to the extremities or perhaps skin exposures to other parts of the body where the potential exists for a skin contamination, clothing contamination, which would obviously not be picked up.

And of course the response on the part of NIOSH was that while they agreed that this potential problem exists, it doesn't -- it's not like it could be one that would

happen frequently, and they also feel that the decision on how to adjust exposure in a claimant favorable manner is left to the dose reconstructor's judgment.

And we feel that's leaving too much responsibility on the shoulder of the dose reconstructor and we believe we've done it in other instances where we realized that exposures that are being monitored by a chest location is not necessarily going to give you the proper exposure to other parts of the body. We found out in the case of people who work in glove boxes, et cetera.

And while NIOSH acknowledges this potential deficiency but believes that a judicious approach on the part of the dose reconstructor is adequate, we believe that some guidance is needed here and can be in the form of providing at least a strong statement that says when you have a cancer that involves exposure to the extremity or perhaps to some other body part that may have been exposed to

skin contamination or clothing contamination, some additional guidance is necessary here.

And so at this point it is something that we feel can be resolved, but it will require some additional guidance on the part of NIOSH to introduce that into the matrix.

DR. MAURO: I'd like to add a little something, too. The issue of -- ultimately, we're really going toward OTIB, I think, 17, which is your non-penetrating radiation protocol.

There are two issues here that I think they're universal. One is that you really can't use film badge, non-penetrating to be a good indicator of what different parts of your body might have experienced.

It's your exposure at a distance from data basically, and, you know -- and I guess we're concerned that a person's hands, arms, forearms, neck, especially if you're in a situation where there's a real potential for

air particulates to deposit on the body. This issue has come up on Nevada test site, and it's come up on a lot of the AWE facilities where we know there was a lot of airborne particles being generated.

And right now I think that this is -- this issue -- I think NIOSH has a pretty good handle on being able to adjust or account for the fact that maybe the hands were closer to the source than the chest, and there were adjustment factors.

We did that with the -- what do you call it -- the glove boxes. There was a factor of 1.4 of two or something like that -- adjustment, which seemed to make sense. You know, that wasn't done here, but of course this isn't a glove box.

But the place that we're really -- I'm not quite sure how this is going to be resolved is particles landing on a person and kind of a localized dose it could give, because I had a case that a person had cancer

on the neck and in the ear, several cancers. And you say, you know, you can almost conceive of particle deposition in that area, and given a localized dose -- and if you can't discount the possibility of that kind of scenario, you know, what do you do?

You know, he's wearing a film badge over here, and you know the kind of job he had, he could very well have gotten some -- he was a guy at Paducah, could easily have gotten some skin contamination.

CHAIRMAN GRIFFON: That's, yes. That's a difficult one, isn't it because if you --

DR. MAURO: Yes.

CHAIRMAN GRIFFON: -- then you're almost to a point where, I mean, there's not going to be records necessarily for every particle, you know?

DR. MAURO: I've got to -- you know, I'm just putting it on the table. This is a very difficult problem.

CHAIRMAN GRIFFON: Right.

DR. MAURO: But, nevertheless, I think it's real. I think it's a challenge. What do you do? I know if I was working at Paducah for many, many years, knowing that I was dealing with a lot of airborne particulates being generated, sometimes you could even see them, and I came down with multiple cancers around my neck and ear, right where the particles might stick, increases, I'd say, you know, you've got to tell me why it wasn't that that didn't cause my skin cancer. That would be me, if that was me.

I think that we -- all of us have an obligation to answer that question.

MR. HINNEFELD: You know, that's come up before.

CHAIRMAN GRIFFON: Yes, we've talked about that.

MR. HINNEFELD: I don't have anything better -- to say than last time.

DR. MAURO: Where we left it the

last time was to try to parse sites, where that was a real concern. That is, it really could have happened. Nevada test site was agreed, yes, that could have happened there because of the nature of the contamination, and many of these uranium --

MR. HINNEFELD: Uranium plants that closed operations.

DR. MAURO: -- where they were -- especially where they were machining uranium, where there were airborne particulates settling. Those are two places.

And I know that, for example, at least with regard to uranium, it's pretty straightforward to figure out, you could probably place an upper bound on what the dose might be under the skin where a small particle of uranium might land. You run the bar skin. We've done some calculations, and of course you have to ask how often does it happen.

CHAIRMAN GRIFFON: Right.

DR. MAURO: I don't know the

answer, but I think we have an obligation to deal with this.

