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

+ + + + +

ADVISORY BOARD ON RADIATION AND
WORKER HEALTH

+ + + + +

SUBCOMMITTEE ON DOSE RECONSTRUCTION

+ + + + +

TUESDAY
MAY 21, 2013

+ + + + +

The Subcommittee convened in the Zurich Room of the Cincinnati Airport Marriott, 2395 Progress Drive, Hebron, Kentucky, at 9:00 a.m., David Kotelchuck, Chairman, presiding.

PRESENT:

DAVID KOTELCHUCK, Chairman
BRADLEY P. CLAWSON, Member
MARK GRIFFON, Member*
WANDA I. MUNN, Member*
JOHN W. POSTON, SR., Member*
DAVID B. RICHARDSON, Member

ALSO PRESENT:

TED KATZ, Designated Federal Official
BOB ANIGSTEIN, SC&A*
KATHY BEHLING, SC&A*
ELIZABETH BRACKETT, ORAU Team*
GRADY CALHOUN, DCAS
DOUGLAS FARVER, SC&A
JENNY LIN, HHS*
STEPHEN MARSCHKE, SC&A*
JOHN MAURO, SC&A*
MUTTY SHARFI, ORAU Team*
SCOTT SIEBERT, ORAU Team*
MATTHEW SMITH, ORAU Team*
JOHN STIVER, SC&A*

*Participating via telephone

TABLE OF CONTENTS

P R O C E E D I N G S

9:00 a.m.

MR. KATZ: This is the Advisory Board of Radiation Worker Health Dose Reconstruction Review Subcommittee, and let us begin with roll call. We're speaking to a number of sites; but, for all these sites we're speaking to, we don't have any Members with conflicts so we don't need to address their conflicts for this.

So let's go with beginning with Board Members in the room first.

(Roll Call.)

MR. KATZ: Let me check and see do we have any members of the public on the line?

(No response.)

MR. KATZ: Okay, then. The agenda is posted on the website and should have been circulated to all of you staff and Members. Just a slight amendment. In addition for the second set of items, which is SC&A DR review, etcetera, findings checklist, in addition to

the blind case selection discussion, we also will talk briefly about Set 17, doing case selection for Set 17. And then that's the only change for the agenda. The rest will go as it's indicated, I think.

And, Grady, you're on.

MR. CALHOUN: Okay. Yes, I didn't get that assessment put into the folder until this morning. However, I did email it to everybody with a CDC email address yesterday. And, basically, what we've got is we didn't make a whole lot more progress on these. We only completed six since the last time we talked.

Basically, just an overview of what we've got in the pipes. We've got 97 selected for review. We've completed 32 blind DRs. That leaves 65 that we have in other various stages of completion. The number of DRs that we've found where there was actually a switch in compensation decision in that ORAU's determination was wrong, we did have

one of the six where our DCAS HP came up with a compensation decision that was different. The follow-up few, a review of those found that our guy was wrong and he erred in his internal dose calculation, and ORAU dose reconstruction was correct.

The big thing that we're finding, and we're actually getting stuck and you guys touched on it a little bit last month, is the tools. We've had some real difficulties getting the tools that ORAU uses available to us. And, oddly, the issue was computer security, and NIOSH and maybe even CDC was having issues with not only the Monte Carlo type programs that we were using but the way the programs were accessed.

We believe we've got that one solved. Last -- not last week because I wasn't here last week. Two weeks ago, I believe, we started receiving the tools over on our side, and we're in the process of testing them and make sure that they can be

run from our side. Once that happens, we're going to have a training program, so we get trained on the same as ORAU is, and we're going to make that available to people here that are doing blind DRs, as well.

So it's in process right now. But I think that we've got the biggest hurdle handled, as far as getting the tools over to our side.

MR. KATZ: So will you just notify us when -- I mean, I'm assuming, Doug, you'll want this training.

MR. FARVER: Well, we'll just have to discuss how we're going to work it out with the blinds. You know, we've talked about several different ways, so I guess when we get to that --

MR. CALHOUN: And I would hope, you know, and I may be wrong, but I would hope you would be able to access that remotely. There was some initial talk that we would only be able to set up stand-alone PCs or laptops

at our facility, but I think that they've overcome that, but we'll see and I'll certainly let you know.

MR. FARVER: That would be great. And even if you just want to load a laptop with them, that's fine, too. However it works, I'm pretty --

MR. CALHOUN: One of the bigger issues was that the way the tools work is they go out and, you know -- Scott, you can speak up if I'm talking out of school here -- but I believe they'll go out and grab what's the most current version. And so that's one way that we get version control, and stand-alone may not be able to do that as well. But that was one of the big security issues is they don't want you simply go out and grab something, I guess. And I'm not smart enough about that kind of thing to even know that that's an issue, but I'm pretty sure that was it.

MR. FARVER: Okay. Well, we'll

work something out, either we can do it through the CDC network or if I come up there for a day or two. I figure I just want all the workbooks --

MR. CALHOUN: Right.

MR. FARVER: -- all the cases, then go back, so . . .

MR. CALHOUN: Yes, we'll figure it out. And I don't think it's going to be, you know, months. You know, I don't think -- I think it's going to be sooner than that.

MR. KATZ: Okay. Because months would be a problem because SC&A has through December to get these six blind dose reconstructions done.

MR. FARVER: So it's easier just for me to close here and run the workbooks.

MR. KATZ: Yes, just keep us abreast of whatever will end up being most expedient, and SC&A will jump on it as soon as they can. Oh, welcome. Come in and set up. You're covered on the phone right now. And

then as soon as you're ready, let us know and we can trade horses.

For the court reporter on the phone, so your colleague is here in the room, but he needs to set up.

COURT REPORTER: I'll hang on for a while.

MR. KATZ: Thanks.

MR. CALHOUN: That's all I have as far as update.

MR. FARVER: You mentioned the one case that your numbers were significantly different than the ORAU numbers.

MR. CALHOUN: They were.

MR. FARVER: Could you talk about that case? Because I think you were 18 percent PoC, and they were at 57 percent PoC. That's a pretty significant error.

MR. CALHOUN: It is. It's a very significant error, and I don't have all of the details, other than, because there was very little written down here in this form. But

just from talking to the people, it just appears that they were actually positive for missed internal doses recorded in his dosimetry reports that were just not entered somehow.

MR. FARVER: See, that's the one that bothers me because if you can be at 18 percent and not really know that you're that far off, actual PoC is 57 percent, that's a big difference.

MR. CALHOUN: I'm with you. And the deal, too, is that we don't have, like ORAU does in the normal process, we don't have the multiple layers of recheck. And in this one, we had the one comparison of the two, and our second person said that's wrong. You know, we've talked about putting a second layer in there, but we just don't want to do that. It's too time consuming to have another person do another DR on top of that. So I'm hoping that the tools may help this, but I just don't know if it will or not.

MR. FARVER: I noticed it on some of the other cases.

MR. CALHOUN: Yes, I got that written down as an observation, too. I can tell you what they were, though.

MR. FARVER: The numbers are four and five percent.

MR. CALHOUN: Right, right. I got those down here, and I went through. And that's an issue, too, and I don't know if the timing of that -- you know, we just added that block in the QA form to list the total PoCs for both cases, and I don't know if these were completed before that was added or not but that's irrelevant. Let me find out here.

MR. FARVER: Because for the ones that the PoC is listed, it's like one person is at 4.6 percent and another is at 4.9. They seem to be relatively close, except for that one case where it's 18 to 57.

MR. CALHOUN: Yes. Let me tell you here. Hold on. Okay. I'm not going to

list case numbers, but one, ours was 12.12. Theirs was -- and this isn't, this is one that wasn't listed. Theirs was 37.77. One was 4.9 and one was 4.66, like you said. One was 4.17, and one was 5.32. Another one, we got 16.48 and they got 4.96. And another overestimate was 28.45, and they got 0.52. That's something that we'll make sure that our guys start adding that to the QA form afterwards. The person who does that review can make sure that that's added into there.

MR. FARVER: You mentioned the one was about 12 percent and the other was 33 percent.

MR. CALHOUN: Yes.

MR. FARVER: That's also quite a range.

MR. CALHOUN: Yes.

MR. FARVER: Is there any kind of trigger in there that if it's such a large spread you say, maybe we should go back and look at this?

MR. CALHOUN: I'd have to look at that one in particular, but not so much because it's just a degree of overestimate, you know.

MR. FARVER: By someone or underestimating by someone.

MR. CALHOUN: The only time it really bothers me is if there's something that's close to 50 percent or one is a different compensation decision than the other one.

MS. BEHLING: This is Kathy Behling. Can I also ask a question?

MR. KATZ: Sure.

MR. CALHOUN: Please do, Kathy.

MS. BEHLING: I'm wondering are you finding that this random selection process for these cases is working well for you? Because what I'm seeing also on the report that was sent out yesterday, a lot of the cases, as you said, are the lower PoCs, and I've questioned if, you know, we do know that

we can easily screen based on cancer, job description, and years of employment, and you're likely to identify cases that will require a best estimate approach, as opposed to maybe an overestimate or an underestimate. And the reason I would hope that you're going to capture all of those different approaches is because, depending on the approach used, you're going to be using different protocols. For example, if you are, if you're overestimating a case, likely, for your internal, you're going to use something like an OTIB-2, which would be your hypothetical internal intake, versus using an IMBA or CADW program. Same with external. Perhaps, like a case that I thought would come up somewhere around 4 percent, I know, for me, I would likely use, perhaps, for the external an OTIB-8 or OTIB-10 procedure, which is your external overestimate for film and/or TLD versus using an OTIB-12 procedure, which is Monte Carlo.

And so to ensure that you're

looking at all of the different procedures and all of the different approaches used, I'm still wondering if you couldn't go to something of a screening process to look at these blinds.

MR. CALHOUN: We could. I don't think that we're considering it at this point. I think we're happy with the random selection and what we're doing right now. I don't think that that's on anybody's radar as having, wanting to change that because they're all important, not just the ones closer to 50 percent. But they're all important, so this gives us a flavor of everything and all the different cases and all the different sites.

MS. BEHLING: And I agree with that, provided this selection process is identifying some of the best estimate cases because, obviously, they don't make up a large percentage of the cases that are out there. And I just want to, I would hope that this random process is going to select enough cases

that you will get to look at, as I said, all of the different approaches, not only the overestimate and the underestimate but the best estimate approach, too, just because of using the different protocols associated with those approaches.

MR. CALHOUN: It certainly will. Only -- you know, and they'll be, I guess theoretically, in the same proportion as the number done. The only ones that we are, I'll say intentionally, I won't say screening out but avoiding, I guess that's screening out, is if there's more than, like, ten cancers, we're not going to do those just because it's just too time consuming. That may change once we get the tools in place, but right now it just takes up too much time.

MS. BEHLING: I understand. One other question. I wondered if you're thinking about, and, again, the random selection process would likely capture this, but I would assume that you wouldn't want a blind that

looks at each, for each member of the ORAU dose reconstruction team so that you know you've looked at all the dose reconstructors out there, you've done a blind against all of those. I mean, for example, I know if I saw a case that Scott Siebert's name was on for the internal, I'd want to look real close at that one.

MR. CALHOUN: Well, actually, our goal is not to look, our goal is to look at the process, not at the individuals. So that's certainly not in any of our plans.

MR. SIEBERT: And this is Scott. I'll totally ignore that, Kathy.

MS. BEHLING: I hope you know I'm just --

MR. SIEBERT: Another point is, remember, DCAS is selecting these claims before they even come over to us, so they have no idea what dose reconstructors are going to do to the claim.

MR. CALHOUN: Good point, yes.

MS. BEHLING: I didn't realize that. I thought I read differently. Okay. And one last question on this. And I guess you're probably doing this, setting up some type of spreadsheet so that you will ultimately compare all of the blinds that have been done, and I'm saying this because SC&A has only done two blinds so far and I'm the person that has done the comparison. We actually at SC&A have two different people using totally different approaches for doing the dose reconstruction, and then we compare that to the ORAU NIOSH dose reconstruction. And even in just those two cases that we've looked at, when I compared element by element, I found it interesting in such as the aspect of medical doses. In both cases, all approaches used the same, the same procedure and they came up with very different doses and it was just because of assumptions made. And it made me say, well, this is a really great approach to saying perhaps we could go back

into that procedure and maybe be a little bit more specific, not give as much professional judgment to people, if that's possible. But it would be a way of going into that procedure and looking a little closer and saying can we tighten this up a little bit so that these doses are more comparable when everyone is using the same procedure, and I assume that you're making these types of, you will make the comparison as best you can when this whole process is done or during the process.

MR. CALHOUN: Yes, we will. And I don't know when we'll do that, but I see a lot of value in that, as well. Certainly, we do the little assessments in between each DR Subcommittee meeting or two, but I think once we get, you know, a hundred DR blinds or whatever underneath us, and I just pulled that number out but I think it's a good number, then we need to go back and look and see if we see any trends between everything.

Now, right now, the only

spreadsheet I've got going is just the overall PoCs between, between ours and theirs. But the QC form is searchable by our computer folks, so we should be able to compile something like that, too. Now, certainly, the text that's entered may be difficult and it may take some time, but I do see the value in doing that to see if maybe we need to increase or even decrease the frequency in which we select these blind DRs. So I agree with you, Kathy.

MS. BEHLING: Okay. Very good. Thank you.

MR. KATZ: Let me just interrupt for a second. We're ready to switch hands between court reporters, Brandon. So, Brandon, you can disengage at this point.

COURT REPORTER: Okay, thank you.

(Whereupon, the foregoing matter went off the record at 9:21 a.m. and went back on the record at 9:22 a.m.)

MR. KATZ: And our new court reporter will start, and let me just introduce, for people in the room at least. This is Grady Calhoun, he's with NIOSH; Doug Farver, SC&A; David Richardson, he's one of the Board Members; Brad Clawson, another Board Member; Dave Kotelchuck, he's the Chair. And then on the line, we have Mark Griffon, another Board Member; and John Poston, another Board Member; and Wanda Munn, another Board Member. And others will introduce themselves as they speak; and I'm Ted Katz, I'm the Designated Federal Official.

Alright. We're ready to continue. Sorry for the interruption.

CHAIRMAN KOTELCHUCK: Alright. So where are we on the blinds? Are we pretty well finished? I'm having trouble on my computer, so I've been a little bit diverted. I just had it repaired and had to send it in, and it got reconnected and I'm having a bit of trouble outside of my home connection.

So are we ready to go on to the --

MEMBER MUNN: Well, this is Wanda. I have a question. It's difficult, of course, I think, anytime for people who don't do reconstructions on a regular basis to sometimes follow these discussions, even though we're trying very hard to understand the specifics of what's being said.

The discussion was very well accepted. I, however, do not have a clear vision yet of why these obvious significant differences in results are occurring from the different approaches that are taken. And it's not clear to me whether there may be more than one source for those differences or whether it's not yet clear to the people who are doing the audits of the dose reconstructions what these differences are. Am I missing something in that discussion, or is it so obvious to folks who do those all the time that I'm just gilding the lily here by asking the question?

MR. CALHOUN: No, no, you're not.

There's a lot of or at least there's a fair amount of judgment that goes into these when you come to overestimating and underestimating cases. And, you know, a huge, huge number of the dose reconstructions, and I don't know what the number is off the top of my head, but I would say probably in the 90 percent range are overestimates or underestimates.

MEMBER MUNN: Right.

MR. CALHOUN: And then there's always, there's a degree of overestimating or underestimating that you can do.

MEMBER MUNN: And those are valid, and professional judgment is valid.

MR. CALHOUN: And so what happens is, the degree of overestimate causes significant differences in the Probability of Causation, and we're not that concerned about that, as long as the Probability of Causation doesn't switch over or under 50 percent or does not get into the 45 to 52 percent where a best estimate is required.

MEMBER MUNN: Right.

MR. CALHOUN: Now, the one case here that concerns us, concerns you and us as well, is one where our initial dose reconstructor appeared to have erred in the assignment of internal dose. And the dose that ORAU assigned was significantly higher than the dose our guy assigned.

As it turned out, when our second reviewer, basically a peer-review-type thing when we compared two cases, when he looked at it, he determined that our dose reconstructor had erred and that the ORAU dose reconstruction was correct. And it all hinged on the assignment of internal dose, and I believe that that internal dose was actually, the uptakes were recorded in the dosimetry files.

Now, I can't tell you the details as far as: was it something like a solubility error or was it just the total intake error? I don't know that from looking at what was

written down here. But that --

MEMBER MUNN: It's better for me now that I understand this is one of those issues of judgment and having two people with similar backgrounds and understanding of the realities.

MR. CALHOUN: And I would say that this one was more of an error than a judgment.

MEMBER MUNN: Right, okay.

MEMBER RICHARDSON: Could I ask a question?

MR. CALHOUN: Sure.

MEMBER RICHARDSON: When we, when we first thought about this, and perhaps this is still the case, but when we first thought about this, I envisioned the NIOSH evaluation as a gold standard, and we were doing a random draw from the pool of claimant cases. We would put them against the gold standard and look for errors. So we were flagging out potential problems in the process.

You've described a process where,

in many cases, you appear to be flagging out errors in the NIOSH reconstruction, which, you know, upon re-review, you have a second, and you, finally, by consensus reach what you're calling your gold standard and saying that the initial evaluation by NIOSH wasn't what was desired. And I can see that. I mean, these are kind of human judgments that are being made.

We're not so much interested, I mean here I think, we're not so much interested in finding problems with NIOSH's review. It's almost like we're interested in that final conclusion that you reach, and we don't probably need to spend much time talking about situations in which NIOSH initially had some problems which, upon reevaluation -- because, really, we're interested in the truth and the product being delivered and how is it performing in terms of fidelity to the truth. So that seems to be one observation, which is sort of just for efficiency of our

communication.

The other part that I was struck with is when there's a noisy truth, which is that NIOSH is having problems and there's a noisy product being delivered, a product that which may suffer some error as well, one way that that's sometimes summarized is by some sort of scatter plot or forest plot. And I was trying to imagine what that would look like right now when you were describing those probabilities, the differences between [unintelligaible] -- it sounded to me like, my expectation would be that, in some cases, NIOSH would overestimate ORAU's job and in some cases would underestimate it and we would have noise around zero if they were both -- there would be a problem if, inherently, NIOSH was less claimant-friendly than ORAU or, vice versa, was more. We would say, well, we're running a program, we're bumping it up against something where you're always over, you know, being too generous and the contractor is

looking like they're doing the problem-solving.

I wasn't sure. It sounded to me like, in most of the cases, if we would subtract those two conclusions, NIOSH was coming out with the lower probabilities. There wasn't --

MR. CALHOUN: Not in general.

MEMBER RICHARDSON: No? Was that not the case?

MR. CALHOUN: No, no, no. And I believe that, based on what Kathy was telling us or what we had talked about, that overall review of this will help us, will help us in this regard. And I know that it is not -- give me a second here. I know that it's not statistically significant at this point, but let me just do --

MEMBER RICHARDSON: Right. It can't be. I'm just trying to think about how we want to, I guess, audit it. And in a sense, we want the best, we want the truth,

but we also don't want a situation where we say, if everything hinges on getting above 50 percent, then we need to be conscious of the different --

MR. CALHOUN: And I agree with you. And even though with just six cases here, if I look at these six cases, the PoCs that we came up with, four of the six were under, two of the six were over. So we're one off 50/50. And like I said, I know that's not statistically significant, but when we get a hundred of these or whatever, we can run through and we can compare. And I agree with you. You know, we should be falling on both sides of theirs and, hopefully, it should be pretty close. And I believe that, once we implement the tools, I believe that we'll come a little closer to that because there won't be as much, there will be selections that you make through the tools. I don't know that but maybe we are capturing that, and I think that that's a good thing -- I would be concerned,

too, if we were consistently under. That's not good, you know. If we're consistently over, that's not good either, but it's not as bad.

CHAIRMAN KOTELCHUCK: As of the last meeting, it seemed to me that, as we were going through the cases, things seemed to be okay. And I viewed, as of the last meeting, things were, you know, scattered in both directions, if you will, above and below NIOSH or NIOSH was -- the blind reviews were above and below NIOSH. So this is just, to me, another case. I'm not ready to get worried because I don't think we're in that zone.