MR. HINNEFELD: You know, a decision like that almost has to be kind of a policy decision; don't you think? I mean, there's -- there is no evidence --

CHAIRMAN GRIFFON: That's what I was just thinking, yes.

MR. HINNEFELD: There is no evidence that it happened --

DR. MAURO: Right.

MR. HINNEFELD: There is no evidence that it didn't happen. We can't expect every -- it would almost have to be essentially a policy decision that because of that this is what we will do and everybody gets this for skin cancer. I mean, that's what would have to happen, I think, rather than try to find out, you know, through -- I don't know of any possible way to research this and get an answer.

So, okay, well, I've started

chatting with -- about that back at the office. I'll try to get some more attention on it and just see what people think. I've already gave my opinion, which I understand is exactly what you're saying. You know, I hesitate to go down that road because I don't know where you stop, and so you just have to have a policy decision.

CHAIRMAN GRIFFON: Yes.

MR. HINNEFELD: This is where -- this is what you do.

DR. MAURO: Hans, next one.

DR. BEHLING: Yes, the next one is -- okay, the initial finding is stated as follows. The site profile would benefit from a quote leave one out analysis of the data.

And since we have Harry Chmelynski on the phone I would actually want to defer to Harry's assessment of that particular finding. I will state that NIOSH has agreed that additional analysis of this finding is necessary and will be provided upon

completion; however, since probably most of the people here have not heard of this particular technique I will ask Harry, if he's still on the phone, to perhaps give just a brief explanation of what the leave-one-out analysis really is representative of.

Harry?

MR. CHMELYNSKI: Okay, the leave one out is a rather simple version of resampling kind of approaches to determining how uncertain the answers are. In particular, since we're dealing with co-workers who may have missing data, eventually this motto would be applied to.

I was thinking that what we ought to be doing is looking at some examples of -- well, if we have some workers who -- we actually have them today is that we know who they are, but if we left them out and used the data set to build a co-worker model and then went back and see how it worked for those individuals that we left out, we would have an

out-of-the-sample kind of measure of the effectiveness of the co-worker model.

And this in general is a good technique for -- for cases where we would like to know how the model works on cases where it hasn't -- where we haven't been able to see the data. In other words, we always know when the person was in the database that we built the model with, it's not going to be that bad.

But when you use the model to predict some people who are not in the database, it may be completely different. And this is a way of simulating that kind of analysis, to leave them out and don't use them to estimate the model.

MR. HINNEFELD: Is that person randomly selected, or do you systematically leave somebody else out?

MR. CHMELYNSKI: Well, generally, you -- yes, generally, you systematically go through and leave each one of them out, one at a time --

MR. HINNEFELD: Leave all of them out.

MR. CHMELYNSKI: -- and see how it works, but it's not necessary you run it that often. You can only leave a sample of them out and build, you know, 10 models with 10 different subsets of the data and see how the left-out person is predicted.

DR. MAURO: So you get an array of -- for example, right now we have an estimate of the 95th percentile using correlated data, whatever that dose was, 635.

MR. CHMELYNSKI: Right and we used all 18 individuals when we built that log normal model that is underlying all of this.

DR. MAURO: Right. So you're saying let's do 18 of these by leaving one person out each time and see how different that 635 is?

MR. CHMELYNSKI: Yes, see how it does on the one we left out.

DR. MAURO: Got you.

MR. CHMELYNSKI: And to tell you the truth what happens is when you leave out the high guy you often find, wow, gee, the model doesn't really know he's there now, and the model doesn't work very well.

So I'm just warning you that this can lead to some -- some situations where you're not so confident that the model's working well anymore. That's why I suggested it might be something that should be adopted as a more general principle, rather than just here for Bridgeport.

DR. MAURO: Well, this goes towards your question, Mark. If you only have a limited number of people that have been monitored but there are lots of people that could have been exposed -- okay, let's say like we have 17 people that were -- whatever it is -- but we know that there were 200 people that might have been exposed. I'm making this up.

This is a thought problem more than

anything else because it's really basically we're putting the time back in your court again relating to this concept.

So what happens is that if this exercise, by leaving one behind, shows when you do that, the results change by an order of magnitude, the 95th percentile. Again, I'm making this up.

What this means is you might not have sufficient data to build a co-worker model, especially --

Now if it turns out all these 17 people -- there are only 20 people and we've got 17 of them, well maybe they're fine.

But if you've got a lot of people, that means it's very possible there are many people -- that's what the leave one behind would tell you. There might be many people out there that could have gotten higher doses than anyone that's even in this table.

So I guess that's -- I mean, it's almost like common sense argument. Yes,

that's true. And I think that your question is very important.

CHAIRMAN GRIFFON: But it may not be a completely random 20 either, you know? Like if it's the highest exposed, so that changes --

DR. MAURO: That's true. That's true, too. I agree with that, a hundred percent. But there's a lot --

CHAIRMAN GRIFFON: Right.

DR. MAURO: And it's a good place to evaluate many issues that we've been struggling with for long time, this one particular site, and it will go toward so many things that we've been talking about.

CHAIRMAN GRIFFON: So -- by the way, I've been keeping actions here for the last two. That one, Stu, I did put down an action that NIOSH will follow up with staff regarding potential policy on this hot particle type question.

MR. HINNEFELD: Yes.

CHAIRMAN GRIFFON: And then for this one I just put it as a continuation of the NIOSH response that you're going to further assess this. Is that -- that fair?

MR. HINNEFELD: I think that's one of these we did.

CHAIRMAN GRIFFON: Yes.

MR. HINNEFELD: Well, I mean, I guess. I mean, it can go in a couple of places, one is the continuing open, unresolved issue having to do with how the distributions were coded.

CHAIRMAN GRIFFON: Right.

MR. HINNEFELD: So that is clearly unresolved, there needs to be additional discussion on that issue, but it seems like the leave-one-out analysis is perhaps beyond that, as well.

And it sounds like whatever we can learn about the size of the radiological population during the time that they monitored -- they probably didn't monitor 18 at a time,

in fact, would be also instructive about the amount of confidence you can have in your co-worker model, which of course is obvious.

DR. MAURO: Right.

MR. HINNEFELD: All right.

DR. MAURO: Hans, we've got one more, the last one, Finding 5?

DR. BEHLING: Yes, this is -- this is going to be a little more time consuming because the actual, initial finding is quickly resolved. The initial finding stated the following, that it appears there is a misstatement in the site profile, in the actual surface contamination level used to divide inhalation exposure associated with the residual radioactivity about a hundred fold lower than the stated value of 23,460 dpm per hundred centimeters squared.

Let me just correct that. That is probably the correct value; however, what is really is nothing more than a typographical error that occurs in the TBD on page 33. In

Table 5.1, based on that particular surface contamination level of 23,460 dpm per hundred centimeters squared, NIOSH divides an airborne level for respiration and then divides a daily intake.

And I calculated that value. It turns out to be 6.9 picocuries per day, if you average over 365 days, which is what basically you need to do. And that number is correct actually in the text of the matrix, because I'm looking on page 33 of the Bridgeport matrix and it says and I'll quote "multiplying the estimate air concentration by an air intake rate of 2,400 cubic meters per work year results in a calculated uranium inhalation intake of 2,540 picocuries.

And if you take 2,540 picocuries as an annual exposure that's based on 2,000 hours of work at 1.2 cubic meters per hour inhalation rate, you end up with seven picocuries per hour, which turns out to be the number that I also derived independently.

And if you look at the actual value in Table 5-1, you have 6.6, and that would have been correct if you would have started there, but you have in there 6.66, E^{-2} and hence you're off by a factor of 100, and I believe that's nothing more than a typographical error when you view that in context with the statements that were written in the text of 2,540 picocuries per year that is based on 2,000 work hours and 1.2 cubic meters of inhalation per hour.

So it's nothing more than a typographical error, and the only thing you need to do really is to correct the values in Table 5-1 and convert 6.6 E^{-2} to something like seven picocuries per day as the value.

And I think I explained that in my write up, but here comes the issue here that I want to spend a little time with. If you go to my white paper and look at Section 3.0 on page four, I have a topic called the new issue concerning Finding 5.

And I briefly go over this whole issue of the 6.66 E^{-2} picocuries per day as an error, and I recalculate that value as you see at the bottom of the page and say the real value should have been seven picocuries per day. But that's really not the issue.

What I was concerned about is the following. We start out with a single value, a single measurement, and that is a 23,460 dpm per hundred centimeters squared surface contamination that is assumed to be all alpha activity. And then you convert that into -- by multiplying times a hundred you get the activity, surface contamination activity per square meter, and for -- for deriving the air concentration, NIOSH assumes a re-suspension factor of E^{-6} per meter.

Now that's a value that has been used in the past in one of the TIBs, and I was questioning that, and I questioned that in my review of the -- the OTIB, and I'm going to be looking at this again in context with this

particular write-up here.