MEMBER CLAWSON: Well -- and this is Brad speaking. For me looking at it, with the way I was looking at it is that these blind cases are doing what they did. Come to find out that NIOSH did not have access because, as you said, David, we were holding that they should be the gold standard that we were going to be comparing ORAU to, and we've

come to find out that NIOSH doesn't have all the tools, if I'm correct on that, Grady, that they have. And you're correcting that problem now. So --

MR. CALHOUN: Right. And they're automated tools, and it just makes their job a lot easier, and we'll have access and so will --

MR. FARVER: But you're still supposed to be following procedures --

MR. CALHOUN: Absolutely.

MR. FARVER: -- and OTIBs and everything --

MR. CALHOUN: Absolutely, absolutely.

MR. FARVER: -- just like they would.

MR. CALHOUN: Absolutely.

MR. FARVER: They still are supposed to be following the documentation.

MR. CALHOUN: And that's why, overall, the compensation decisions have

turned out, all of them may have been correct, once we had their second review.

MEMBER CLAWSON: So, you know, in my opinion, we are just starting out on this. We've done what? Six?

MR. CALHOUN: Yes, that was just -- yes, we've done, I think -- oh, you guys or us?

MEMBER CLAWSON: You guys.

MR. CALHOUN: We have done, I believe, I want to say thirty-something total. Let me look. I've got that in the summary.

MEMBER RICHARDSON: You said 32.

MR. CALHOUN: Yes, 32.

MEMBER CLAWSON: Okay. And we found significant problems with one or two?

MR. FARVER: Well, I'm not concerned if it's, say, 4.3 to 5.2, if that's the PoC range. Someone's different. That doesn't bother me. It's when we're 12 and 33 or 18 and 57.

MEMBER RICHARDSON: There was one

that was 28 and 0.5; is that right? Or were those the estimated --

MR. CALHOUN: Yes, 28 and 0.5.

MR. FARVER: Those are the types that bother me, because you're supposed to have two people interpreting the same documentation the same way, and they should come out similar numbers. And then for that one case, it was the 18 to 57 percent. ORAU did an underestimate. They just did a partial. They didn't even do external dose. And, you know, under the NIOSH side, they said they did an overestimate.

MEMBER CLAWSON: And how did that affect -- that's the question.

MR. CALHOUN: Well, right. And what you've got to remember is, and I know that we strive, we want all of our DRs to be perfect or as close to perfect as we can, but when you do a dose reconstruction on our side or their side, a real dose reconstruction and not a blind dose reconstruction, is that the

ORAU team is going to have, you know, the initial dose reconstruction, a peer dose reconstruction, and then, ultimately, a third approver. Then we look at it, and then we look at it again, so it gets at least five levels of review.

This one got one, you know. One guy did it. And then our second guy that reviewed it said, uh-uh, this is wrong. So that was built into it.

We have other folks that do dose reconstructions besides ORAU on our side. It's another contractor, but it's a small contractor that typically does AWE type cases and it's the same thing. We've got a dose reconstructor who does it. We've got a peer reviewer. We've got an OCAS or a DCAS approver, and then we've got a final tech review. So we've got four levels of review in that.

And we've thought about putting another level of review in the blind DRs, but

we just really don't want to do that. It's just too much time. We're having a hard time keeping up right now.

MR. KATZ: But, as David pointed out, for the one case where it flipped the decision and then your second reviewer, in-house, realized it was a mistake, I mean, those, I think those should be, those shouldn't be reported with the wrong results because you caught it yourself, just as ORAU has its own peer review.

MR. CALHOUN: But for us, I need to record that because I want to know.

MR. KATZ: Okay. Now, I mean, that may be important internally but, again, it goes back to what David is saying for the Board. The Board wants to know the gold standard question --

MR. CALHOUN: But you have access to everything, you have access to everything we do. And I don't want to -- it's valuable to me to know because then I can say, hey,

Fred, what happened here, you know.

MEMBER RICHARDSON: I see that almost from a management perspective from your part. You want to get these done well and done quickly without catching lots of problems. So that's all with the aim of you coming up with the truths upon which we're making the determination.

MR. CALHOUN: Right. But it's valuable to you to look at my check sheets. And if I was to not report that, then I don't know if it would be as valuable to you. I mean, I'm all for telling you guys that everything we found is great, but --

MEMBER CLAWSON: We have to see the problems because that's, in my opinion, that's what we're doing this for, to make sure that we're going through them, and if we're seeing issues with this, we need to understand how we got there.

MR. FARVER: But, see, DCAS didn't catch that error. You didn't catch that error

until you compared it to the ORAU report. That's what it says in your report.

MR. CALHOUN: Correct.

MR. FARVER: So you didn't catch it on your own, you were reviewing --

MR. CALHOUN: We don't do another review between those two.

MR. FARVER: I'm just saying you didn't catch it anywhere in the DCAS side. You caught it when you reviewed the ORAU report, and you saw this huge difference.

MR. CALHOUN: Right. And then they said okay, but they identified what was wrong.

MEMBER RICHARDSON: Wasn't that standard procedure?

MR. CALHOUN: And if it was correct, if we were correct, we would have caught that, too.

MR. FARVER: Yes.

MR. CALHOUN: And we would have flipped the case. We would have asked for a

rework. Well, no, we wouldn't have because it was common.

DR. MAURO: This is John Mauro. Can I raise a question here, also?

MR. KATZ: By all means, John. Go ahead.

DR. MAURO: I assume that, eventually, when you complete, let's say the 100 cases or whatever number you pick, you'll be doing a root cause analysis to sort of track down the reasons for places where the PoCs are different. The only thing I'd like to, I guess, question is very often you may get the same PoC because you got the internal dose right, you both did it right, and that was what's driving the Probability of Causation.

But are you going to -- even though you may have, I guess, even though you may be fairly close in your blinds when you compare PoC results, are you going to look a little deeper to see if there's any

differences in the way in which you've done some of the elements of the dose reconstruction that might have been substantially different but did not affect the PoC?

So looking for root cause, not so much the PoC difference, that's certainly primary and I understand why that's your goal to get close on PoCs, but is part of your mandate also to see if we're using protocols that are being interpreted consistently, data sets that we're drawing upon consistently, so that you don't have a breakdown in quality? Even though it may not affect the PoC, but that breakdown could be important to understand.

MR. CALHOUN: I don't know. And the reason I say that is I don't know how we'll be able to track that. It's all written down, like, in text, so we may be able to look at that.

Now, if it's something other than

the degree of overestimate or underestimate, certainly it's important. But until we get to a point where, and I don't think we'll ever get to a point where we're doing a significantly higher percentage of best estimates, I don't think we'll get to something where that's all that meaningful. But we'll look once we get all this information together, and if something jumps out at us we'll certainly look at that.

Now, on a case-by-case basis, we are looking at the individual entries and what could have been an issue and what was, you know, determined to be an issue and what wasn't. Overall, I don't know. I haven't looked at it yet. I don't know how laborious that will be. It may not be bad. I just don't know, John.

DR. MAURO: Okay.

CHAIRMAN KOTELCHUCK: Wanda, you asked the initial question. Are you --

MEMBER MUNN: Yes, I think I have

a better feel for -- the answer is, no, there isn't anything specific there or several things. And, yes, I can see how they would develop. It's much clearer. Thank you, all.

CHAIRMAN KOTELCHUCK: Okay. So shall we go on? So we're down to the SC&A review findings checklist and our blind case selection, and let's go to that. Brad and I both made sets of choices. I think there were 12 cases and we selected five, each of us selected five. I wrote down a more extended rationale for why those five were chosen. Brad, I'm sure you had a rationale, but you just said this is what I chose. We agreed on two, I believe, of the five. But since we're just trying to get a representative sample, who's to say one is better than another? But now the whole group needs to join us in making this selection, and then we can go ahead.

MEMBER MUNN: And, David and Brad, if I may insert a comment here.

CHAIRMAN KOTELCHUCK: Yes.

MEMBER MUNN: Thank you, David, for your presentation of your rationale. I wish I had some way of comparing your choices with Brad's. I have not had access to the O: drive or to anything that has been posted only on the CDC internet for about five weeks now. Now that I have my new computer, I was online for a little over an hour yesterday trying to get it up and running properly, and I was told they'd get back to me immediately and I've just been contacted this morning saying any time I want to attack this again they're ready for it.

But the bottom line of all that is I have not had access to the material that I needed in order to make those choices. I was, again, very thankful for your rationale, David, and I could see no problem with any of that. And since I had no way of comparing it with Brad's choices, I guess I'm prepared to say I have no problem with the choices that Dave outlined.

CHAIRMAN KOTELCHUCK: I think the spirit of, I mean the driving force, the sort of first selection was really to look at the different kinds of cancers in those 12 cases --

MEMBER MUNN: Yes.

CHAIRMAN KOTELCHUCK: -- noting that seven of them were skin cancers only, two were skin and other, and three were lung cancers, and so I chose from each of those three categories. The one thing I did not do, and I wondered if Brad did it, was to look at the type of work that the individuals did.

MEMBER CLAWSON: You know, I didn't, I'll be honest, I didn't want to put down too much because I didn't want Jenny to beat me up that I was divulging too much information on the cases, and that's why I did mine, that's why I did mine the way that I did. But part of what I was looking at was the facilities, the person, and what the person did, and that's kind of how I based

mine in my ratings.

I apologize I didn't go into the detail you did, but I didn't know where Privacy Act started and everything else. And that's why I did them the way I did them. But I looked at them from, nearly from the years of work, also the work they did, and also what they ended up with, and that's kind of how I rated them.

CHAIRMAN KOTELCHUCK: Right, right, okay. After I did the selections based on the types of cancers, then worked, I did some slight shifts to get the geographic distribution pretty broad and also having several major DOE sites so that three out of the five were major DOE sites and one was the steel company and one was the chemical plant.

So I don't know how to quite proceed. I think, in a way, there's no gold standard here. I mean, it is a selection of five. I suppose we could have been biased and chose all skin cancers. That would have been

a poor selection. That is, it wouldn't have been representative of the 12.

But I'm not quite sure how to proceed. I mean, we could, if you will, trade or we could, at one level, just accept what we have. And I don't have any vested interest. I suppose I wrote something more down.

I suppose for others who are looking at it for the first time, Dave, yourself, I don't know if you had seen this before because I think you're new on the Committee. You're new on the Dose Reconstruction Subcommittee.

MR. KATZ: Well, not as new as you.

CHAIRMAN KOTELCHUCK: No, no, no. I mean, you have served on it before, but I didn't realize you were on this, you have been on this committee.

MEMBER RICHARDSON: Yes.

CHAIRMAN KOTELCHUCK: Okay. My error. What do some of the other Members

think or some of the staff folks who are here?

MR. FARVER: I've got no say in it --

CHAIRMAN KOTELCHUCK: Pardon?

MR. FARVER: I've got no say in it, the blind.

MR. KATZ: Mark, did you, did you review the cases? Mark Griffon? I think Mark's not on the line right now.

CHAIRMAN KOTELCHUCK: Yes.

MR. FARVER: I mean, if you want to talk about it, it's okay. Just don't mention PoC.

MR. KATZ: Yes. No, no, absolutely not.

CHAIRMAN KOTELCHUCK: Others are looking at it, well, so others may have looked at it before, so what would you suggest?

MR. KATZ: I have one thought about one of them. One of them is Bethlehem Steel, and that, I thought, is, more or less,

a one-size-fits-all model, and I don't know how useful that is to do a blind review of a one-size-fits-all model. It doesn't give you a lot of insight really, I don't think, in that case.

So I sort of question whether you want to choose that case based on there not being a lot of sophistication applicable to that, I mean, there's sophistication in the models that they developed but they're not applied with great, there's not a lot of variables to apply to those cases, as I understood it. Is that true, Grady? Bethlehem Steel?

MR. CALHOUN: It's a tool.

MR. KATZ: It's a tool, and it's, basically, one-size-fits all.

MR. CALHOUN: It's prescriptive. Yes, it's prescriptive.

MR. KATZ: So the amount of years that the person is there and so on --

MR. CALHOUN: That's all that

matters, really. Well, you know, the age of diagnosis --

MR. KATZ: The cancer and all those.

MR. CALHOUN: As far as the dose assigned, it's just going to be time on the job.

MR. KATZ: So I'm not thinking that's very useful as a blind case.

CHAIRMAN KOTELCHUCK: That's helpful.

MR. KATZ: But that was my only thought. I just wanted to --

MR. CALHOUN: But we don't have a ton of those that are as prescriptive as Bethlehem Steel.

MR. KATZ: Right. No, I understand.

CHAIRMAN KOTELCHUCK: Right. That's in the middle Atlantic. That is -- let's see. Bethlehem Steel was the skin and male genitalia. Let's take a look at another

one. So that was the one with skin plus other. There were two with skin plus other. That was the case 2. There was also case 12. What was case 12? Let me see. I don't have it written down. We'll go onto the -- effectively, my computer is down, so I'm going to -- if somebody has it in front of them, the last one on the list.

MR. KATZ: Do you have the list of potential cases, Grady?

CHAIRMAN KOTELCHUCK: I had it on my machine at home yesterday and was looking at it.

MR. CALHOUN: Did Stu send those?

MR. KATZ: Yes, I distributed it --

CHAIRMAN KOTELCHUCK: It's on the O: drive.

MR. CALHOUN: Oh, is it on the O: drive right now?

CHAIRMAN KOTELCHUCK: It's on the O: drive under -- I don't think it was the DR

Subcommittee. I think it was, there were --

MR. KATZ: Well, Brad, it would have been emailed to your --

MEMBER CLAWSON: Government, my other government address, which I can't access from here.

MR. CALHOUN: It had to be under ABRWH. How about DR Subcommittee probably?

CHAIRMAN KOTELCHUCK: There were two places where today's materials were. One was DR Subcommittee. The other was something --

MR. FARVER: Something like documents for Board approval.

CHAIRMAN KOTELCHUCK: Yes, it was, it was -- Stu sent it and did not put it on DR Subcommittee.

MR. FARVER: Sometimes he puts it in that other one.

MR. CALHOUN: Is it the 16 Set?

MR. KATZ: No.

MR. CALHOUN: What set is it?

MR. KATZ: It should be --

CHAIRMAN KOTELCHUCK: Actually, it's 17 Set.

MR. KATZ: It's not. No, it's not. It's blind dose -- blind case selection. I don't know what the title is.

CHAIRMAN KOTELCHUCK: Let me go -- since I looked at it yesterday. Here we are. Excellent. So the 12 case was -- I have my reading glasses, I've got to get close, and they're new reading glasses, so -- Hanford, Grand Junction Operations Office. And so that's --

MR. KATZ: That would be better.

CHAIRMAN KOTELCHUCK: That would be better. So it will mean that we have two in the northwest. But the geographic doesn't matter this much. After all, we're dealing with the same human beings and the same radiations, if you will, at different places. And the year -- let's see. Work decade in the 1970s was `74. That's reasonable.

MR. CALHOUN: To `96.

CHAIRMAN KOTELCHUCK: Yes. So let us move that. So we'll take out the number two for Bethlehem, which was 45.012, and move it to 46.398.

MR. KATZ: Okay.

CHAIRMAN KOTELCHUCK: Okay.

MR. KATZ: So let's just get the complete list so that that information can be pulled for SC&A. All he's hearing is the facility.

MR. CALHOUN: Well, and the PoC.

MR. KATZ: Oh, great.

MR. FARVER: But I didn't hear what the facility was so I don't --

MR. KATZ: So if you just want to give, Dave, the complete list by number of cases for 6, and then we can get SC&A working on these.

CHAIRMAN KOTELCHUCK: Oh, you want to do for 6, you want to add that on, rather than take one off.

MR. KATZ: A total of six cases.

CHAIRMAN KOTELCHUCK: Okay. We had each selected five, so this is just adding another case, if you will.

MR. KATZ: We need a total of six cases.

CHAIRMAN KOTELCHUCK: Okay, fine. In which case we will just add that on, and I will, I have my, I will add the choices --

MR. KATZ: So we have two that are in common with Brad.

CHAIRMAN KOTELCHUCK: Right. Two, eight -- wait a minute. Oh, I'm using his, the code numbers, right? 2, 7, 9, 10, 13.

MR. KATZ: Okay. You're saying in order of the list cases?

CHAIRMAN KOTELCHUCK: Yes, in order of the list cases, but, but --

MR. KATZ: Two, seven -- go ahead.

CHAIRMAN KOTELCHUCK: 2, 7, 9, 10, 13. Thirteen would be -- wait a second. I'm sorry. I'll have to check because 13 was the

last one. Oh, they're right. I am -- Bethlehem, Allied. Excuse me. Bethlehem was two. We are dropping two. Yes, selection IDs, but there's some -- Brad's choices, my choices. Hanford, Hanford was on the list. I'm terribly sorry, but Hanford was on my list. That one was on my list, and I don't --

MR. KATZ: Okay. So you can pull one of Brad's --

CHAIRMAN KOTELCHUCK: Yes.

MR. KATZ: -- to fill in.

MR. CALHOUN: Away with Brad's.

MR. KATZ: Well, no, we're adding.

CHAIRMAN KOTELCHUCK: Right. That's what we should do. So 2 and 13. Wait a second. Yes, you've got it. And I don't understand why, as we were talking -- oh, I see. In the end, oh, 2 and 12, 2 and 12. Two we don't want, and I had put 12 was the Savannah River Site, hold it, just all male genitalia. I don't -- we wanted to pull Bethlehem. Okay.

And, ah, okay, I see what my mistake was. If we didn't pick, if we didn't pick -- we were talking about Hanford, but we should have been talking about 12, which was Dana Heavy Water Plant, Savannah River Site, which was the other case of skin plus other.

Okay. So we'll pick, we'll drop Bethlehem or -- right, we'll drop Bethlehem, and we'll add 12, which is 019. We dropped Bethlehem. That's five.

MEMBER CLAWSON: David, which one -- are you using these numbers for the --

CHAIRMAN KOTELCHUCK: Yes, yes.

MR. KATZ: Let's go with the simple numbers, okay? Just list them in the order they're given, the simple numbers, as opposed to these.

CHAIRMAN KOTELCHUCK: The selection ID you mean?

MEMBER CLAWSON: Yes, because you don't -- I was just trying to figure out your 12 on that.

CHAIRMAN KOTELCHUCK: Yes, 12, I just used these. Talk about simple numbers.

MEMBER CLAWSON: Okay.

CHAIRMAN KOTELCHUCK: It didn't matter to me what those other numbers were. I just translated back to get to you. But the question is this: if I take out Bethlehem and I put in case 019, then that's fine. I only selected five, so that still leaves us with five. We want six, so we want to add on one of yours, Brad, right? Even --

MEMBER CLAWSON: Well, can we just go down which ones we've got chosen, I guess?

CHAIRMAN KOTELCHUCK: Sure. And we'll use those, if you will, the selection ID.

MEMBER CLAWSON: Okay.

CHAIRMAN KOTELCHUCK: And I had selected or I now select 008, 013, 016, 019, and 021. That's five. Those are five.

MR. KATZ: Okay. And one more from Brad.

CHAIRMAN KOTELCHUCK: Right. Since we dropped steel, which is middle Atlantic, that doesn't matter much. Since we had a larger number of skin only and I selected only two of those six, let's just take another one with skin cancer --

MR. KATZ: Wait. Do you have multiple skins already?

CHAIRMAN KOTELCHUCK: I have two skin, but skin, remember, was 7 out of the 12 cases.

MR. KATZ: I know, but don't you want more diversity? Because if you do skin, you're only dealing with certain --

CHAIRMAN KOTELCHUCK: Right.

MR. KATZ: -- radiation exposures.

CHAIRMAN KOTELCHUCK: Right. The question was representative versus diversity, and I said I want a representative sample of the 12, and that's where one could argue that one should give more --

MR. KATZ: But the 12 is not

representative of the universe at all, so I would just go for diversity because that's going to --

CHAIRMAN KOTELCHUCK: Good. Then if we go for diversity, then we have the two skin plus other, and there are three cases of lung cancer of which, I believe, we have selected one.

MEMBER CLAWSON: We've selected one already.

CHAIRMAN KOTELCHUCK: Right. So let's take another --

MEMBER CLAWSON: Well, if I was to do any, I would do these two.

CHAIRMAN KOTELCHUCK: Okay, 003 and 004.

MEMBER CLAWSON: One of those --

CHAIRMAN KOTELCHUCK: Yes.

MEMBER CLAWSON: -- because both of these, that was a problem in these sites.

CHAIRMAN KOTELCHUCK: Good, good.

MEMBER CLAWSON: So either one you

want to pick.

CHAIRMAN KOTELCHUCK: Right. Now, both of those, no, both of those are, you're looking at 003 and 004?

MEMBER CLAWSON: Yes, both of --

CHAIRMAN KOTELCHUCK: No, but he's suggesting, and I think it makes sense, that we not pick another skin and that we pick from the three lung over here. That is 008 --

MEMBER CLAWSON: We've already got 13.

CHAIRMAN KOTELCHUCK: I've got 13. Eight or ten --

MR. KATZ: We've got 8 already.

MEMBER CLAWSON: You've got, you've got 8, and you don't want Bethlehem, so you've got all of the lung cancers --

MR. KATZ: Oh, I see.

MEMBER CLAWSON: -- are taken care of.

CHAIRMAN KOTELCHUCK: Yes, so then we would not add the Rocky Flats, which was

the one not picked, the one -- right. And let's see.

MEMBER CLAWSON: We could do -- you've already got 13. You picked 13, you picked 8.

CHAIRMAN KOTELCHUCK: So, okay, so we have the two skin plus other. The truth is we only have skin left.

MR. KATZ: Oh, okay.

CHAIRMAN KOTELCHUCK: Okay. So that does it. And we were looking, we were looking at 3 and 4 for skin.

MEMBER CLAWSON: I'd go with 4.

CHAIRMAN KOTELCHUCK: Go for 4. Okay. 004. So reading back now, 004, 008, 013, 016, 019, and 021.

MR. KATZ: Okay, done.

CHAIRMAN KOTELCHUCK: Good, okay. Thank you.

MR. KATZ: So, Doug, do you need files sent to you on these from DCAS, or is this something that you can go in and grab on

your own, or how does this work?

MR. FARVER: I would prefer if they put them out with the O: drive.

MR. KATZ: Yes, that's right, because --

CHAIRMAN KOTELCHUCK: Yes.

MR. KATZ: -- we don't want any of the information that you shouldn't see.

MR. FARVER: So we don't have to go into NOCTS and see a DR that's been completed.

CHAIRMAN KOTELCHUCK: Right.

MR. KATZ: So can you handle that, Grady?

MR. CALHOUN: Yes.

MR. FARVER: It's going to be probably what? A DOL information and --

MR. KATZ: DOE.

MR. FARVER: -- some DOE records, and there's going to be a file from where you input the data, your data entry people, because that's going to be the file that gets

loaded into the workbooks.

MR. CALHOUN: Well, we've done this before, right? And so do I know exactly which cases we have by ID number? MR. KATZ: Yes. You want me to repeat them? 004, 008, 013, 016, 019, and 021. And then if we can get that within at least a couple of weeks at most, then that would be great because then they can get going.

MR. FARVER: That's going to be looking at middle of June.

MR. KATZ: Well, even sooner. You'll get them even sooner, it looks like.

CHAIRMAN KOTELCHUCK: And, Wanda, apologies. As we first started this discussion, I went down and I looked at, when we were talking about, right after we talked about Bethlehem Steel, I went and I took a look at the table and I went to the wrong number, if you will. And so there was confusion, and I had to go back and clarify it. We have it clarified. On the other hand,

it may be very confusing over the phone, for which I apologize.

MEMBER MUNN: Well, that's all right. I'm just sorry that my systems did not allow me to get the information so that I could contribute, but the discussion is helpful. I thought it was helpful.

CHAIRMAN KOTELCHUCK: Good, good.

MEMBER CLAWSON: David can feel your pain.

CHAIRMAN KOTELCHUCK: Right, right.

MEMBER MUNN: Well, I've been assured by ITSO that this week I will be able to access the network. I'll believe it when I see it.

MR. KATZ: Let me just note, Wanda, for you but for everyone, in terms of Board Members, when you can't get access, we can, we can FedEx you hard copies of materials. So if we'd known that you still didn't have access, we could have FedEx'd

these things to you, but we need to know to do that.

MEMBER MUNN: Well, I expected right up until last Friday that I wouldn't have a problem because --

MR. KATZ: I just want you to be aware that that's --

MEMBER MUNN: -- but didn't work out that way.

CHAIRMAN KOTELCHUCK: I think that we're always thinking that hope springs infernal --

MEMBER MUNN: I'm afraid so.

CHAIRMAN KOTELCHUCK: -- because I have the same thing. I essentially feel like I have a brand new machine.

MEMBER MUNN: I do have a brand new machine.

CHAIRMAN KOTELCHUCK: After I got it back, my account, my password, everything has changed. I'm happy that I can work on it at home. I have access to the O: drive. I

went over everything. And then I show up here in Cincinnati this morning, and I can't get onto the computer. I'll do it at lunchtime, probably with help from my more skilled colleagues at this computer access.

MEMBER MUNN: Well, it kind of depends on who you get on the phone, Dave.

CHAIRMAN KOTELCHUCK: Right, okay. Yes, it does. Shall we do case reviews?

MR. KATZ: We have checklist first we want to talk about.

MR. FARVER: Well, I want to talk about the blinds, though. I mean, once we get the files out there, we still have to work out the issue on the tools, on how we're going to get access to the tools and --

MR. KATZ: We discussed that earlier.

MR. FARVER: I understand. So you're going to --

MR. CALHOUN: I'll let you know when I know, but, yes, it will be soon.

MR. FARVER: It will be soon.

MR. CALHOUN: Well, at least I'll give you status very soon.

MR. FARVER: Okay. Because we have a time frame we need to get started on, and if we're not going to make that time frame we need to come up with another plan. That's all.

MR. KATZ: Grady, just please copy me with the communications so I know what's going on.

MEMBER CLAWSON: Also, the rest of our group so we kind of understand what path we're going.

MR. KATZ: Okay. About the checklist discussion.

MS. BEHLING: This is Kathy Behling. If you'd like, I can lead that discussion.

MR. KATZ: Thanks, Kathy.

MS. BEHLING: Okay. I believe that Ted sent everyone a file on the 16th of

May, and it was just something of a hypothetical case where we introduced this new checklist. And let me back up a little bit because I want to give you an explanation as to why we're suggesting, in the future, to perhaps make some minor changes to our current checklist, which is Table 2 of our report.

During the last Dose Reconstruction Subcommittee meeting, I was listening to a talk about an observation that had to do with, there were different results from different versions of the CADW program, the Chronic Annual Dose Workbook. And it was identified as an observation, and I know we've, in the past, had a lot of discussion as to what should be observation and what should be a finding, and there have been times where I felt that that particular observation should have been a finding.

And we had some internal discussion on this topic, and Doug said, well, where should we put that into this checklist?

And so, therefore, I'm suggesting that we add one element into Section A, which is review, it's currently review of data collection, and I want to add into that heading review of data collection and DR tools.

Quite honestly, I guess, when Hans and I developed this initial checklist, this was early on and we were not even really aware that there were all of these tools out there, so it didn't get put in. And we're suggesting that we add an element A3 that allows us to say worthy, appropriate, and accurate DR tools were used for the case and were all the input data correctly entered into those tools. And so those types of issues can become a finding, rather than an observation. So that's really the major element that we would like to add.

Then while we were talking about making these changes to the checklist and also the fact that I know NIOSH is trying to work on putting all of this data, eventually, into a database, we thought it might be worthwhile

adding a third page to this table, which we can make modifications to this but we're initially calling this an addendum to the review. And it's the third page of this Table 2 from the file that was sent to you --

MR. KATZ: I'm sorry, Kathy. Can you maybe talk a little closer to the phone receiver or whatever it is you're using? Because we can hear you, but it's a struggle.

MS. BEHLING: Okay. I'm sorry.

MR. KATZ: Much better.

MS. BEHLING: Is that better?

MR. KATZ: Much better. Thanks.

MS. BEHLING: Okay. I'm sorry. If you need me to repeat anything, I'm --

MR. KATZ: No, you've been okay.

MS. BEHLING: All right. So we decided, also, internally that we may want to add this third page to Table 2, which is, I initially called it an addendum. John Mauro maybe suggested that maybe this could be the next section H.

But what we wanted to do here is just identify issues that we didn't want to, I'll use the term "grade" or say that the impact of these, what the significance was, as we do on page one and two, because these are things that the dose reconstructor likely wasn't even aware of or it wasn't part of -- well, he did the dose reconstruction, he probably did it fine based on the TBDs, as they currently existed. These are issues such as those that we identify in Section 1.3 of our report that says there are Site Profile issues that are still being discussed that may impact this case. We discuss it in the text, but we've never added it into the checklist. And we thought this might be an appropriate place to identify, as you, hopefully, will have this in front of you, the third page of the table that says what is the document type, and for the first example, it's from the TBD. And it's currently SC&A's finding number three from our review of the TBD, and that

particular finding may have an impact on this particular case at some point down the road.

The other thing that I added to this is what we normally consider as observations are things such as the PER issues. I took a case, this particular hypothetical case, and I introduced elements such as this case should have been reviewed, should be re-reviewed, reworked because of PER-0012, which is the highly insoluble plutonium issue. And I also added a second PER issue, which it just so happens I tried to introduce a worker who was a construction trade worker, so this particular case should also, in the future, be re-assessed based on PER-0014, which is the construction trade worker PER.

We're adding this third page more as a means of, ultimately, maybe having a tracking system. Once, as I said, NIOSH has all the information in a database, it would just be a means of tracking and, perhaps, the

Subcommittee would like us to go back at some point in time and say, all right, have all these issues been caught? Maybe we would go back and look at a re-worked case, as we have done in the past.

So those are the, like I said, somewhat minor changes. The main portion, we're just adding the Section 8.3, which is to allow us to capture any DR tool issues that we might find. And then, lastly, this third page, which is just capturing the TBD issues and any observations associated with the PERs. And we're just suggesting this and wondering if it's something that you might want to consider in making a change.

MR. KATZ: Thanks, Kathy.

MS. BEHLING: You're welcome. Are there any questions?

CHAIRMAN KOTELCHUCK: Is there a response? I would say I don't have any response.

MEMBER CLAWSON: I agree with what

Kathy is saying. I think it would be beneficial for us. They're the ones that work with that more than any of us, but, for us to be able to review it, I think it would be helpful.

CHAIRMAN KOTELCHUCK: Anybody?

MEMBER RICHARDSON: Right now, are these tables only embedded within the report documents, or do they exist also in a kind of a database structure? Because they have kind of the feeling of a database, and you're talking about, well, we may want to dig back into them or cut through them. Are they searchable that way?

MS. BEHLING: Currently, they are only in our report. We initially did develop an access database that incorporated this checklist in it. However, we never populated all of the cases. And then when we started to discuss about doing a database, NIOSH recommended that they compile, and it's not going to be an Access database. I guess it's

a Sequel database or whatever.

So they're working on that at this point. And during our database design meeting, we talked about incorporating this checklist.

MR. FARVER: Internally, we have talked about loading up some of the findings from maybe the 8th or 9th set forward into our Access database so that we could search them until we get this other one online.

MEMBER RICHARDSON: Because the findings that are in the proposed new table, which I think is, I mean, I find it useful to kind of summarize a lot of the text and just get it into a -- basically, it's a bullet list now of what the key findings are. The information is actually in the text of the report, also.

MR. FARVER: Yes, a lot of that is a repeat of Section 1.2 and 1.3, and do you need to have Section 1.2 and 1.3 if we have this table? I don't know.

MS. BEHLING: In addition, obviously, anything that we have marked as a finding from this checklist is obviously in our matrix, so we track all of these in the matrix. But this specific table is not necessarily captured, but it becomes a finding in the matrix.

MR. KATZ: So if I could just editorialize a bit, Kathy, on part of your proposal, which I think makes sense, the appendix, I think that's what you called it, that covers the TBD matters that are relevant to the case, live TBD matters, ongoing TBD matters, that, in effect, is, I think, responsive to addressing Dr. Melius' concern that there be full crosswalk between the dose reconstruction case review and the other procedural reviews through Site Profile. And I think that makes a lot of sense to help ensure that -- because it's a better check on, then, how well is the case review catching what it should be catching?

MS. BEHLING: Exactly.

MR. FARVER: It's not going to include an outcome of those findings. It's just going to include what the finding is for.

MR. KATZ: Exactly. But it notes that that was a recognized issue at the time that the review was done.

MR. FARVER: Yes. And that already had in Section 1.3 --

MR. KATZ: I know, but it's a narrative. So I'm just, I'm concurring with you, Doug, that I think that that makes a lot of sense to have that there.

MR. FARVER: Okay.

MS. BEHLING: And as I said, I also decided to add in issues such as PER issues, and if we ultimately track this, as I mentioned, at some point in time, maybe the Subcommittee will want to go back and pull some cases and say, let's go back and see if these cases were re-reviewed and if they were appropriately done for both PER-0012 and PER-

0014. It gives us another avenue to go back and check to make sure all of these issues were caught for this particular case.

MEMBER RICHARDSON: So I have one little design question. You have a hypothetical, it's called -- everything is labeled Table 2, actually. It's got findings that are numbered for deficiencies, I suppose, like A1 through G5, and then H is just a bold section for deficiencies. And this last thing is, which is an appendage, an addendum, hangs on there without any numerical indexing in the same way. Is that intentional or --

MR. FARVER: Yes, because it's already a finding. It's not something that we want to track as something because it's a Site Profile finding, and it should be handled by the Site Profile Work Group.

MS. BEHLING: I mean, I guess we could go in, and I know, when we were having internal discussions, John Mauro had suggested that maybe, rather than making this just an

addendum, we can make this a separate section, like this Section H, but I felt we needed to separate it because I just didn't want to make it look as if it was, we were grading anything or we were trying to identify these by some level of the impact associated with it. I just wanted to identify that these issues exist out there, but I didn't want to grade it in any way, if I'm terming that appropriately.

MR. FARVER: I guess where it says document type, you could put document number and have the number of the document.

DR. MAURO: This is John Mauro. Maybe I could jump in a little bit here also because there's some history here. Some of you may be aware of it, some of you may not. And I think this decision on the structure of the checklist is important because it goes to whether or not a given case is going to get a good review or a bad review in Table 2.

Right now, the way we structured ourselves for DOE sites, and I'm not talking

about AWE sites. Let's put those sort of in the parking lot for a minute. What we're really doing here with the current checklist is saying, listen, did NIOSH follow its procedures faithfully? Were any errors made regarding loading the data? Did they use all the data? Did they use it correctly in accordance with their procedure?

So the procedures, what I mean by procedures, I mean the Site Profile and all of the OTIBs that apply. So we, you know, you have to follow those procedures. So it becomes more of a quality assurance checklist, Table 2. Did they do the work in accordance with their own guidelines in a consistent way?

And one of the internal discussions we've had is whether or not -- now, we all know that there are many Site Profiles and perhaps procedures that are undergoing review or even haven't even entered the review process yet where SC&A has commented on a Site Profile, for example. And

we may have some concerns with the procedures. Our internal discussions went toward the question, well, when we complete a DR review and let's say we come up with no findings; however, we do have lots of concerns, let's say, at the same time with the Site Profile upon which it's based or the issues are undergoing active discussion by a Work Group. Do we want to somehow capture that in the scorecard for Table 2 or not? That's really something that should not be part of the scorecard.

So we've ended up coming to a place, what we're offering now for your consideration is -- and, Kathy, I think I have it right, but if I'm saying something that's incorrect, please correct me. What we're doing now is we're creating a vehicle where we don't score the DR negatively if there happens to be a Site Profile issue that we have found or that is under active discussion because, you know, we have the information in the new

checklist, it's there, but the heart of the review, Table 2, there will not be any negative findings because we have some concerns with the Site Profile upon which the DR is based.

This is the product that would be generated now as part of the DR process. So, you know, we would not be making any negative statements about a DR because there might be some Site Profile issues that we're still considering.

MEMBER RICHARDSON: Yes. So that was useful. I mean, my recollection of Dr. Melius' concern was that we've evolved into a process that's very detail-oriented and relates to quality assurance issues, quality control issues, and are people following procedures correctly? And, I mean, I'll take as much responsibility as anybody for that. I'm sure it's been what, you know, has been most and has continued to flag me as an obvious problem, which, you know, we want to

focus on. But if I recall correctly, and, Ted, maybe you can correct me, he was encouraging us to think about larger scientific issues of scientific validity, as opposed to just proper implementation of procedures and numerical problems or data entry problems, any of those.

And I see this, I see what you're proposing as a step towards formalizing that, and I think it's, I mean, it's useful on your part. I think what we're struggling with is how to, how we don't still let this information just get buried back into this report, but we have a process in place for both identifying and then, basically, passing on things that we think are important scientific issues for a larger discussion and tracking them.

MR. KATZ: Yes. Thanks for saying that, David, because now the piece that may be missing from this, John Mauro and Kathy, that I think is worth discussion is I think this,

as you have it planned, captures, so long as this stuff can be pulled out and tracked, the issues that already have been identified because there have been TBD reviews, you know, whether a Site Profile or TIB reviews or what have you, where those issues are live issues or whether, maybe they're not already being discussed by the Board, like you said.

So that's good for that piece. The element that might be missing from what you propose, though, that would belong there if it is missing is where you find an issue that should be in a TIB/TBD discussion but hasn't made it there, but you've identified it by doing the dose reconstruction case review. And you would want to capture those. Those are really a different category because they're newly caught. They may not have been recognized when you were doing the TBD review, the TIB review, but you recognize them now that you're looking at this specific case. And we would certainly want those somewhere in

this to be caught, and they're especially important because they're not sitting with the Work Group right now or with the Procedures Subcommittee. Does that make sense?

MS. BEHLING: Yes, yes, it does. And, Doug, you can correct me if I'm going to make an incorrect statement here, but I believe that when we do identify those types of things, such as something in an OTIB that we feel is incorrect, we somehow get that into the first two pages of our checklist as a finding because it has to do, usually, with a dose that was calculated incorrectly. So it ends up in either, you know, A through G.

So I think, generally, it's captured, and we make every effort to capture it at that point. And I, well, I'm even thinking, you know, we toyed with the idea of making an A.4 for that type of thing. And then we decided, no, we'll put it into the addendum. So, Doug, am I correct in that?

MR. FARVER: Well, I don't know

because, let's say there's a problem with an OTIB. It should have been caught when it went through the Procedures Review and should have been addressed under that review because, typically, when we do these dose reconstructions, we don't review an OTIB. We just see if they're following it.

But let's say something is blatantly obvious and it's missed and it comes out. If they follow the OTIB as written, it may not make it into one of our findings.

MEMBER RICHARDSON: Yes, and I remember you saying this before. You'll say, "Well, they followed it, but I think it was a little screwy," or, you know -- I mean, I have to go back to the record and see if you actually said that.

MR. FARVER: It sounds like something I would say. But it may get missed. We might make it an observation or something, which I think we've done before.

MR. KATZ: But so our point here

is that these are important, actually, because the OTIB or whatever has already been reviewed and stamped as good now. We want to identify these specially and send them back to wherever they belong, whether it's a Procedures Review or it's a Site Profile review that's already been done but then we have this new issue. These are especially important, and that is the rest of, the balance of what Dr. Melius is concerned about.

MR. FARVER: But now you want to track that.

MEMBER RICHARDSON: I like that.

MS. BEHLING: Yes, I do, too. And like I said, in fact, internally, when I sent around my checklist, I had an A.4 in there to capture that. And then during that discussion, we sort of came to the conclusion that, oh, we started to put too much into that element. So we can easily introduce an A.4 to capture those situations where we might find an OTIB or a procedure that we realize maybe

should be changed.