If you look at the write-up that I have under Section 3 you will see that I had -- I had reviewed OTIB-70 and provided data that suggests that for a facility that has not been decontaminated but simply had stopped doing that work and is now doing other work, the potential re-suspension factor can be as slow as minus three, to minus four. In effect, a hundred to a thousand fold higher.

And one would now, for instance, question whether or not my assessment of that situation is correct, but let me go down and say -- let's go a step further and look at what was quoted in this particular matrix for Bridgeport, and you will see that in a quotation that is on page five of my write up where they talked about the 1961 assessment that is based on the 23,460 dpm per hundred centimeters squared contamination that is now by way of re-suspension factor converted into an air concentration that turns out to be

roughly 2.3 dpm per cubic meter, and if you convert that into picocuries, in essence it is one picocurie per cubic meter.

That's basically what you -- you might want to just jot that on the margin. One picocurie per cubic meter is the air concentration that is derived using 23,460 dpm per hundred centimeters squared and applying a re-suspension factor of E^{-6} , okay?

So that is our starting point for drawing a comparison that says do we really trust the E^{-6} re-suspension factor in converting a surface contamination into an air concentration.

And the reason that I raise that question is if you read that particular quotation that comes from page 32 to 33 from the Bridgeport matrix -- let me read it for you, in case you don't have it in front of you.

In the matrix, the following statements are made on page 32 and 33. "The

documentation reviewed indicates there was residual contamination outside the listed operational period of 1954 to '61," and then in parenthesis, "specifically '62 through '76."

It goes on "to estimate internal exposure from residual activity, this analysis assumes that the median uranium exposure was associated with uniform contamination of the Adrian plant to a level of 23,460 dpm per centimeters squared. This was the maximum alpha contamination level fixed in total measured in the 1961 survey of the Adrian plant.

Using a re-suspension factor of E^{-6} per meter results in an air concentration of 1 E^{-12} microcuries per ml, which is consistent with a higher 1976 air concentration measurement," and then they define that measurement in 1976 as 33.2 percent of the maximum permissible concentration of 3 E^{-12} microcuries per ml prior to the

decontamination.

Okay, these are some weird numbers here to convert, but when you convert 1 E^{-12} microcuries per ml, it turns out to be the same as one picocuries per cubic meter. So 1 E^{-12} microcuries per ml is equal to one picocurie per cubic meter.

And as I stated earlier, this was derived in 1961 from a surface contamination level and then applying the 1 E^{-6} re-suspension factor.

And the phrase that caught my attention was that that particular 1 E^{-12} microcuries per ml were one picocurie per cubic meter, in 1961 is actually less than a measured air contamination measurement that was taken 15 years later in 1976.

And I go on to explain that particular issue on the bottom of page six and on to the next one. If you -- first of all, there was a mistake in that quotation because it's not 33.2 percent of the maximum

permissible concentration of 3 E^{-12} microcuries per ml, it is, in fact, and I included the particular document in Appendix D of the document where that came from. It is actually 5 E^{-12} , so in essence what it really comes down to the bottom line is that the air contamination level that is derived in 1961 from a surface contamination using the E^{-6} re-suspension factor is actually only 60 percent of a measured air concentration that was taken in 1976, 15 years later.

And what of course -- that is obviously something that you cannot assume is consistent, based on the simple fact that up to this point in time in OTIB-70, NIOSH has assumed that you have a daily source depletion rate of one percent.

So you actually over 15 years you increase the air concentration for one picocurie per cubic meter to 1.66 picocuries. In other words, you increase it by 66 percent, and, of course, you wouldn't expect

that based on source term depletion, which NIOSH has insisted is -- it can be assumed to be one percent per day. In fact, 15 years later no matter what you started out with you would expect nothing.

And so here you have a situation where you have a derived air concentration that makes an assumption of a re-suspension factor in 1961 that is less than a measured air concentration 15 years later that is 1.66 times higher.

And so what I've basically stated is that you can only reconcile that by one or a combination of two things. Either your re-suspension value of 1 E^{-6} is wrong, or you have basically a no depletion at all -- and or. And my gut feeling is obviously the re-suspension factor is possibly off by a three orders of magnitude, and you have a depletion factor that's considerably less than the one percent that OTIB-70 predicts.

And rather than discuss this, I

think we can defer to the resolution of OTIB-70 in my review -- OTIB-70 on those two very issues. But here's a classic case where we look at the application of OTIB-70, which is designed for post-operational periods, and realize it simply cannot match the actual numbers that we have to work with here, and here's a classic case.

I'm not sure if everyone followed the issue here that is defined as a new finding, but I think it's an important one, especially in context with OTIB-70, which has yet to be discussed.