MEMBER RICHARDSON: Well, I mean, I think that that's, that scorecard, as John called it, is useful. And that's the scorecard for thinking about quality assurance issues. I mean, you've got another table here which has a really good heading on it. Were there any TBD/OTIB procedures, et cetera, issues of concern identified during the review, and it sort of seems like we want a bottom line there like you have a bottom line, row H, which is in bold which says kind of the total number of findings just on that next addendum table. And that's, that's kind of maybe the trackable ones that we want: are there issues of concern that need to be tracked somehow?

MR. FARVER: Newly identified issues.

MR. STIVER: This is John Stiver, if I could jump in for just a second. I believe during our discussion, we decided

against the A.4 for the same reason that we decided on introducing this third page was that we didn't feel it was fair to DCAS to grade them down on something that might be related to an OTIB issue, whereas we would want to capture that and have it available for information but not necessarily grade them on it. Correct me if I'm wrong, Kathy, but --

MR. KATZ: No, you're right. And that's consistent with what you're hearing from David.

DR. MAURO: Yes, I like what I'm hearing -- this is John, and let me weigh in a little bit. What we are saying, Ted, and I agree completely, is that we may learn as we're doing a case that they followed the OTIB or they followed their Site Profile, and so they're not going to get scored down on that. But what we may have learned, what I'm hearing is we may have learned something that there are additional problems that need to be addressed with respect to that OTIB or that

Site Profile that we did not capture before. That's something, that's another dimension that I agree helps to break down the stovepipe where things are separated. And I don't think right now we've got that.

In other words, please, correct me if I'm wrong, but that feedback loop whereby this particular case has yielded insights because -- that does happen, by the way. For example, I've seen it happen with regard to TBD-6000 where we did a case and we said, jeez, you know, when we did this case, we really had to get into the bowels of TBD-6000, and we started to realize that, even though we've closed all the issues on TBD-6000, we uncovered something new that we never thought about before while doing this review, and that would be a do loop, another loop back.

Now, of course, it's a little stressful because, very often, you say, well, we reviewed that TBD and everything was closed, and it's fine. And then all of a

sudden we're saying, well, hold the presses, we just realized from doing this case that there still are some things that we have to talk about on TBD-6000 and re-open it again. And that's what I'm hearing, Ted, you're saying. Am I capturing this correctly?

MR. KATZ: Yes, that's correct. And that's just continuous improvement. It's okay that it's already been looked at. If it's an issue to someone, it should be looked at it again, right?

DR. MAURO: And I don't think our current format -- and, Kathy, please, correct me if I'm wrong, and Doug -- goes there.

MS. BEHLING: Let me ask this: if we were to include this A.4 for these types of things that we're talking about, the OTIBs or procedures where we find something, we could keep it in this main checklist and maybe checkmark it as under review so it doesn't appear like it's obviously something -- it wasn't something that the dose reconstructor

did wrong but it's something that we checkmark as we need to review this. I don't know. Does that make sense?

MR. STIVER: Kathy, this is John. I believe that makes perfectly good sense to me. I believe that's one of the reasons that we had that selection option to begin with was for these types of situations that don't really fit nicely into any of the categories.

MS. BEHLING: Would the Subcommittee agree to an A.4 where, if we do have to identify something associated with procedures or the OTIB, our auditors would know to mark that as an under review type of concern?

MR. FARVER: Kathy, during our recent Board calls, one-on-one calls, we've had issues that have come up where the Board Members have questions and really don't want to wait two years or so until it comes up as a finding in this Committee. I think this would be a good spot for them in that addendum to

Table 2, which would also fit well if we identify a new issue that needs to be addressed.

MS. BEHLING: That's great.

MR. FARVER: And then we just take this addendum table and we just, we can just send it off to NIOSH separately. Well, I guess it's part of the report, but they could then learn to address these quicker.

DR. MAURO: Yes, we don't want to score down. In other words, we don't want to score down the DR because we have learned something where a Site Profile or an OTIB or any other of the procedures, we're saying, hmm, there might be a deficiency there. What we're really doing here is we're saying, we're not really criticizing the DR. What we're saying is we've learned something that needs to be fed back to the AWE Work Group or the TBD-6000, you know, one of the Work Groups or one of the Site Profile Work Groups that needs to go on their agenda. That's all that we're

really saying here.

MR. KATZ: Right, right. And so everybody understands. I think everybody is on the same table now, okay? So I think we're good with going forward. The one thing that we need as part of this machine, if you want to call it that, is we need then actually there to be a communication when we have one of these items that's not already under review. We need a communication that comes either through me or what have you, but so that we can get a communication to the right Work Group or the Subcommittee so they're aware, whatever the finding, how it came about, and they can look at that. So we need that to happen so that these findings that are important potential concerns don't sit on the shelf for two years because we're not caught up with our case reviews in the Subcommittee here.

DR. MAURO: Ted, could I add a little bit to that? I think that this do loop

going back, the loop going back, really has two dimensions to it -- one is we have a case that we just finished and that we gave it a good score. Let's say it's perfect, no negative scoring. But I think it's important that if there are many issues in this other addendum table, let's say, but there are a lot of things that work right now that either have been addressed or have not yet been addressed or are being addressed that could have a very big effect on this case. And in my mind, we need to inform, there's got to be a vehicle to alert the Procedures Committee or the Site Profile Work Groups that these are turning out to be pretty important because they're affecting cases.

Now, you have another dimension that you've added that, oh, by the way, we also have identified additional issues that you need to add to your agenda. So this feedback I think goes a long way to resolving a lot of the stovepipe issues that Dr. Melius

brought up, and I really like it.

MR. KATZ: Right, right. Anyway, I don't want to eat up more of the Subcommittee's time right now, but I think, John and SC&A, we need to put into place some machinery so that we get these communications happening in real time as these issues are found through case review so that, again, other parts of the Board that are involved in those reviews are notified of what was found, the details, and they can then take it up.

MEMBER RICHARDSON: So one, just one to hopefully wrap this up. But Dr. Melius has asked for something. We're proposing to put into place something which would be useful if we had a mechanism to, at the end of when a report is finished, communicate it to them in the form of a memo and see if you can assign it to a Work Group.

MR. KATZ: Right. Well, there may be a Work Group already. It just depends on what the issue is. But we do need a memo to

come out, basically, or some sort of communication to come out when we have a finding in a case review that has importance for a procedural document, whether it's --

MEMBER RICHARDSON: And it gets it sort of off of our plant and onto his.

MR. KATZ: Right. And onto the right plate.

DR. MAURO: One of the vehicles -- this is John again. One of the vehicles, you know, when we deliver a package, for example when the 15th Set comes out where, you know, we've finished the 15th Set, our reports come out. We always have text, and Kathy usually prepares this or Doug, we always have some text that sort of summarizes what we found out. What we're really saying is we have a new section in this report that when we put out our package on this set of reviews that goes towards this issue. So it would be captured in the executive summary or in some of the discussion points that come out in the

work product that we put out.

Now, the degree to which we create machinery where, I mean, there may be other ways in which we can communicate this.

MR. KATZ: No, that's fine, John. So make it its own section, though, in the report so that it's clearly called out, and that will work.

MS. BEHLING: Okay. And just one final question. So we have decided not to include the A.4? We're going to put everything into this addendum, and then that will get forwarded on?

MR. KATZ: Doug is nodding his head yes.

DR. MAURO: I agree.

MR. FARVER: I would call it Table 3, which is a separate table.

MR. STIVER: We can make it a separate table.

MR. KATZ: Yes. And everyone here is agreeing with that.

MS. BEHLING: Very good.

MR. KATZ: Thank you.

DR. MAURO: Thank you.

MR. KATZ: Does anybody need a comfort break?

CHAIRMAN KOTELCHUCK: I was going to say it's a quarter of 11. I think we should take a little break and get back at five of. A short break.

MR. KATZ: Ten-minute break?

CHAIRMAN KOTELCHUCK: A ten-minute break.

(Whereupon, the above-entitled matter went off the record at 10:43 a.m. and resumed at 10:56 a.m.)

MR. KATZ: So we're back. Let me just check and see, do I have --

CHAIRMAN KOTELCHUCK: That's a good idea.

MR. KATZ: -- Mark Griffon, are you on the line? And John Poston, are you on the line? And Wanda Munn?

MEMBER MUNN: This is Wanda, I'm here.

MEMBER POSTON: John's here.

MR. KATZ: And I heard John, too. Great. Mark? Maybe not Mark. I did get an email from Mark saying he's good with the case selection for the blind reviews.

CHAIRMAN KOTELCHUCK: Okay. Okay, good.

MR. KATZ: So thanks to Mark for that.

CHAIRMAN KOTELCHUCK: Appreciate that. Then I guess we're ready for case reviews.

MR. KATZ: Well, we're actually not. We have one other item that I sent you an email about that we wanted to discuss briefly, which is Set 17, before we get to that.

CHAIRMAN KOTELCHUCK: Oh, yes, right, right, right. Okay.

MR. KATZ: So let me, I think I

can give you a --

CHAIRMAN KOTELCHUCK: I didn't follow it quite, because it has to do with --

MR. KATZ: I can give you a thumbnail, let me give you a thumbnail.

CHAIRMAN KOTELCHUCK: Please do.

MR. KATZ: And then, by all means, John Stiver can add to what I have to say here. So right now SC&A is still working through Set 16 and still actually wrapping up a bit of 15. And SC&A has a contract through December, so we have room to add some more cases to Set 17, a shorter Set 17, to keep them busy on dose reconstruction case reviews through the end of the year.

So that's our aim. Given the way we've done this normally, we're going to have to do a different kind of procedure to do this, more or less how we've done this blind case review, which is, rather than, we have in the past pre-selected cases, brought those to the full Board, the Board has had a chance for

input, and then we've gone to final case selection at the Board level. I've communicated with Dr. Melius and he's going to communicate with the rest of the Board, but he's fine with just us handling this administratively so we're not hostage to when we can meet as a Subcommittee, nor when the Board meeting is because the Board meeting, there's a lot of time between the next Board meeting and the following one. So we can handle this administratively and get these cases selected for this next set. A few administrative meetings, meaning I think we can do a lot of communication by email and then have a teleconference to discuss case selection that's an administrative one. It doesn't have to be a Subcommittee meeting that has to be noticed and all that. So I think that's the path forward to getting cases selected.

The other two issues, one I'll cover first is the number of cases that they

can get done because they have to get these cases completed, including the Board input, the individual Member input into these cases, before the end of the year. The pace they've been doing these cases, you know, I'd estimated they could get about eight done. John Stiver came back and said, looked at this resource, and said we think we can get ten done. I mean, part of the issue that's difficult is getting the Board Members' input at the end because we're talking about getting your input in the November - December time frame, which is not the friendliest time frame in terms of when people have other commitments and so on.

So it's going to take cooperation from the rest of the Board to get these done in time, and they have to do this under this contract. So I think ten is the maximum number that we'd want to select.

Then the third element of this that needs to be discussed here is how to do

that selection. And John Stiver sent you a suggestion for only selecting for a certain number of sites. It looks like for eight or nine different sites. These are all, it looks like, AWEs. I don't know if you want to do that, change horses and that's not the procedure that's been used for case selection in the past, and we don't have Board input on doing that, sort of focusing on these eight sites. But John gave you some rationale as to why these are of interest doing cases for these. It's not a large number of cases, but you all need to discuss what you think of the suggestion or, if not, we'll follow the normal protocol of selecting a set. It will just be a smaller set.

CHAIRMAN KOTELCHUCK: Is there any contractual restraint on the size of the set? You said --

MR. KATZ: Yes, there is. I mean, they have to get these cases done this year, so that's the issue.

CHAIRMAN KOTELCHUCK: Right. But if he had come to us and said I can only do six, and we thought that was okay, that would be okay? That would --

MR. KATZ: Oh, yes. No, no, no --

CHAIRMAN KOTELCHUCK: -- still be fulfilling their contract?

MR. KATZ: Basically, so, basically, the number is not an issue for this Subcommittee --

CHAIRMAN KOTELCHUCK: Good.

MR. KATZ: -- because it's what they can get done is what is allowable.

CHAIRMAN KOTELCHUCK: That's fine. Okay.

MR. KATZ: So the only issue is how to do the case selection. That's the real issue. I mean, we have a procedure for how to get it done, but what cases you want DCAS to pull for you to select from, that's the only issue. And, again, there's a standard method for that that could be applied, or John Stiver

has proposed focusing on these nine different sites. And he's given you some information about that, and I circulated that to everyone.

MEMBER CLAWSON: Have I got the right one, or is there ten?

MR. KATZ: Well, it may be ten. Maybe I --

CHAIRMAN KOTELCHUCK: No, there is nine. There's nine.

MR. KATZ: Nine sites. But, anyway, so why don't you all discuss that issue? Because that needs to be sorted out. And before you discuss it, John Stiver, by all means, jump in on the issue of why you propose what you proposed.

MR. STIVER: Okay. Yes, this is John Stiver. This is one of the situations where we've been doing a lot of these Site Profile and SEC reviews, a lot of them for sites that have had SECs awarded, yet we have this issue. How about workers who fall outside the SEC by virtue of the 250-day limit

or because they are skin or prostate cases, and the SEC petition will make a statement. There was an excerpt from the Joslyn petition that says that, you know, while we recognize that we can't do reconstructions for a particular set of reasons, we will, nonetheless, do partial dose reconstructions for people who are not included within the SEC using the data that are available.

And so we've seen this come out quite a bit. You know, like I said, I gave an example of about nine different sites that we've done, recently done reviews for where the same type of an issue comes up. This isn't something we've really focused in on the past, and some of these cases, you know, it was certainly obvious from NUMEC and General Atomics that NIOSH is really, they're going the extra mile to do everything they can to do dose reconstructions for these partial reconstructions for these other people.

And so we thought wouldn't it be,

it might be, you know, in the interest of the Board to take a more focused look at the situation and maybe select a few cases for review in like one of the upcoming sets, which, in this case, is the last set under this contract cycle. And because it is going to be kind of a contracted set due to time limitations, as Ted explained, we thought, well, maybe it might be good to just focus in on this particular group of claimants for this particular set of reviews. You know, it's a suggestion to put out there. It is a little bit outside of the usual process, but I thought it was worthy of bringing up for discussion at this meeting.

MEMBER CLAWSON: John, this is Brad. The only question I have is you've got Apollo and Parks down here, and I've just, I'm reviewing SC&A's Site Profile. We haven't even got that completed on those, have we? I know that SC&A just put out a Site Profile review for Apollo and Parks. Is that going to

affect in our review?

MR. STIVER: Really, these would be cases that are -- it's kind of like what we discussed earlier under the idea of the addendum. I mean, there will always be, you know, changes, and these are living documents. So, you know, when you take a case, you're doing a snapshot of time on the basis of, you know, what the guidance is at that particular moment when that case was selected.

So to answer your question, yes, there probably will be some changes to how doses are reconstructed for that particular site. Like I said, I didn't say these are the ones that we actually have to select from. These are kind of examples of some of the most recent Site Profile and SEC reviews that we've done, but that's a point well taken. I mean, we certainly may want to consider that in selecting cases.

MEMBER CLAWSON: Well, I've been doing the review of that Site Profile, and I

just noticed that, you know, SC&A had several issues with it that, basically, would come in at Site Profile. But, you know, what you're saying about what we talked about earlier may take care of that because it would be pushed over to the Site Profile Group or whatever. But I just wanted to make sure that it wouldn't create a problem as we're going through these because myself, personally, I'd like to be able to see a couple of, have a couple of these Site Profiles or dose reconstructions from these actually done to see how it does affect it, but that's my personal --

MR. STIVER: Yes, it might be a good time to showcase the changes that we're proposing to the checklist and, you know, if new issues come up or issues that are currently not captured in a particular reconstruction, that would go into the executive summary and also into this Table 3.

MS. BEHLING: This is Kathy

Behling --

MR. STIVER: But I think we have a mechanism for dealing with that.

MS. BEHLING: Sorry, John. This is Kathy Behling. The other thing I will make mention of --

MR. KATZ: Kathy, can you speak closer to the phone?

MS. BEHLING: Okay.

MR. KATZ: Thanks.

MS. BEHLING: Is that any better?

MR. KATZ: Yes, yes.

MS. BEHLING: Okay. I will make mention that I went down through this list and identified how many cases we've done so far for these. I don't think we have any for Joslyn and we didn't do any for Baker Brothers. And there have been for NUMEC Apollo, one for Parks, one for General Atomics, two for W.R. Grace, and three for Hooker, at least based on my, I may not have captured everything in there. But just to let

you know that this seems to be a good selection because we have not done a lot of cases associated with these sites.

MR. KATZ: And what do you have for Electro Met?

MS. BEHLING: Electro Met, I had one.

MR. KATZ: One.

MR. STIVER: You have one for Electro Met? Okay. Thanks, Kathy. Thanks for reminding me. I know you were going to go look into that. Bob Barton had pulled together a list of pages, as I indicated in the email, based on the criteria of the PoC list.

MR. KATZ: So three for Hooker and three for Huntington Pilot. Did I hear that right?

MS. BEHLING: Correct.

MR. KATZ: Considering the size of those compared to others, that's not so bad, right?

MEMBER MUNN: No, I don't think it's really bad, personally. This is Wanda. I found the suggestions interesting, but, quite truthfully, I don't see any real reason to change the process that we've established up to this point. At least at this immediate juncture, I don't see any need for that. We've taken into account many of the aspects that David mentioned in his criteria that he had used for selections in our earlier blind dose cases are the general kinds of things that we have traditionally taken into consideration when we make these choices. And they seem to be broad enough in scope and well thought out enough over preceding years to have served us pretty well. They've changed from time to time because of the universe that we're dealing with at each time, but, by and large, the criteria seem to be functioning well and I can't see any real reason right now to change that for this particular group.

It seems that the standards that

we've used previously would serve just as well for these, but perhaps I'm missing something. I haven't really looked at the group of claims that closely.

DR. MAURO: Wanda, this is John. I agree that the protocol for case selection has been, you know, in place for quite some time, ten years. And it generally, you know, focuses in on sites, types of cancers, PoCs.

MEMBER MUNN: You know, well, we thought about it a lot.

DR. MAURO: And you did. But let me add that I think that we, I mean, I've been thinking about this, also, and I think that that should not change. But there are other aspects that certainly have started to appear as being of value, in terms of should be given some consideration. And I think this is one of them. That is, partial dose reconstructions. It seems that, certainly, we've captured some, but it happened through the process and we did get some where we ended

up doing partials. I think that's important.

I also started to notice that, besides site and PoC and organ, one of the things that's becoming apparent to me that the places where -- and this goes for the selection not only of DR reviews but also for blinds. It seems to me the places where there often is a struggle is with neutron dosimetry and internal dosimetry to some of the more exotics. In fact, very often, those are the things that result in the SECs, but, in some cases, they don't.

And what I'm getting at is that we have our selection criteria, but I've noticed that there are certain places that could be challenging that we're not specifically looking for when we're picking our cases, whether they're for DR or they're for blinds. And this is one example of a dimension that we haven't looked at before. It only emerged recently while we were reviewing some of these, for example NUMEC was the real place

that triggered this. There was a fairly sophisticated approach to doing DR reviews for non-compensated cancers. They had data, they had an approach. And even though there was an SEC granted for that time period, they still did quite a nice job in attempting to do the DR, but there was a lot of judgment that had to be made. They sort of fall into a category that's interesting because you're trying to sort of squeeze as much information out of the data set that is available that will allow you to assign at least something to these people who have a prostate or skin cancer.

So I just, I think that what we're trying to do here is alert, I guess, the Subcommittee to some of the case selection issues that really have not been right in front of us and the aspects to it and the degree to which you find as valuable, you know. That's our intent. Just --

MEMBER RICHARDSON: John, a question. John and John. I'm looking at the

message, and the thing that struck me was the criteria involved claims with the PoC less than 50 percent among people who had worked at least 250 days in an SEC period but did not qualify for the SEC. And I agree it's an interesting problem.

Why was it less than 50 percent, as opposed to some values that were near 50 percent?

DR. MAURO: Well, this --

MR. STIVER: This is John. Yes, it was kind of, in a way, not really arbitrary but we just decided to take a look at those that would have been below 50 percent. I mean, we could have included up to 52 or some other number, but we just kind of want to get it as, basically, kind of a first approximation sampling of the types, the number of cases for the different sites that were out there. We can certainly modify that.

MEMBER RICHARDSON: The reason I ask is because I imagine the distribution of

Probabilities of Causation among people who are claimants that don't qualify for an SEC to be highly skewed towards zero. And the reason I would think that is, you can tell me if I'm wrong, I would believe that the list of cancers which are covered for the SEC would involve the more radiogenic cancers, and the list of cancers which are not covered would be those for which the radiation risk coefficients tend to be very, very low.

Secondly, the range of doses which can be reconstructed is, in some cases, limited by the definition of the SEC so that you can only do partial dose reconstructions. And under those two conditions, I would think, if we are looking at cancers like prostate cancer for which the doses get, in my recollection, again, get, you know, up to the radiotherapeutic range before you can get a Probability of Causation of 50 percent, we're going to have, we're looking at kind of dose reconstruction problems that are, and

following off this conversation we had earlier today, very hard to imagine scenarios in which the decision, if it's a binary decision where they compensated appropriately or not, is going to be really hard to find a situation in which that was the case, that something happened so erroneously that it involved differences on the order of grade.

MR. STIVER: This is John Stiver. Your point is well taken, especially as concerning prostate. You know, we did not look at the distribution of PoCs, and we can certainly do that. But I think in the situation of skin that we might still have a situation where there's value to be had by looking at these partials because, for example, John Mauro can probably jump in and has a better understanding of some of these, say, for NUMEC and Joslyn since he was heading those review efforts, exactly what the issues were there.

However, I would think if it was

an SEC granted on the basis of an inability to reconstruct an internal exposure, for example, we'd still, you know, know the external exposures and direct deposition, skin contamination. Those types of things would certainly bear on the reconstruction of the skin doses, which could possibly have PoCs that were approaching 50 percent.

MR. CALHOUN: Another thing to think about, and this is Grady, is that, generally, our SECs are granted because of the inability to do internal dose, right? And, generally, the non-SEC cancers are your prostate cancer and your skin cancer where your internal dose is almost, it doesn't have much of an impact because you don't give much dose to those organs on the point of intake because they're not metabolic.

So the PoCs, if you can actually do a full external dose reconstruction on a non-SEC cancer, they may not be that much different than had you been able to do the

internal or assign internal dose to those organs because they're non --

MR. FARVER: Well, Grady, let's say there's an SEC that says you cannot do internal doses, and then you get a case where you're going to do a partial one, like for skin. You're going to do a skin dose calculation. And let's say that person has bioassay data. You will calculate based on those.

MR. CALHOUN: Absolutely. The only time we wouldn't is if the SEC is granted because of falsification of internal --

MR. FARVER: I just want to make that clear, that even if the SEC sometimes says they cannot reconstruct the dose, if the person actually has data, whether it be external or internal, they will apply the data.

MR. CALHOUN: And the one thing, Jim, you know, the other one, the cases that are most often affected that you don't think

about so much are the less than 250 days. And if they have less than 250 days and do have some bioassay, if it's a leukemia or it's something that doesn't require a lot of dose, you know. We always think of lung cancer as being one of those but it's not. It's like prostate cancer. You need 60 - 70 rem to get comped. The problem is that it's easy to get that much dose to the lungs when you internal an insoluble compound. Just to confuse things.

MR. KATZ: No, that's helpful.

DR. MAURO: I think the dimensions that you are bringing up are all something that I agree with. I mean, the fact that skin and prostate are so prevalent naturally, I mean, requires such a high dose to turn a PoC of greater than 50 percent. That's a very good point.

When I was looking at NUMEC, I wasn't thinking in those terms. I was thinking more in terms of the dose

reconstructor is now in a position that's a little different than he is when it's not a partial. And it seems that a considerable amount of judgment has to be made with regard to using the limited data that are available. And, therefore, how that's done, especially among different sites and different dose reconstructors, you know, in making these interpretations of how best to make use of partial data is something that is different than what we were looking before.

But you're correct. When I was thinking about NUMEC, I wasn't thinking in terms of the prostate and the skin as being something that requires very high doses. And it's unlikely that we're going to get greater than 50 percent. You know what? That probably is still true, but I wasn't looking at it from that perspective. I was looking at it from the perspective of it's a different kind of dose reconstruction than we usually see.

MEMBER MUNN: And this is Wanda again. I guess I'm still not convinced that because it's a different kind it would not be captured or well incorporated by this same process that we've used in the past. I mean, that's the only point I'd like to make. I just see that each universe of cases that we have is likely to have different circumstances surrounding it, especially now at this juncture in the program. But I don't see that this extension of different kinds of cases that we didn't see six years ago doesn't really change the validity of the criteria, as I see them. I just don't see a compelling reason to change our process. We would undoubtedly discuss this very kind of thing as we're looking at each new set of potentials, at least we always have in the past, unless we intend to change the way in which we present potential claims to the Committee, to the Subcommittee for selection. I haven't heard any reference to that.

CHAIRMAN KOTELCHUCK: Thoughts by Mark or for John on the line? Did you have any thoughts on this, about criteria?

MEMBER POSTON: I don't have any substantive comments.

CHAIRMAN KOTELCHUCK: Okay. Mark, are you there? Maybe you're on mute. Okay.

MEMBER CLAWSON: Dave, before you start off, I understand what Wanda is saying on this, but I think we're also up against an NRSD situation. What SC&A has done out here has given us some sites that don't have that many. And, basically, it falls back a little bit on this Committee that it takes us so long to be able to make these decisions going through it.

My personal feeling is I don't see an issue at this time of calling these out and kind of focusing on two of them. But I'm along with Wanda that I don't, I don't want to see this as a normal process, but I think we're also up against the wire to be able to

keep SC&A working forward and also make it so that they can complete their contract by the given time, too.

I don't think that we're saying that the way we've done it is wrong or anything else compelling that way. I just think there's some little caveats that would help the process go into it and get the contract done.

CHAIRMAN KOTELCHUCK: Right. So you're just saying this is an end to the contract issue and we'll --

MR. KATZ: Well, that doesn't need to, I mean, the end of the contract doesn't need to affect this at all. I mean, you needa set number of cases, up to ten cases, to get selected. So this is a separate issue from the fact that it's the end of the contract.

CHAIRMAN KOTELCHUCK: So we should just accept what you're saying. Are you saying that we should --

MR. KATZ: I'm not saying that --

CHAIRMAN KOTELCHUCK: -- that they said they could do ten, and the question is --

MR. KATZ: The question is --

CHAIRMAN KOTELCHUCK: -- is this a reasonable selection for ten?

MR. KATZ: Right. Do you want to change your current procedure for how you select the cases? That's the only question on the table, so, I mean, I think the three of you have to decide do you want to change your selection procedure? Otherwise, we just tell DCAS to do the normal thing, and they'll select whatever, 25 or 30 cases from which you guys will select ten.

MEMBER CLAWSON: If it's being -- this is Brad. If it's being put just that way, then, no, I don't think that we should, I don't think we should go from our normal way of picking out the process. You know, we've got a wider selection than the other one.

CHAIRMAN KOTELCHUCK: I don't want to do a permanent change. I don't see any

reason to. And implicit in what you're saying, Ted, is that this is a change in procedure that might carry on for the future.

MR. KATZ: Well, I'm not saying that you would have to carry it on in the future. I'm just saying it's a change from the procedure you've used heretofore. That's all. And the procedure you've used, I mean, I think you guys have room to do this. I mean, it would be preferable if you could actually consult the rest of the Board since your procedure that you're standing on right now is one that you developed with consultation with the whole Board.

But, again, it's only ten cases anyway, so it's not the end of the world however you want to handle this. It's just, you just need to make a judgment as to how you want to handle it so that we can get DCAS working on selecting a larger set of cases from which you guys can choose because the aim is to get these cases selected as soon as

possible, certainly by sometime in August, so that they can get to work on these cases.

CHAIRMAN KOTELCHUCK: Yes, but we do have to go around the Board, if you will. That is, this would normally come before the Board. No, it would not normally come before the Board.

MEMBER MUNN: No.

CHAIRMAN KOTELCHUCK: It's standardized by Board decision.

MR. KATZ: Right.

CHAIRMAN KOTELCHUCK: And we're saying we're going to do this through committee in this case.

MR. KATZ: And I'm saying you can if you want to. If you want to change things up, I'm not too worried about that for this small sample. But it's not going to disrupt the world.

CHAIRMAN KOTELCHUCK: Right. Maybe it's worth repeating, John Stiver, why we want to do this this way. I know you said

it in your email, but the issues are a little sharper now.

MR. STIVER: Yes. This is John. And, also, what John Mauro had said, I mean, it represents a kind of a new type of case. The sites are somewhat underrepresented, as Kathy described. Those are really the two big reasons that we thought it might be of interest to not necessarily replace the existing process but just maybe consider this in addition to.

MEMBER RICHARDSON: Yes. And I think the counter-argument is, if the sites are underrepresented, then we, you know, we try and sample to kind of get a representative coverage of the sites.

MEMBER MUNN: We do, to make the proper decisions.

MEMBER RICHARDSON: And Wanda, I think, has posed a question of whether the way these are handled is, in fact, unique or new. In practice, what's done looks more similar

to other problems of dose reconstruction. And that latter point, you know, I think is debatable.

CHAIRMAN KOTELCHUCK: What is the crisis that occurs for, what is the problem - let me use the more neutral term. What is the problem that occurs if we continue with our old process?

MR. KATZ: There's no problem. And the other thing I would just point out is some of these are not underrepresented. Some of these actually are doing better than the sampling for other larger sites, for example, given the total number of claims. Because your sampling rate right now is one percent or something, right? So some of these are actually doing better than other sites.

MEMBER MUNN: Given the variety of criteria that we apply, that's something that you could be expected to see. We don't choose on site alone. You know, we sort by a half-dozen different criteria, and that makes it

likely that we're going to see that some will be overrepresented, some will be underrepresented, but the ideal statistically is not necessarily the ideal from our oversight viewpoint in any case.

MEMBER RICHARDSON: So could I propose a suggestion? For the time being, we continue drawing the cases the way we've been drawing them and that we keep this issue of claimants which are within facilities covered by SECs but their claim is not covered by SEC kind of on the horizon. If a case can be made that we're really not doing them justice, then I think that's an important thing for us to think about. But right now it's not clear how best to evaluate that problem.

MEMBER MUNN: That would be my suggestion, and I personally would be very pleased to make a motion to that effect if we feel a motion is necessary.

MR. KATZ: You don't actually need a motion. We just need to ask DCAS to pull

the cases, and I think that's a great approach because if you see a case or two that sort of addresses this you can pull that from the cases that are selected for review.

MEMBER MUNN: We can easily incorporate whatever we choose.

MR. KATZ: Right. So if we're aiming for approximately ten to come out of the process, then I think it would be good to have at least a ballpark of 35 cases. Doug, does that sound about right to you in terms of proportion from past experience?

MR. FARVER: I guess. That's three to one.

MR. CALHOUN: Thirty-five cases.

MR. KATZ: About 35 cases pulled.

MR. CALHOUN: What other criteria? So we'll be talking about a lot of stuff here.

MR. KATZ: Well, the normal criteria that you've been applying for the past couple of sets, apply those same criteria

which relate to --

MR. CALHOUN: There's nothing to change.

MR. KATZ: Nothing has changed.

MEMBER MUNN: No.

MR. CALHOUN: Right.

MR. KATZ: It's just a new set of 35 cases and as fresh as possible, in terms of cases.

MR. CALHOUN: And what?

MR. KATZ: As fresh in terms of adjudication as possible.

CHAIRMAN KOTELCHUCK: And other Board Members, anybody want to comment on that, in addition to Wanda, particularly those on the phone?

MR. KATZ: I think we only have Wanda on the phone.

CHAIRMAN KOTELCHUCK: I thought Dr. Poston was on the phone.

MR. KATZ: Well, we just asked for him a moment ago, and he didn't answer.

MEMBER POSTON: I did answer, Ted.

CHAIRMAN KOTELCHUCK: Yes, you did. I'm glad you said that because I'm saying to myself what did I think I heard? Yes, you said you didn't have an opinion at that point.

MEMBER POSTON: I didn't have a substantive comment.

CHAIRMAN KOTELCHUCK: Right, okay. Good, good. No, there was a mistake. That's fine. You did speak, and I'm right. I'm glad I'm right because I'm saying, am I hearing things?

So do you or Brad, do you have comments?

MEMBER CLAWSON: No, I'm good with it. We'll get it done as soon as --

CHAIRMAN KOTELCHUCK: Yes, right. And I'm good with that as well. So I think that we have decided and we're --

MR. CALHOUN: The only other criteria was 45 to 52, was that right? PoC,

is that what we were doing?

CHAIRMAN KOTELCHUCK: Yes, that's what we have done. Yes, we have.

MEMBER CLAWSON: All covered by SEC.

CHAIRMAN KOTELCHUCK: Okay.

MR. CALHOUN: Not covered.

MEMBER CLAWSON: I think it was not covered by the SEC.

MR. CALHOUN: Well, we wouldn't have a DR if it was, unless you're talking about one that was redone. So you don't want one that was pulled after the DR was done. Yes, that would be worthless, wouldn't it? Okay.

CHAIRMAN KOTELCHUCK: Okay. Well, it's about 11:30, a little after 11:30. I think we should go to our case resolutions. And we have a couple of issues left over from cases 8 and 9, Sets 8 and 9. Excuse me. Well, we'll go to them and --

MR. FARVER: I believe everything

is in the attachments, all the new material?

CHAIRMAN KOTELCHUCK: Yes, it is.

MR. FARVER: Scott provided a file. And I believe the first one is Attachment 1, Finding 3. Attachment 1, Finding 3 of Set 8.

CHAIRMAN KOTELCHUCK: Okay.

MR. FARVER: And NIOSH has submitted a paper about routine uranium skin contamination. And this is the Bridgeport Brass facility.

CHAIRMAN KOTELCHUCK: Okay. One moment.

MR. CALHOUN: What's the title of the attachment you're looking at?

MR. FARVER: 30 case matrix, I believe. March 25th.

MR. CALHOUN: Okay. And then what finding number?

MR. FARVER: Attachment 1, which is the very bottom, Finding 3.

MR. CALHOUN: That's what confused me.

CHAIRMAN KOTELCHUCK: Now let's see what NIOSH said. Where are we, so what does that --

MR. FARVER: Are we all on the finding, Attachment 1, Finding 3?

MEMBER RICHARDSON: Is this 149.1? Is that the --

MR. FARVER: Where it begins?

MEMBER RICHARDSON: Yes.

MR. FARVER: I believe so.

MEMBER RICHARDSON: Okay. This relates to the upper 95th percentile of external dose? Is that the --

MR. FARVER: No, no, no, we're at the very bottom of that. We're in the attachments on Bridgeport Brass.

CHAIRMAN KOTELCHUCK: Oh, okay.

MR. FARVER: There's three attachments.

CHAIRMAN KOTELCHUCK: Yes.

MR. SIEBERT: In that file -- this is Scott. In that file, it should start on page 97 --

CHAIRMAN KOTELCHUCK: Got it, okay. We were looking at the wrong --

MR. FARVER: Scott sent a file, NIOSH sent a file that discusses Bridgeport Brass Finding 3, discussion on uranium particulate skin doses.

MEMBER RICHARDSON: Wait. I'm still not finding this. Page 97 doesn't have that.

MEMBER MUNN: Do you have the date of that transmission handy?

MR. SIEBERT: It's the beginning of the finding. You'll see the green on page 98.

MR. CALHOUN: Yes.

MR. FARVER: I believe, Scott, you sent that on Friday.

MR. SIEBERT: That went on Friday, correct.

MR. CALHOUN: And it's also in the, I believe it's in the folder. Stu sent it over, I think --

MEMBER MUNN: Oh, well, yes, but for those of us who can't get to anything that has CDC on it, that's -- all I have is what went out in February. Okay. I'll do without.

MEMBER RICHARDSON: Attachment 2, Finding 3?

MR. FARVER: No, Attachment 1.

MEMBER RICHARDSON: Okay. Here we are.

CHAIRMAN KOTELCHUCK: Okay. Take a look at it again. Right, right, right. NIOSH, ORAU notes from 12/11 meeting indicated will conduct initial review on this finding. And what is your comment? Is that the one in blue?

MR. FARVER: Scott sent a file. It's called SCA BB number 3, HAR number 4. So it covered Bridgeport Brass and Harshaw. It's called routine uranium skin contamination

where they discuss, they provide their discussion on the uranium particulate skin doses.

CHAIRMAN KOTELCHUCK: Did somebody go off or --

MEMBER CLAWSON: Here you go.

CHAIRMAN KOTELCHUCK: Okay, thanks. Oh, yes, okay. Time for some of us to read this over. Take a few moments.

MR. FARVER: And then when you're ready, we'll have Scott or someone present the discussion and then someone from SC&A who's on the line, hopefully, will be able to answer.

CHAIRMAN KOTELCHUCK: Okay.

MEMBER CLAWSON: Is it Scott that's going to --

CHAIRMAN KOTELCHUCK: Yes.

MR. FARVER: Someone on that side of the house.

CHAIRMAN KOTELCHUCK: Scott, are you ready to talk?

MR. SIEBERT: Yes, does everybody

have it up?

MR. CALHOUN: Yes.

MR. SIEBERT: Okay, good. This is very easy for me because I'm going to turn this over to Mutty Sharfi, who wrote this for us. So, Mutty, do you want to take it away?

MR. SHARFI: Sure. Can everybody hear me?

MR. KATZ: Yes. Thank you, Mutty.

MR. SHARFI: Okay. For the Bridgeport Brass, the conceptual question was about extremity dose and it kind of blew into about contamination, routine contamination of the skin and was there a skin dose associated with just generic kinds of contamination from general work being done.

So what we did was I kind of looked at how we generally model deposition of material from the air to any kind of surface and modeled, basically, a daily deposition of the, you know, using the air concentration during the operational period and had it

deposit equally on the skin just like it would deposit on any surface.

We assumed that the unexposed skin would have been your head, neck, and hands, which accounts for about 14 percent of your overall skin surface. Based on that, we used some generic dose per unit activity. Assuming it was all uranium-238, because that would be a worst-case scenario, so assuming a 40 millirem per 10,000 dpm per centimeter squared. You could calculate then the dose to the affected skin area, and then you would, based on OTIB-17, you would adjust that to the total skin, and OTIB-17 gives you a procedure on how to convert from affected area to total skin dose.

And doing that, based on the air concentrations that were described in the TBD in Bridgeport Brass, we got a fairly small dose, I think about 10 millirem, to the overall skin that would be assigned per year. And then if you really get into more

realistic scenarios, it actually gets to less than 1 millirem.

So that's a general overview of what we assessed. If you want me to get more into the details of the calculation, I can. But I'll let you ask me how detailed you want me to go into.

MR. CALHOUN: I think they're all reading here, Mutty, still.

MEMBER RICHARDSON: Well, we're not reading, we're discussing. We have two theories for the head, neck, and hands. One relates to the sites in which skin cancers tend to arise. The other relates to pathways of exposure. So what's your, what was the motivation for selecting those parts of the body, as opposed to other parts of the body that are covered with skin?

MR. SHARFI: You mean, specifically, the head, neck, and hands as my assumption?

MEMBER RICHARDSON: Yes.

MR. SHARFI: Okay. Well, I'm assuming that most people work with coveralls and stuff like that. You're not going to -- you'll have deposition on the coveralls, but you're not going to have it directly on the skin of the, you know, the chest or the back. And since we're talking about uranium, you're not talking about, you know, penetrating dose through the coveralls, really, for beta exposure.

So really the dose of the skin is going to be unexposed areas. I'm also assuming that they're not wearing gloves because if they were in gloves then you probably could remove another five percent of the, you know, what is exposed skin.