MR. HINNEFELD: This is Stu Hinnefeld. I followed the issue. It's well described, so first we just saw this.

CHAIRMAN GRIFFON: And I'm going to capture it in a remaining issue.

MR. HINNEFELD: Well, I mean, we've got to resolve all these, anything that's not completely resolved.

CHAIRMAN GRIFFON: Yes, yes. Back

to Hans's first point though, I sort of had two issues there, and the one of the six point six to the minus two value, and if it's just a typo that's fine, but I'm wondering is that number used in a --

Of course, the question is was that value inadvertently put in some workbook and carried through any dose estimate. That's the real -- that would be a concern, you know.

DR. MAURO: We have some dose reconstruction for cases, but I don't know whether it was residual period --

CHAIRMAN GRIFFON: So, I guess I'd ask that.

DR. MAURO: You'd find that out.

CHAIRMAN GRIFFON: Yes, that would be followed up on that one.

DR. MAURO: That's important, because it's --

CHAIRMAN GRIFFON: And then the other part, I think we got the 61 versus 76, and that was a very detailed and good

explanation of that, so NIOSH obviously just got this today and we'll follow up on that.

Is that the last --

DR. BEHLING: Yes, that was the last one.

CHAIRMAN GRIFFON: I'm not sure we're going to get to the other ones.

DR. BEHLING: Earlier this morning I heard that people would want to necessarily break up as early as 4:30, and I guess we're --

CHAIRMAN GRIFFON: Right, right. That's what I was just about to say, Hans. I'm not sure we can take on Harshaw right now.

DR. BEHLING: Yes, that's -- that's my question.

CHAIRMAN GRIFFON: Some of us do have to get flights and stuff, yes, and we're fading here, too, you know.

DR. MAURO: By doing this case, this high profile --

CHAIRMAN GRIFFON: Yes.

DR. MAURO: -- basically, we just did every Bridgeport Brass case.

CHAIRMAN GRIFFON: Well, that's why we did these -- right, yes. I thought it was a good idea.

DR. MAURO: It was a very good idea. It was your idea.

CHAIRMAN GRIFFON: Thank you. Thanks, Hans, that was good. I mean, I'd like to do Harshaw because I know you're available on line, but I don't think we have the time or, you know --

MR. HINNEFELD: Energy.

CHAIRMAN GRIFFON: -- energy left, yes, yes, so --

DR. BEHLING: Well, I'll be here next round --

CHAIRMAN GRIFFON: Okay.

DR. BEHLING: -- and we can get started on Harshaw.

CHAIRMAN GRIFFON: It's good to hear you again. We haven't heard you in a

while, you know?

DR. BEHLING: The other thing that I would like to do is I realize we got these white papers to you in just only yesterday, I believe, Kathy sent them out, and sometimes it's very difficult to explain complex issues when no one's had really an opportunity to read them.

Now that we can postpone the discussion for Harshaw for another meeting, perhaps everyone at least will have the benefit of the time to read the white paper and become at least familiar with some of the issues and to be in a much better position to discuss when we have the opportunity next time.

CHAIRMAN GRIFFON: That would be great, yes. Okay, anything else on Bridgeport for now? I think we sort of got the next steps. Everybody's clear on that. I think we're ready to adjourn.

Did we get any responses on the

other subcommittee meeting date for May 6th?

MR. KATZ: We're putting on a Federal Register notice, so Mike -- Mike, are you still on the line?

MEMBER GIBSON: Yes, I'm here.

MR. KATZ: Are you good for May 6th for a teleconference for three hours, from 11 to --

CHAIRMAN GRIFFON: Two.

MR. KATZ: Two?

MEMBER GIBSON: Yes, that looks good.

MR. KATZ: So, we'll do it -- I mean, whether the other --

CHAIRMAN GRIFFON: We're going to talk about that hundred case report and the selection criteria, and that will be it. None of the matrix stuff, none of the cases.

Okay, so we've got Mike and Wanda, I believe, said she was okay with that.

MR. KATZ: And I sent an email to John and Bob.

CHAIRMAN GRIFFON: And Brad's okay. Okay. May 6th from 11 to one.

MR. KATZ: Yes.

CHAIRMAN GRIFFON: Eleven to two, I'm sorry.

MR. KATZ: By phone.

CHAIRMAN GRIFFON: By phone, yes. And I guess we're adjourned for today. Thanks everybody.

(Whereupon, the above-entitled matter was adjourned at 4:42 p.m.)