MEMBER CLAWSON: Mutty, this is Brad. I understand what you're saying. You're calling it out just like that. But many of the places, I don't know how you can hold that to a total standard. Slather anything else like that would spread it

throughout the body down the back or anything else like that, increasing your body mass. But then you'd have to be covering. I really question where you come up with 14 percent of that because --

MR. SHARFI: Fourteen percent is a standard. If you go into any, like, burned skin victim adjustment, they generically identify what percent of the head, the neck, and the hands represented the total body surface area. Fourteen percent is what those three areas generically represent for total body skin area.

MEMBER RICHARDSON: Yes, I believe what he's saying is he questions the assumption that the skin that is potentially exposed is limited to the skin of the head, the neck, and the hands.

MR. SHARFI: Well, you're talking about what total contamination goes down. All the sweat would do is maneuver activity from, let's say, the neck to the back. But, you

know, you're still talking about the same amount of area that it's being deposited on.

CHAIRMAN KOTELCHUCK: There is no question that the person was wearing some sort of skin protection? They were wearing clothing. Right, okay.

MR. SHARFI: So we're talking about exposed skin that has ability for direct material to be deposited on. Remember, this is a hypothetical. We're not, we're not -- if you gave me a specific scenario, then I may assess differently. If a claimant says, no, I was wearing tank tops, okay, well, then maybe your whole arms then would be exposed, too. I mean, or they always wore short sleeves or whatever, I mean, you know, or they worked in shorts. I made a generic assessment based on the majority of people that worked in a, you know, in an area are going to wear at least long-sleeved shirts and pants and shoes. You know, and they're not going to have anything covering their head. You know, if you're

working in a metal foundry, you're probably going to have a face mask, at least for the heat, you know, a face shield or something like that. So I'm not accounting for anything like that --

DR. ANIGSTEIN: Yes, this is Bob Anigstein. I just called in.

CHAIRMAN KOTELCHUCK: Yes.

MR. FARVER: The original finding said exposures to localized parts of the body, such as the hands and forearms, from non-penetrating radiation for some workers could be missed by film badge monitoring and, as a result, the exposure matrix may not be claimant-favorable for some workers for Bridgeport Brass. So that's what the finding was based on, using the film data.

MR. SHARFI: Yes. And the initial discussion was, I know on an extremity basis, we handle extremities on a case-by-case basis. And then I believe John got into a discussion, well, what about just generically,

if you're having, you know, your extremities being, you know, having contamination, are you routinely seeing exposure that would not be accounted for by the badge but would, you know, then be talking about just generic contamination and is that something that we need to address? I mean, this got expanded into -- and that's why this particular assessment was done was there an issue with generic contamination to the extremities that would cause unaccounted for skin dose?

CHAIRMAN KOTELCHUCK: Okay. And that just suggests that that is not a problem.

MR. SHARFI: Correct.

CHAIRMAN KOTELCHUCK: Right.

MR. FARVER: John or John, do you have any comments?

DR. MAURO: John, do you want to start this or could I start it? Whatever you'd like to do.

MR. STIVER: This is John Stiver. Yes, John, you've been working, you and Bob

Anigstein. I would like to talk about this because you both have been dealing with this idea of, you know, the deposition of relatively large flakes of uranium and the localized dose that might result from it and also the, you know, the consistency with NRC and DOE approaches that we talked about quite a bit yesterday, so you guys --

DR. MAURO: Yes, let me unpack this a little bit because I think I really was triggered by some of my concerns about small uranium particles falling on the face, neck, and ears. That's really what triggered this concern because I run into a lot of dose reconstructions at AWE sites where the exposure includes a person exposed to a beta radiation from external sources because they're standing close to, let's say, a slab of uranium, and you'd get a readout on the open window of the badge. And that would be your classic example that, you know, NIOSH performs all the time.

But there is this other scenario that I run into when I work on AWE sites where, in addition to being externally exposed nearby, to a nearby source of a beta emitter, such as uranium with its short-lived progeny, I have seen many cases where a person was working in an environment where there were flakes of uranium being generated from grinding and other operations on the metal where the circumstances, where his exposure to his skin, especially his neck and head, include, of course, the direct beta. I would call it that external, I mean at a distance, beta at some distance, which would show up on your film badge, theoretically, that you wear on your lapel, for example.

And I think that, to a large extent, Mutty just described an approach, but please bear with me because it's a conceptual thing that I want everyone to be on the same page. My concern is that, well, if a person has, and I see these all the time, cancer on

the neck or the ears or the forehead, now, we all know that these kinds of skin cancers are very common from exposure in the sun. But, at the same time, these workers are in these places where -- and they're not all places, but I do see a lot with the old AWE sites -- where these particles are generated and could very well have fallen on a person's skin and be there for some relatively short period of time before he, let's say, goes home and showers. So maybe over an 8-hour or 12-hour period, he may have this particle on his neck.

Now, I bring this up, I'm not saying there's a major issue here, but it's a dose to the skin that has not, in my opinion, ever been explicitly addressed. And I bring it up because, very often, we'll see a person who worked at an AWE site. They may have been granted an SEC, and they do a partial dose reconstruction as best they can. But one of the problems is the skin cancer is not covered.

So I ask myself -- so what I'm getting at is here we have a lot of cases where we have skin cancers on the face and neck and ears, and it happened to be that the worker was working in an environment where there was a good possibility that these small flakes could have landed on his skin. And that goes toward, that's what really triggered the question how is NIOSH dealing with that. And Mutty just described one approach. What he said, as well, the way you would do it is you could estimate how much radioactivity is falling on the skin based on what I call the classic settling approach where what they do is they say we know the airborne dust-loading and, let's say, in micrograms per cubic meter or becquerels per cubic meter and we know the rate at which it settles and we agree with all this. And these are typically 5 micron AMAD airborne particles, very small particles, and they do settle at a known velocity, and they will settle on the skin, on the face, the

neck, and they settle on the clothes.

And as Mutty pointed out, if it's on the clothing, you get a fairly nice attenuation of the data. But if they fall on the neck and face, you don't.

Now, that scenario and the approach Mutty described certainly seems to be a reasonable way to get at the deposition of very fine airborne particulates, like 5 micron aerosols or particles that settle out. But that wasn't really my concern. My concern was more a large particle that would fall, let's say, on the neck and stay there for some time period. It may be, you know -- that's a tough one to say. But I would agree that, in all likelihood, sometime during the day the person is going to take a shower and, you know, there's a good chance that it will be washed off at that time.

So, now, here's the difference between how Mutty is thinking about it and how we are thinking about. We're saying that,

well, if it's a particle that's, oh, a centimeter or a half a centimeter, but it's a flake, you know, like snow. And it has some thickness. It will be thin. It will be a flake. Now, that's a lot different than this very, very fine 5 micron AMAD particles that are settling uniformly over the exposed skin, and I think that the doses underneath the particle could get fairly high, in the order of hundreds of millirem per hour, maybe up to, I think, a max of 230. I mean, if you had a fairly large particle, which may be unlikely, but we're talking about fairly high localized dose rates right underneath the flake that may be, let's say, 50 millirem per hour, or 60 or 70, in that order. And then, of course, the number of hours, that's another question. But it's a lot different scenario than the scenario Mutty just looked at.

And I think there's still some ambiguity regarding how you calculate that dose. That is, do you assume that scenario

that I just described and when, under what circumstances would you think that's a plausible scenario, that is a large flake could fall on a person's neck? And, second, if you do do that, how do you calculate the dose? Oh, it gets to the basal cell epithelial tissue, which would be, you know, where you're concerned with. And, finally, how do you derive the Probability of Causation associated with that dose? And I still think that we haven't really heard an answer to that, but, you know, maybe it's embedded in OTIB-17 in some way, but I think that question is still on the table.

MR. CALHOUN: John, this is Grady. I'd like to address this a little bit. We've routinely and, I guess, historically only dealt with these on a case-by-case basis. And you've got to really think of what the potential this is, this has of happening. You're almost talking about a hot particle type piece of uranium that is transported

through the air somehow and lands on an unclothed portion of the skin. That's not a super likely scenario.

I mean, I don't know if you've been around uranium machining, and I guess that would be the most likely situation. It's typically done under coolant, and you don't have a bunch of particles flying around. We certainly didn't -- I didn't see that a lot where I worked at the uranium facility.

But I think you almost get down to a point that, if we do it that way, you're either assuming that everybody who worked at a uranium facility and has exposed skin was exposed to uranium particles in an assigned dose or you don't and you base it on any kind of contamination incidents or something documented. And I realize that at some of the AWEs we don't have great documentation of personnel contamination incidents.

We do assign such doses when we know that there were issues, and we do assign

them uniformly to skin contamination. I believe it's either Idaho or Hanford that we do that, but those are based on documented releases of material that was not uranium, it was reactor type material.

So when you look at, in my mind, if you look at the potential of what you're talking about happening, I think it's fairly low. And the only way to deal with it is just assume that everybody was exposed to hot particles, and then how far do you go with those types of assumptions? You can just keep going and going and going.

DR. MAURO: Well, I agree with you. I think that this is certainly a Pandora's box. But at the same time, you know, I live in the AWE world where I'm doing dose reconstructions to workers in the 1940s and early `50s. And I've looked at Bethlehem Steel and Simonds Saw where we had detailed descriptions of the environment in which they were operating. And even the early years of

Fernald where there was, the actual visibility was affected by the airborne particulates. I mean, you have stories told of the types of activities that were taking place were not of the type that you or I would have ever experienced working at a licensed facility, DOE facility or NRC-licensed facility. Clearly, that's not the case.

But at these old AWE sites, from just reading about it and not having any personal experience, it sure sounded like the potential for generating these flakes was real. And it's not that complicated. I mean, I just read that and I said, gee, it seems to me that it's not impossible. It seems very likely that some people were contaminated by flakes, as opposed to the settling of these 5 micron AMAD dust particles that come down.

And if that's the case, you know, then this scenario that I just came up with, you know, seems real to me. But, you know, if there's reason to believe that, no, it's not a

real scenario, that is people just don't really experience that, that's fine. I'm glad we're talking about it now because I haven't heard that answer yet. The answer you just gave, that is, it really doesn't happen, is the first time that's been said, I believe, you know --

MR. CALHOUN: I can't say that it doesn't happen. I can say that, from what I -- I don't believe it's something that's rampant, and it's somewhat speculative. And one of the things that I've looked at based on past AWEs in particular but uranium machining in general is that a coolant was always used, even back in the old days. And that was to prevent fires, for the most part.

DR. MAURO: They do see lots of sparks, though.

MR. CALHOUN: Sure, sure, sure.

MR. SHARFI: So, John, can I --

DR. MAURO: Yes, sure, help.

MR. SHARFI: John, this is Mutty.

I can also add that, if you're looking at the total skin dose, also, as you get to smaller metal flakes, the affected surface area goes severely down. So the adjustment for total skin dose really is more a factor of having larger contaminated skin areas than it would be having hot particles or, you know, really, flakes. So the total skin dose, if you're just talking about -- since the dose per unit activity of uranium is like -- like at Hanford, you're talking hot particles of, you know, mixed fission products, so the dose per unit hot particle is much, much higher than uranium.

So when you make adjustments to total skin dose for uranium, you're not seeing the same kind of overall skin dose that you'd see from, like, a hot particle from mixed fission products in Hanford.

DR. MAURO: I agree with that completely, but I think that we just changed subjects. Bear with me, please. I think that

the first question is: is the scenario I just described something that is considered plausible and should be somehow explicitly addressed? Now you're saying that, even if we were to explicitly address it, the doses would come in very low because it would be a small particle on a small localized area, and when you use the -- you would then dilute that over the 18,000, I believe, centimeters squared.

So what I'm getting at is: so there's two phases to the process. One is: what is the scenario that we're trying to reconstruct, and is it a plausible one? And, two, given that it is plausible, how do we do it? I don't know if we've gotten to that -- and I do have some issues and questions regarding how you would do it because I think that I have some idea of what it is you would do if you were going to do that calculation. But that's a different subject.

I mean, I think it's important that some consensus is, we converge on whether

we consider this, I'll call it the flake scenario, and not of the type at Hanford where it's a true hot particle. I've only brought this up from the perspective of uranium oxide flakes being generated during the machining of uranium at old AWE facilities, and I'm not bringing it to the -- so it's a whole special circumstance, but it turns out it's a common circumstance. That is, we have lots of, you know, dose reconstructions that I've looked at from AWE facilities where this was, where the skin dose, cancer of, you know, basal cell, squamous cell carcinoma of the face and neck and ears is a common one and none of those were ever assessed from the perspective of a flake falling on them and being responsible for, possibly being responsible for that cancer.

Now, if that scenario is not a real scenario, I'm fine, I mean, if that's the case. But it seemed to me to be a plausible scenario for these old AWE sites. And I think

we've got to get to a point where either we agree that it is a plausible one or it's not. If we get to the place where we're saying it's not plausible, then we're done. But if we say it is plausible, then we go to the next stage which you just brought up which has to do with how do you do the dose reconstruction and how do you do the Probability of Causation? That's the back-end of the discussion. But I'd like to close out the front-end of the discussion to see if there's agreement on this scenario.

MEMBER POSTON: John, this is John Poston, if I could just get a word in edgewise. I tend to agree with Grady. I think most of the particles that would be generated would be taken out in the coolant. It seems to me that those particles that somehow are released into the environment would be pyrophoric, and that changes the whole scenario.

When we looked at hot particles

and talked about fuel fleas and stuff like that, what we found out, even with calculating in doses, that hot particles were equivalent to, roughly, a paper cut in terms of their harm to the individual. And unless you can give me data, and I would really like to have data, if you can give me data that shows that these workers had depositions in their ears and so forth, then I might look at this in a different view. But I think that's not, to me, that's not a plausible. There may be other sources of radiation exposure. I certainly have a face to show that I've been exposed to radiation, but it wasn't from tiny little particles. So I just, I have difficulty accepting that as a plausible situation, but I'm also smart enough to know that you never say never.

DR. ANIGSTEIN: This is Bob Anigstein. I thought I'd weigh in on some of my own observations. We did a -- I don't know if this was mentioned, we did a parametric

study using MCNP of different-sized particles with hypothetical landing on the skin, and we got doses, at that time we simply took the average exposure directly under the particle. We did not average it over a larger area, and we got doses, if I remember, as high as 230 millirem per hour.

So if you say that that, you know, this could have lasted, the worker could have gotten it sometime during the day, early in the day, maybe he doesn't shower until the next morning, you have a possibility of a 24-hour exposure. And I've even some references that said that sometimes it doesn't come off in the shower. Maybe eventually it does, but it doesn't immediately necessarily come off.

But I was thinking more, because John Mauro and I had a discussion about this, more about it. One way to philosophically approach this is, in statistics, it's called the null hypothesis. And the null hypothesis in this case would be that the radiation of

the hot particle did not cause the cancer. And to prove the null hypothesis, you have to show that it can't happen. And the only way to approach this would be to simply assume that the particle landed on the cancer site and calculate the dose just over that area and, you know, and run IREP. And if IREP tells you that it's not sufficient, that, even then, the Probability of Causation is less than 50 percent, then you're done.

But until that's established, the argument that says, well, it's a small dose, we don't have to consider it or it's an unlikely scenario, it's not an unlikely scenario because it's also unlikely that somebody gets cancer, period. Not everyone gets skin cancer. So if they do have a cancer, then, right away, something unusual has happened.

Yes, I know cancers can be caused by some exposure in other things, but I've just, you know, I've been in the sun a lot,

I've been around a long time, I've been exposed to the sun for a very long period of time, very long periods of time, I never got skin cancer. So not everyone gets skin cancer.

So that's the approach. It doesn't mean, it doesn't presuppose that the cancer was caused by the hot particle. It just gives the worker the benefit of the doubt. We put the particle there, see what the dose is, run IREP, and then nobody can claim that the worker was not given, the claimant was not given the chance.

It's a claimant-favorable approach. It's not scientifically implausible. And, again, I'm not saying that it's necessarily that the particle landed there. But since he got the cancer, it's a claimant-favorable assumption to say that's where the particle landed.

I'll just wind up in a couple more sentences. If you assume, if you dilute it by

18,000, then what you're really saying is that there's no correlation between the radiation dose from the particle and the skin cancer, that the particle can land on the head and the cancer can be on the toe. And that just, that is not plausible. I'm done.

CHAIRMAN KOTELCHUCK: This is Dave. Dave Kotelchuck. But the evidence that was brought, I mean, the question, to me, gets back to the evidence. Early on in the discussion, John, I think it was John Mauro said that you had read in previous accounts that there were, back in the `40s and `50s, that there were people working with lots of dust flakes around so you could hardly see. I mean, did you see that, how often did you see that, or were there a number of cases in which you saw that? I mean, that, to me, is evidence.

DR. MAURO: The answer is no. The answer is no. It happened in Bethlehem Steel. I'm not sure whether or not Simonds Saw.

But, I mean, you're absolutely correct. This is something that seemed to be a plausible scenario. But if it's not, you know, it's not.

MEMBER CLAWSON: John, this is Brad. I guess I've got to go back to some of the interviews we've been involved with. Grady may remember this one, and he talked about the machining of it. But you also brought up grinding and so forth. That, you know, I could see a little bit more because when we were in Kansas City we were talking to a machinist that had been machining that uranium, and we talked about the pyrophoric aspect of it, and he spoke of the fire that had happened. He wasn't involved with it but the fire -- but, also, he talked about the pieces would pop off, you know, and it would burn you on different spots because they're popping off. That's when we were talking about the pyrophoric part of it, but he talked about these pieces.

You know, they did have coolant on them, but some of them did pop off and land on their hands and their head and so forth like that, and they just, it kind of burned them a little bit. And that's what the contents of the whole thing was was the burning of it, not as a hot particle. I did not look at it in the context that you're saying, John.

So I just wanted to make sure that you realize that we have seen and discussed situations like this, but I don't know how you would, how you'd cover this.

DR. MAURO: Yes, let me add one more thing. One of the scenarios at Bethlehem Steel that generated most of the airborne particles was the rolling operation and dragging the rods over from one location to another where they describe lots of sparking and flaking and oxidation. So it's not only the grinding which is done on the oil, the drilling which is often, you know, where -- so there were a lot of activities that took place

working with metal uranium where flakes and sparking and flakes were generated. I mean, that's what the flakes are, in effect. They're sparks come off, and that's basically the oxidation. Uranium is chipping off, oxidizing, and becoming an airborne particle that then eventually settles out. The size of the particle could be very fine or it could be, as best I can tell, also a flake.

So it's not -- and, Brad, I agree. So there are many ways in which you could say that you could get this airborne particle, and the size of the particle, of course, is uncertain. And, really, we're back to the scenario again. Whether this is a plausible scenario, for at least the early AWE years where they were rolling uranium and machining it and doing these --

CHAIRMAN KOTELCHUCK: I mean, there should be --

MR. STIVER: If I could jump in for just a second. This is John Stiver.

CHAIRMAN KOTELCHUCK: Sure.

MR. STIVER: Something that John just brought up, which I was ready to jump in right when you started, in 2010, Bob Barton and I and Sam Glover went up to upstate New York and we talked to some of the workers at Simonds Saw and actually toured the facility. And some of these guys described exactly what John was saying.

Reading, also, the descriptions and the Site Profile and some of the other source documents, these flakes of uranium oxide were really coming off mainly during the rolling operation. It's also where you found the, based on the DWE work that HASL did, the highest concentrations were right around those rolling mills. And there were, these guys would talk about just dust piling up there. They would take brooms and sweep it out of the way and, eventually, they'd put some steel latticework down there to help control this build-up of dust. We're not just talking

about this airborne invisible 5 micron or very small respirable particles, but there were huge amounts of this material coming off, and the guys were either rolling this, dragging it down, bringing it back. Sometimes, they'd roll them seven or eight times until they got the right dimensions. They'd talk about just getting covered in this stuff.

So, to my mind, in my mind, that is a viable scenario for exposures.

CHAIRMAN KOTELCHUCK: In my mind, it sounds like there is evidence or not in the worker interviews over the years in AWE facilities and perhaps others, and I don't know how one goes back and looks at that because people were interviewed at different facilities. But there would be evidence there if somebody were to go through the worker interviews, and that, to me, would be hard evidence. Particularly, we were not focusing on that in terms of the dose reconstruction, but the workers, undoubtedly, would describe

those things. And I would be much more comfortable adding, if I thought there were a number of cases where workers have reported this.

It is absolutely plausible -- not only plausible -- well, I haven't been in on those interviews, so let me not say what's plausible to me. But there were certainly sites, I would think, where you had dust accumulation in different parts of an industrial plant where things were just sitting around and then, sooner or later, somebody walked by and disturbed them or somebody tried to clean them up and this went on people's bodies.

But that would, but those worker interviews have information that could convince me one way or the other that this is not only plausible but happened. And then I would decide based on that.

MEMBER RICHARDSON: Can I ask a somewhat more general issue, which ties in

with dose reconstruction or dose to the skin, regardless of whether we're talking about a fine particle or a flake. And this would get to, I think, part of the implementation, regardless of, again, the size of the particle or whether, in fact, you would say it's beyond what you'd typically call a particle.

The target organ right now for the dose reconstruction, if I'm understanding this correctly, is calculating the mass of deposited material and deriving from that a dose rate from the skin and viewing the target organ as the total skin. And that's kind of analogous to the way we treat other organs. And the scenario that John is describing involves kind of an individual, it would be a story that might be told about individual causation in which there's a probability of a deposition to a small area of skin, and he's concerned about the joint probability of not just a particle falling anywhere on the skin but the particle falling onto the area of the

skin in which the tumor has arisen. And you could imagine then that the Probability of Causation, John, that you're talking about is the probability of radiation-induced cancer, the risk coefficient times the dose times the probability of the particle falling onto exactly where the tumor for that individual case arose, and that's a story about individual causation.

That's a really difficult thing for us to think about, but what I was trying to get back to was the bigger issue of averaging the deposition on the exposed skin over the total body to get the average dose to the total skin for a claim in which you know that the tumor arose either on exposed skin or unexposed skin. I mean, has there been a consideration, which I think is partly getting towards what you're talking about of partitioning out that organ into two parts. There's an area of exposed skin, which has a dose delivered to it, and there's an area of

presumed covered skin which is, perhaps, 86 percent of the volume of the target organ, if you wanted to think about it that way. And you would like to assign different doses depending on whether the claim involved the cancer which arose on exposed of the face, neck, ears, or hands, versus elsewhere.

DR. MAURO: Yes. I mean, that's the question.

MR. SMITH: This is Matt Smith of ORAU Team. The subject of averaging the skin dose is in OTIB-17, as Mutty pointed out. I had it up a moment ago. I believe it's around page nine in that document.

Another thing for reference that's been spoken of this morning or afternoon, depending on where you're at, is a situation at Hanford where ruthenium flakes were airborne in the outside atmosphere. And to deal with those, we're fortunate enough to have the data in terms of probability of encountering those flakes and then, from that,

data on residence time. And then from that, we have OTIB-17 that allows us, that are the possible distributions of that dose over the skin.

With respect to what Bob said, you know, what we do is if we don't know exactly where that particle landed on the skin, we give that dose a distribution. Rather than give all the dose to the discrete location of the cancer, in other words assuming that with a 100 percent probability that that flake landed on that cancer site, that's not, in my mind, correct either. It's some kind of distribution. To come up with all these parameters for this situation seems highly unlikely.

MEMBER RICHARDSON: So the question is a simple one: is that distribution a uniform distribution over the entire mass of the skin or is it a conditional distribution based on whether the skin is exposed or not?

MR. SMITH: It would be uniform.

MEMBER RICHARDSON: Right. And so that, I think that's just one little transition point, which sounds --

MR. SMITH: Well, it affects how IREP does the calculation, though, IREP, in terms of using the dose coefficients, I mean, the assumption is the whole skin is the organ.

MR. SMITH: Yes, that's, I mean --

MEMBER RICHARDSON: We don't have an option of telling IREP to partition the skin. There's no option to tell IREP, oh --

MR. SMITH: We don't tell IREP -- you want to derive a dose estimate to enter in. And all of this, we're in the world now of -- well, I mean, of Bayesian statistics. We want, we have information about where the cancer arose. We have prior assumptions about whether the skin in that area was exposed or covered, and we want to integrate that into the best posterior distribution for the Probability of Causation that we can get. And we don't need to pretend that we're naive to

the fact about whether the person was naked or clothed in the workplace. And IREP is a tool to help us. It shouldn't be telling us.

MEMBER RICHARDSON: Well, again, we can't partition it within IREP. We cannot tell IREP to consider only a portion of the skin.

DR. MAURO: This is John. Let me step in a little bit. The way I understand -- and I think we're getting to the place that I was hoping we'd get to. Right now, we're having a conditional discussion. That is, assuming that we find and agree that this is a plausible scenario, then you're saying that, well, the way you'd do it is the procedure laid out in OTIB-17 where you prorate based on the fraction, let's say it's a one centimeter squared area that you want to postulate as a real scenario and that you would say, okay, let's say you calculate 230 millirem per hour underneath that flake. That's to the skin right underneath the flake. But now you're

saying you're going to divide that by 18,000 because you're going to make it as if it was uniform over the whole body. And I could understand why you would say that because the risk coefficient, the risk per rem, let's say, that is if there's uniform exposure of all the skin -- this is my understanding -- to a rem, you know, here is your lifetime risk of cancer per rem exposure to all the skin.

Now, this is a little bit of a brainteaser and I can't say I have the answer to this. And I believe that's what IREP does. It says, okay, here's the risk per rem when all the skin of your body experiences that dose, like a whole-body dose.

Now we're saying but, no, that didn't happen. The rest of the body got nothing or a relatively small dose, but we've got this little spot that, theoretically, we don't know where it is. We're going to go with the upper bound number, which is a fairly large flake, I guess, but it's, you know, it's

another plausibility question.

But we'll agree to the upper bound, no doubt, for this localized dose underneath the flake would be 230 millirem per hour. There's no doubt that that places an upper bound.

Now, what I'm a little bit -- and somehow you've got to go from IREP which uses a risk coefficient for risk per rem from uniform whole-body exposure, in this case skin, now we're saying but, you know, what do you do when you've got a localized dose? And you're saying, well, you dilute it down by the 18,000 square centimeters, and that has a geometric mean, I think it is, of a distribution that has a very large standard deviation, which would capture this upper bound 230 number.

MEMBER RICHARDSON: John, you're sort of off the rails a little. The radiation risk estimates are agnostic to the part of body that's exposed. I mean, you can imagine

in a setting a claimant with exposure to a particular limb who files a claim for cancer, and they'll say what's the probability that that cancer was caused, and they're just going to use a risk coefficient and plug in the dose.

DR. MAURO: Well, no, no, I understand that but IREP --

MEMBER RICHARDSON: So the coefficients are not tied to an assumption about a certain amount of skin being exposed, and there should be no problem with putting in a dose estimate and running it through IREP for a partial-body exposure.

MR. STIVER: Dave and John, this is John Stiver. I was just looking at the DOE guidance from 10 CFR 835. And a minute ago, we were talking about this idea of a joint distribution. We have the uniform whole-body exposure, and then you have this other increment of a localized exposure. And both the NRC and DOE actually take that into

account. DOE has three different conditions, one for an area irradiated, let's say, 100 square centimeters. And in that situation, it recommends averaging the non-uniform dose equivalent over that area and then adding that to any uniform equivalent dose.

And they do the same type of thing for an area from 10 to 100 and then less than 10, as well. But it's kind of being factored in, and I believe NRC basically recommends averaging that dose over a 10 square centimeter area for a non-uniform exposure.

So I think this is the kind of thing that's been debated and analyzed and actually codified at different agencies at this point. And we're kind of struggling with that same type of thing here right now.

CHAIRMAN KOTELCHUCK: Let me ask you -- it's 12:30 -- whether we are near a conclusion, I mean, we started out this discussion before 12, or whether it might make sense to stop now and come back to it and have

a chance to think over some of what we have just talked about and maybe even, over lunchtime, come up with some further thoughts.

But I think maybe we should just take our lunch break now and come back and return to this issue.

MR. CALHOUN: I'm thinking that this is not a case-specific issue. I think this is an overarching issue that's going to have to be addressed. I would recommend that we push it in that direction and not come back to it after lunch and just hit the individual issues.

MR. KATZ: Well, and it's already identified as an overarching issue. And the other thing I would just note for this afternoon is we're still way behind on case resolution, and I hate to see a whole day lost to this, given where we are.

MEMBER RICHARDSON: So this is one we want to punt to Melius.

MR. STIVER: We should go to Jim

Neton's overarching issues.

MR. KATZ: Well, it's already, I mean, it has that --

MR. CALHOUN: It's the same thing.

MR. STIVER: Hot particles is on there, but not those particular nuances.

MEMBER CLAWSON: No, no, I disagree because the hot particles we're talking about are like down in Nevada Test Site where they have the rover reactors and stuff like that that blew out --

MR. KATZ: No, but Jim has both of these because we've talked about --

MR. STIVER: I think that would be the proper venue for --

MR. KATZ: We've talked about it at Procedures Subcommittee, too, and it's already been, I mean, Jim, Jim Neton has noted that there's a distinction between hot particles and the uranium issue. He has both of them in that, whatever, parking lot place.

MR. CALHOUN: And, basically, it's

an assumption -- the whole decision is going to be: do we assume that everybody was exposed to them or not? And that's it. That's what it comes down to because, once you decide they were exposed to them, determining a dose isn't hard.

MEMBER MUNN: It is in the overarching issues database.

MR. KATZ: Right. That's right.

CHAIRMAN KOTELCHUCK: Then it's overarching. Then we're going to conclude it's overarching and finish.

MR. FARVER: Go to lunch and think about it and come back and make a decision.

MEMBER CLAWSON: Well, I think it's pretty well decided because it's already in the overarching issues.

MR. FARVER: So we're going to close that finding --

CHAIRMAN KOTELCHUCK: That's right. I think that's true. We will close it because we're just going to come back, and if

we do five minutes of overarching, we've essentially done it. And I feel that way. This is not something we're going to answer, so we'll come back, we'll do the rest of Set 8 because we really do have to get 8. I mean, my feeling is even I, who have only been here for about a year, notice that we've been working on 8 and 9 for a long time. And there are many, many people who we need to decide on compensation or help assign dose reconstructions we need to do.

Okay. I'm going to make a short lunch. 1:15, right? We'll do that, 45 minutes. Can we do that?

I'm willing to consider an hour.

MR. KATZ: Let's try to reconvene at 1:15. We'll do our best to do that.

CHAIRMAN KOTELCHUCK: And if there is a problem, we will wait for a few moments.

(Whereupon, the foregoing matter went off the record at 12:34 p.m. and went back on the record at 1:23 p.m.)

MR. KATZ: Good afternoon, everyone. This is the Dose Reconstruction Subcommittee, Review Subcommittee. And we're just getting started after lunch.

CHAIRMAN KOTELCHUCK: Right. And shall we go through the list of who's available?

MR. KATZ: Well, let me just check for Board Members. My Board Members on the line, Mark, John, and Wanda, are you on the line? Wanda, are you on the line? Okay. Not Wanda right now. How about Dr. Poston, John?

CHAIRMAN KOTELCHUCK: I wouldn't be surprised if --

MR. KATZ: I don't think they --

CHAIRMAN KOTELCHUCK: -- with an hour, they can't quite make it back.

MR. KATZ: And, Mark Griffon, are you on the line?

CHAIRMAN KOTELCHUCK: No.

MR. KATZ: That's three of the five that we lost. I think we had 15 before.

CHAIRMAN KOTELCHUCK: Right. We had 13 and we're down to 10.

MR. KATZ: We're down to 10.

CHAIRMAN KOTELCHUCK: Okay. They, I suspect, will come in within the next five or ten minutes.

MR. KATZ: Well, we actually don't have a quorum, so we can't begin without them.

CHAIRMAN KOTELCHUCK: Okay. While we are waiting, I'm not on the O: drive.

MR. KATZ: Okay. So I'm going to just put the phone on mute until -- and I'll check again.

(Whereupon, the foregoing matter went off the record at 1:25 p.m. and went back on the record at 1:27 p.m.)

MR. KATZ: Let me check again for Board Members on the line. Do we have Mark, John, or Wanda on the line?

MEMBER MUNN: Yes, I'm here.

MR. KATZ: Okay, great.

CHAIRMAN KOTELCHUCK: Wonderful. We have a quorum.

MR. KATZ: That makes a quorum.

CHAIRMAN KOTELCHUCK: And we're prepared to begin. Okay, thank you.

MR. KATZ: Thanks, Wanda.

MEMBER MUNN: You bet.

CHAIRMAN KOTELCHUCK: And I suspect others will come later, I hope.

MR. KATZ: Sure, sure.

CHAIRMAN KOTELCHUCK: Okay. So we have more of 8 and 9.

MR. FARVER: Yes, we finished Attachment 1, Finding 3 or so. So now we're going to move on to the next attachment. That's our next open item is Attachment 2, Finding 3. This has to do with radon exposure at the Harshaw Plant.

CHAIRMAN KOTELCHUCK: Okay.

MR. FARVER: And this is also one of the files, I believe, that Grady sent.

CHAIRMAN KOTELCHUCK: I'm still

looking for 8 and 9.

MR. CALHOUN: I've got 8. I'm going to send you 9 here in a second.

CHAIRMAN KOTELCHUCK: Yes, okay. Good. Great.

MR. FARVER: This is one that I believe Scott sent last Friday.

MR. SIEBERT: Yes, it's in the 8 matrix.

CHAIRMAN KOTELCHUCK: Yes.

MR. KATZ: Scott, while we have you, can I just ask you did you also send responses for Set 9?

MR. SIEBERT: There were no changes to the 9th matrix, so I did not send one out. It's still the same as the version that Doug sent out for the March 25th meeting after that.

MR. KATZ: Is that, is that because there were no more responses needed?

MR. SIEBERT: There were no more responses that I or the ORAU Team could give.

MR. KATZ: But does that mean --

MR. SIEBERT: There's a few more findings, but I believe a couple of them have to do with NIOSH and I, specifically, can't speak to those. And another few have to do with PERs that we've discussed that we will do, and there's not really much more that we can do until we either agree to close them because we're going to determine the PER at some later point or leave them open until a PER happens, which that's up to the Subcommittee.

MR. FARVER: Okay. Scott just wasn't in a position to answer that.

CHAIRMAN KOTELCHUCK: Grady, I have not gotten 8 since you sent it.

MR. CALHOUN: You haven't gotten 8? I thought you were just looking at 8.

CHAIRMAN KOTELCHUCK: No.

MEMBER MUNN: If anyone is sending out any additional or if they're duplicating anything that's been sent out previously, I

appreciate having a copy of that on my, on my NIOSH CDC.

MR. CALHOUN: Send 8. Can I assume that you can't get to the O: drive from here?

CHAIRMAN KOTELCHUCK: That's right. I'm at the point, Wanda, that, also, I'm on email. I can't get to the O: drive.

MR. KATZ: Okay. But I've emailed these things to your email addresses, too.

MEMBER MUNN: Thank you.

MR. KATZ: Not just now. I did this previously before coming here.

MEMBER MUNN: Today?

MR. KATZ: Before today.

CHAIRMAN KOTELCHUCK: And I'm -- I've gone through --

MR. CALHOUN: I'm going to send some here. Hold on.

MR. KATZ: Okay. Grady is mailing some out.

CHAIRMAN KOTELCHUCK: Now, I know

you had sent them out long ago, and that's the issue. I don't think--

MR. SIEBERT: For the 8th Set and the attachments that go along with it, Stu sent them out on Friday at about 12:54 Eastern to everyone on the --

CHAIRMAN KOTELCHUCK: Okay, okay.

MEMBER MUNN: Well, my AOL account doesn't show anything for me.

MR. KATZ: Well, he would never send them to your AOL account because this is PII data.

MEMBER MUNN: Yes, that's what I thought.

CHAIRMAN KOTELCHUCK: Oh, okay, right.

MEMBER MUNN: So I can't see them.

CHAIRMAN KOTELCHUCK: That's right. And, actually, that may be why it's not coming through here.

MR. KATZ: So you should have it on your CDC, Dave.

MR. CALHOUN: Yes, I see it right here. The title is "Files for May 21st DR Subcommittee Meeting."

MEMBER CLAWSON: Right.

CHAIRMAN KOTELCHUCK: That's Friday, right?

MR. CALHOUN: Friday the 17th.

MR. KATZ: Okay. Some were sent May 20th.

MR. CALHOUN: But the 8th Set is the 17th.

MR. KATZ: Right, I've got that. Yes, 12:54 p.m. You got them?

CHAIRMAN KOTELCHUCK: No.

MR. KATZ: 12:54, May 17th? Okay. I just forwarded it to you again.

CHAIRMAN KOTELCHUCK: You know what? I was working off of CDC, and I, undoubtedly --

MR. KATZ: Deleted them?

CHAIRMAN KOTELCHUCK: No, I didn't.

MR. KATZ: I'm sending it to you again.

CHAIRMAN KOTELCHUCK: Okay. Right, okay.

MR. KATZ: And I'm sending you the one on the 21st, too, again. Okay. So those should be popping on yours presently. And I'm going to send--

MR. FARVER: Okay. Attachment 2, Finding 3 has to do with radon metals, radon levels model at Harshaw and just progressed through. It was really we agreed with what NIOSH initially did, and Mark requested more time, needs additional time, and DCAS will provide determination on the radon surrogate data. And so on the -- so NIOSH issued a response --

MR. SIEBERT: Doug, if you want me to, this is Scott, I can cover that.

MR. FARVER: Okay. Go for it.

MR. SIEBERT: Okay. Like Doug was saying, we actually have already resolved

almost everything on this back in 2009. And then Mark just wanted some surrogate data. With such a hot topic, he wanted some more time to look at it. At the last meeting, I went back into the transcript, which I'd like to compliment having those, by the way, once again, because that is a huge help for all of us, that DCAS will provide determination on the radon surrogate data.

What it really came down to is can we look at that with the latest recommendations from the surrogate group as to using surrogate data? And when I went back to the 2009 review that SC&A did on this, they actually used the draft surrogate data criteria that was already in place at that time, and they put their report together based on those four criteria as well. And it agreed with all four of those criteria in their report, that they were met.

So I believe the bottom line is the original report said that. It also falls

in the same line as OCAS-IG-1, the criteria that's in that, as well. Since they agreed with the criteria in the report, I don't really see how there's much more else for us to resolve.

MR. FARVER: John or John, do you have a response?

MR. MAURO: This is John Mauro. I agree with that supposition because I took a look at that material again, as you did, and we found favorably before and our position remains the same. Using that Mallinckrodt surrogate data in the way they did seem to be fine.

MR. STIVER: Yes, this is Stiver. I just read through our report, and what John says is correct. I don't have any problems with it either.

MR. FARVER: No further action, and we can close that issue.

CHAIRMAN KOTELCHUCK: I think so. Okay.

MR. FARVER: Wow. We closed two now.

MR. CALHOUN: Two. Don't sell ourselves short here guys.

MR. FARVER: Now we'll move on to Attachment 2, Finding 4, guidance on extremity doses. And this is the second-half of the document that we reviewed earlier for Bridgeport Brass. At the bottom of that page, it talks about the Harshaw finding number four.

MR. SIEBERT: And this is Scott. This is the identical issue, so I'm guessing the resolution is, it's going to be the same.

MR. CALHOUN: Transferred to overarching issues and closed.

MEMBER CLAWSON: Well, this is just what we talked about earlier before lunch. This is just dealing with the uranium.

CHAIRMAN KOTELCHUCK: Right, right, right.

MR. FARVER: I believe it is.

MR. SIEBERT: Yes, this is Scott. Once again, it's the same kind of thing. We talked about it at the last meeting and resolved the specific extremity stuff but then expanded onto the idea that this was the same thought process as the uranium at Bridgeport, and that's why we answered, basically, the same question again.

MR. FARVER: Okay. So no further action. We can close that issue.

CHAIRMAN KOTELCHUCK: Okay. Moving right along.

MR. FARVER: Attachment 2, Finding 5, and I think this goes on for a couple of others. Well, no, it's just Finding 5. And this is Harshaw, the beta doses from film badges at Harshaw, and SC&A to provide a written review of this issue before the next meeting.

MR. CALHOUN: I think, didn't you just do that?

CHAIRMAN KOTELCHUCK: Yes, there's

a Harshaw --

MR. FARVER: I know there's one somewhere.

MR. CALHOUN: Yes, I don't think we've done anything since you sent it to us.

MR. SIEBERT: Well, Grady, actually --

MR. CALHOUN: Oh, good. Scott, go ahead. Sorry.

MR. SIEBERT: And I don't know if you sent this out, but, as of yesterday at 6:42 in the morning, I sent you our response to this additional SC&A write-up. I don't know if that got forwarded or not.

MR. KATZ: I think so. I think I remember forwarding that. Let me look.

MR. SIEBERT: It's separate from the rest of the matrix.

MR. KATZ: Right. I'm pretty sure I sent it forward. I'll look.

MR. CALHOUN: What's it called?

MR. SIEBERT: The subject of the

email is "8 Set Harshaw Finding Number 5." At least that's what I sent it to you. I don't know about getting forwarded from then.

CHAIRMAN KOTELCHUCK: I certainly saw it.

MEMBER CLAWSON: Well, we've got a technical on radon, but that's from SC&A.

MR. CALHOUN: 8th Set Harshaw Finding Number 5?

MR. SIEBERT: Correct.

MR. CALHOUN: I did not forward that, I don't think, because it's just an email. There's no attachment.

MR. SIEBERT: Correct. The resolution is actually in that email. I wasn't sure how you wanted to handle that.

MR. CALHOUN: I'd say go ahead and tell us about it.

CHAIRMAN KOTELCHUCK: Yes.

MR. SIEBERT: Okay. Let's see here. Mutty, did you end up being the one who wrote this one up?

MR. SHARFI: Yes.

MR. STIVER: Would you mind, if you have it in front of you, would you mind covering that real quick?

MR. SHARFI: Sure. Basically, this is a question about the beta gamma or beta response function, I believe, based on the type of dosimeters that they may have used. So there isn't a lot of documentation on the Harshaw program in totality, but, from what you can tell, the Harshaw dosimetry program was provided by the University of Rochester.

So when you go into the University of Rochester stuff, during the time period of Harshaw's program operational period, we found both the 1947 letter talking about their dosimetry services. This happens to be one that they're offering to Columbia University, but they're describing their dosimetry program in general. And in that case, they talk about their calibration and that they're calibrated

to uranium metal.

In addition, there's a later letter from Mallinckrodt that also used a similar program. And this is in 1956, so it kind of balanced the entire operational period of Harshaw. And in that case, they talk also about that their film badges are using uranium slabs to calibrate their dosimetry factor.

So there's two different incidences within two, you know, during the beginning and towards the later part of the Harshaw operating period where similar programs using similar dosimetry are using uranium slabs to calibrate their dosimetry program for beta, and that should indicate that the Harshaw dosimetry program was well calibrated for the uranium betas and not using some, you know, other programs, other beta calibration. There should be a good response function for the beta exposures using the Harshaw dosimetry. That's the generic summary of the argument. Questions?

MR. FARVER: I'll defer to John or John. They're my AWE people.

MR. MAURO: This is John Mauro. I could give you, we actually brought aboard a fellow, Joe Zlotnicki, to look into this issue of calibration of beta and what are the complexities. And I think the bottom line is that there certainly could have been -- we're glad to hear that the film badge is calibrated using uranium betas because that's, in fact, what you were dealing with. So that gets us halfway home.

And the other half, I don't know if there's anything that could be done. That has to do with -- this fellow, Joe, who was with Teledyne for many, many years, and he pointed out that one of the practices that was commonplace in those years, the early years, was to place the dosimeter inside some type of packet to prevent it from getting contaminated. It was kind of strange when you think about it. And as a result, there was a

degree of attenuation of the beta. I mean, to me, it sounds kind of strange that you would do that, where you put it in an additional packet, because of concerns regarding damage and contamination. And as a result, there was attenuation of the beta, and your readout was lower than what it should be.

But, you know, we don't have any evidence that, in fact, that was the practice that occurred at Harshaw.

MR. SIEBERT: John, I could actually answer that.

MR. MAURO: Oh, great. Thank you.

MR. SIEBERT: There are actual, some of the Harshaw dosimeter reports that talk about contaminated badges, and there's no indication that they ever directed Harshaw to individually bag the workers because you continually see it, but they do actually tell them when they're shipping them to make sure that they bag individual workers to separate them from the shipping of other workers

because, in order to prevent cross-contamination of dosimeters.

MR. MAURO: Oh, I see.

MR. SIEBERT: So it doesn't seem that there's ever any indication that they were having individuals individually bagged to control the contamination of their badge. They were just trying to prevent cross contamination of badges.

MR. MAURO: Got you, yes. Well, I tell you, that's it. I mean, that was our only concern. We thought you wouldn't be able to get any information on this. It was sort of how we're going to deal with this. I hate to raise an issue that really -- but it sounds like you answered the two parts of it. One, they used uranium, which is the right energy distribution; and, two, there's evidence that they did not have this extra bag while they were wearing it that would further attenuate the field.

So, I mean, that being the case, I

don't know if anyone else has any feedback on this, but that sounds like it addresses our issues.

MEMBER CLAWSON: John, this is Brad. It's interesting because it's not in our RWPs, but that's a commonplace practice today that you bag them.

MR. MAURO: I couldn't hear you, Brad.

MEMBER CLAWSON: I say that is a commonplace practice now to bag them when you go into a contaminated area still today.

MR. MAURO: To today. Okay.

MEMBER RICHARDSON: But when they were describing -- and there may be two different things between what the, what was being described as having the film in a packet versus bagging a contaminated dosimeter before transporting it to prevent cross-contamination. I think film packets were sometimes used to control fogging of the film by humidity or other conditions.

So, I mean, again, I'm not sure how far we want to go with this, but that would seem to me kind of more likely kind of the concern that maybe was being raised, were the films encased in a packet which would attenuate the beta response.

MR. MAURO: That was really the issue, besides what the issue was was it calibrated in the same circumstances that it was actually used for the worker, that is including any over-packing for this problem of contamination, as Brad pointed out. If they were calibrated under the same circumstances, then everything is fine. But if they were calibrated without it and then used with some type of extra, that might have attenuated the beta radiation. And then, of course, we've got ourselves an underestimate that needs to be adjusted for. But, I mean, that's about as far as we could take it.

MR. FARVER: So is there any further action that we can take on that or --

MR. CALHOUN: I just forwarded all of you that email, by the way.

MEMBER MUNN: It doesn't seem reasonable.

MR. MAURO: It sounds like that they did not use this over-pack when they were issued the badges. Do you actually have some records that said that, that the over-pack was only used in returning the badges? That's what I understood you described.

MEMBER MUNN: In the absence of contrary information, it would appear to be taken care of.

MEMBER CLAWSON: I beg to differ on that. Basically, with no proof saying yes --

MEMBER MUNN: Do you have experience with this, Brad?

MEMBER CLAWSON: Yes, very much so.

MEMBER MUNN: They do that routinely in Idaho now?

MEMBER CLAWSON: It's been that way for 25 years. When I go into a Zone 3, which is very high contamination, I bag my TLD, and then I put it inside of another bag along with my ED so that I can read it. So now I've got a double bag on it and then come out.

But I go into a Zone 1, which is a low contamination area, our badges have to be worn on the outside and they have to be bagged. All that is is for contamination purposes.

MEMBER MUNN: Does that lead us to believe that this is what transpired at Harshaw, even though we have information that it was used, that the process was used for a different purpose?

MEMBER CLAWSON: Well, I think it doesn't come out right and say -- well, let's ask the question. Was it Mutty that did, that said this?

MR. SHARFI: Yes. Their specific

letter says that some of these badges are actually being coated with green salt. So if they're being coated with green salt, they're obviously not bagged.

MEMBER CLAWSON: Okay.

MR. SHARFI: To the extent that the badge readings have little meaning, these badges also tend to be contaminated with clean badges and are in the same package. Therefore, you wrap the following badges separately each week when shipping.

CHAIRMAN KOTELCHUCK: Okay. So --

MR. FARVER: We can close that one.

MEMBER CLAWSON: So when they calibrate it, do they bag it?

MR. SHARFI: So they're not wearing them bagged. They're just, when you're shipping them, please bag them so you don't cross-contaminate.

MR. MAURO: Hey, Brad, do you know what, I mean, notwithstanding our discussion

here, do you know that your vendor that supplies you with your service, do they calibrate your badges with the extra --

MEMBER CLAWSON: No, they do not.

MR. MAURO: They do not. So --

MEMBER CLAWSON: But our vendor is actually ourselves. We have our own dosimetry program between the two, but I know that they're not done that way.

MR. STIVER: Brad, this is John Stiver. Do you know if they make any corrections for the additional attenuation from the bags? When you, do you have to notify them that you bagged the badges --

MEMBER CLAWSON: Oh, I can't really get into that. All I'm trying to say is that, from my experience, because for me to talk about that, I'm conflicted in that area so--

MEMBER RICHARDSON: It seems to me like putting a bag over the dosimeter to deal with the problem that the dosimeter results

may not be interpretable if it's covered with salts or anything else maybe would, it seems to me like that's a -- the attenuation by the bag is less of an important problem than the question if they did not bag it and the open window and shielded window are both covered with salts, the attenuation by that could be, would seem like -- well, in general, the interpretation of the dosimeter under those conditions is really questionable.

MR. FARVER: It's shielding out the low level.

MR. CALHOUN: By the uranium salt itself?

MR. FARVER: I mean, if you're attenuating anything, it's going to be the low energy, which is going to get attenuated by your coveralls, which are probably double PCs or something.

MEMBER RICHARDSON: I thought they were having a problem interpreting the dosimetry results was the quote that was read.

MR. FARVER: Which one? From Mutty?

MEMBER RICHARDSON: Yes.

MR. FARVER: That was because it was contaminated with green salt.

MEMBER RICHARDSON: Yes.

MR. FARVER: Yes. But I'm saying if you bag it to prevent that --

MEMBER RICHARDSON: Yes.

MR. FARVER: -- then even what you're shielding out is getting shielded out by what you're wearing anyway.

MEMBER RICHARDSON: Right. Oh, yes, yes. So the bag --

MR. CALHOUN: We're not bagging it there. It sounds like what --

MR. FARVER: Right.

MR. CALHOUN: -- here is if the badges got contaminated they weren't bagged.

MR. FARVER: But even if you're bagging it now, it's not like you're missing anything --

MEMBER RICHARDSON: No, but I'm asking about use of those dosimeters that were not bagged and were--

MR. CALHOUN: I don't know that.

MEMBER RICHARDSON: How do you interpret --

MR. CALHOUN: It would have to be super, super caked for there to be any meaningful attenuation of low-energy betas, I would think, especially when you've got those whopper betas coming off of uraniums, you know.

MEMBER RICHARDSON: Yes, it's more like the film gets dark, right?

MR. CALHOUN: Yes.

MEMBER RICHARDSON: And that's why --

MR. CALHOUN: They would count it as a higher dose.

MEMBER RICHARDSON: Well, I think they would say it was not readable or something.

MEMBER CLAWSON: I thought the question on this was the calibration, if they were bagging these when they wore them or did they calibrate without it? So I thought that was where we got into the question.

MR. FARVER: Well, they weren't bagging it, Harshaw. And they weren't bagging it, or calibrating it with the bag because they were not bagging it when they were wearing it. It didn't matter. And what I was saying was it really doesn't matter with you now because whatever is going to be shielding out is going to get shielded out by your coveralls and your anti-C clothing anyway. A plastic bag is not going to attenuate any more than going through PC, double PCs.

So I believe we can, we're done with that.

CHAIRMAN KOTELCHUCK: I think so. Okay. Where can we go next?

MR. SIEBERT: This is Scott. Since we did also talk about the bagging

issue, Doug, I'll send you a little clarification in what the SRDB references on that whole memo on the bagging so that you can put it in the matrix to be complete.

MR. FARVER: Okay. Let me make a note of that or I'll forget.

Attachment 2, Finding 7. So this will be Harshaw still, and it has to do with urine sampling, Monday morning urine sampling could result in underestimates. And the action was NIOSH will provide analysis related to how different solubilities may be affected by this type of sampling. And I believe there is a document somewhere.

MR. CALHOUN: Yes, I believe that's one that Stu sent on.

MR. FARVER: I don't remember the name.

MEMBER CLAWSON: I'll tell you.

MR. SIEBERT: It's called "SCA HAR Number 7 White Paper, Harshaw, Monday Morning Samples, NIOSH, May 2013."

MR. FARVER: Short name.

MR. SIEBERT: I tried to describe it in the name of the file as much as possible. And once you guys are ready, just let us know and Liz Brackett is going to be handling this one for us.

CHAIRMAN KOTELCHUCK: I'm not sure -- that's my problem.

MR. FARVER: Do you have the document up?

CHAIRMAN KOTELCHUCK: Getting there. I'm working there. So just do go on, folks.

MR. FARVER: No, we'll wait for you, and then Liz will tell us about it.

CHAIRMAN KOTELCHUCK: Okay. Let's see. Okay.

MR. CALHOUN: It should be page 106.

CHAIRMAN KOTELCHUCK: Oh, I'm not there yet. Please, do go on. I'm embarrassed holding you all up. Okay. And we're on 8?

Okay. Finally, I'm here. And we are looking at -- there we go. Okay. We're on 8 and case matrix --

MR. FARVER: Yes, down at the bottom.

CHAIRMAN KOTELCHUCK: Of page?

MR. FARVER: Oh, around 105.

CHAIRMAN KOTELCHUCK: Okay, good.

MR. FARVER: Attachment Number 2, Finding Number 7.

CHAIRMAN KOTELCHUCK: Attachment 2, Finding -- okay.

MR. FARVER: NIOSH provided the White Paper called "Harshaw Monday Morning Urine Samples."

CHAIRMAN KOTELCHUCK: Okay. All right. Indeed. NIOSH will follow up. Okay.

MR. FARVER: Are we ready?

CHAIRMAN KOTELCHUCK: Yes.

MR. FARVER: Okay. Go ahead, Liz.

MS. BRACKETT: Okay. Well, the issue is the collection of a Monday morning

sample for uranium. That was done at some types to clear out anything over the weekend, the insoluble portion, so that they could see actually what was taken up into the body.

A valid practice. The issue comes in where we assume a chronic intake for most people, and you get a different result if there's actually a break of two days before you assume the sample was collected and you underestimate the results, the intake, if you have just a single Monday morning sample, assuming that the intake occurred all the way up until the time of the sample, versus having stopped two days prior to that.

So what I looked at here was the actual distribution of the cases. This is a co-worker study that we're looking at, and so we use all of the samples that were collected by the site to do this assessment. And in looking at the distribution, there are many of them collected on Mondays but not the majority. If you look towards the end of the

paper, the first several pages are kind of a background description of this whole issue. The last two pages show the specific data for Harshaw, and you can see that the Tables 1, 2, and 3, the first three columns are the same. The rest of it is just by the different material types because it's going to be different values, depending on the material type that you have.

But you can see Monday samples, 32 percent of the total number of samples were collected on a Monday. The rest of the days had fewer relatively, but they were still distributed over time. On the weekends, it had the lowest amounts, 3 percent and 6 percent for Sunday and Saturday, and then pretty much evenly distributed throughout Tuesday through Friday.

And so when you take this into account that the samples were distributed throughout the week, you can see Table 4 gives the relative difference between assuming a

constant chronic intake that is spread evenly over the seven days, as opposed to a five-day work week, which is what we assumed that would have been occurring at the site.

For Type-F, we're probably about 7 percent low by assuming the constant chronic intake relative to if it had been a five-day week. And Type-S, S as in slow, some of these get confused on the transcript, so let me say that again. Type-F, as in fast, we come up with 93 percent relative to what you would get if it was a five day week and S, for slow, 98 percent, so almost the same thing that you would have gotten with the five-day week.

I don't know if you want more of a description or you have specific questions on this.

MR. FARVER: So the point is the solubility really doesn't matter.

MS. BRACKETT: Well, it makes a little bit of a difference -- right. Not huge amounts.

MR. FARVER: Right.

MS. BRACKETT: Not when you have this many samples. I think if you had fewer samples, you know, and if it were weighted more heavily towards Monday, then it could make a difference. But with this particular distribution, then it doesn't make a large difference. And the seven-day versus five-day is really what we're looking at because that's what these numbers are. It's relative, you know, the chronic over seven days versus chronic over five days is what we're looking at.

And it looks like we have possibly a slight underestimate but not a large underestimate. And then each of these would be, the distributions would be assigned with a GSD, and I don't have those in front of me, but it would be a minimum of three assigned to each intake.

MR. MAURO: Liz, this is John Mauro. One of the factors that contributed to

this being a, you know, negligible difference, even for the Type-F, fast, is that you do have a number of samples that are carted off Tuesday, Wednesday, Thursday, and Friday, because I was expecting to see a bigger difference for Type Fast, and it probably would have been if they were all on Monday.

MS. BRACKETT: Yes --

MR. MAURO: Do you have any idea of how big a difference it would have been if they were all on Monday?

MS. BRACKETT: Let's see. Well, what you can do is look at, well, in Table 1, you see the IRF. If you look at the 5-7 IRF relative to the 7-7 IRF, that would tell you what the difference would be. So, let's see, 0.0894 divided by 0.273. I think it's, I was thinking it was around a factor of three.

MR. MAURO: Okay, okay. Because, intuitively, I was expecting a bigger difference, and it would have been if they were all on Monday.

MS. BRACKETT: Yes.

MR. MAURO: But, so, I mean, the fact that it's spread out the way it is, bringing it down to only a 7-percent difference for F, and, of course, we're not dealing only with F. That's part of it only. And you go from what, 93- to 98-percent difference.

MS. BRACKETT: Right.

MR. MAURO: Okay. And then you have this big standard deviation that you're assuming, also. You said a factor of three?

MS. BRACKETT: Well, no, these would be assigned as a log-normal distribution, and for a co-worker study the minimum GSD is three.

MR. MAURO: Is three. That's a multiplier. Right, okay.

MS. BRACKETT: Yes.

MR. MAURO: All right. Yes, okay. Thank you.

MS. BRACKETT: You're welcome.

MEMBER MUNN: Sounds acceptable to me.

MR. FARVER: Any other questions or comments on that?

CHAIRMAN KOTELCHUCK: No.

MR. FARVER: Okay. So we'll --

MR. SIEBERT: This is Scott. In the Harshaw TBD, the GSDs range from three to about four.

MR. FARVER: Thank you. No further action, finding closed; is that okay?

CHAIRMAN KOTELCHUCK: Yes.

MR. FARVER: Okay. Moving on. We'll talk about Attachment 3, which is Huntington Pilot Plant. Attachment 3, Finding 3. I don't know if we have anything on that or not, Scott. Do we have anything on that, Attachment 3, Finding 3?

MR. SIEBERT: I can't speak to Huntington because that --

MR. FARVER: Okay.

MR. STIVER: I think Grady, that's

your guys'.

MR. CALHOUN: Okay. Which one? Attachment 3--

MR. FARVER: Finding 3.

MR. CALHOUN: Finding 3. NIOSH will follow up on source data, and we will continue to follow up on source data because I haven't gotten any response from that one.

MR. FARVER: Okay.

CHAIRMAN KOTELCHUCK: Okay. Well, it's okay, just keep it, as they say, keep it to a dull roar. Keep it limited. Okay. Next one.

MR. FARVER: Next one should be, well, Attachment 3, Finding 5, but that's the same as Finding 3, so I'm assuming that we'll just --

MR. CALHOUN: And this one will be the same.

CHAIRMAN KOTELCHUCK: Sure.

MR. FARVER: Unless you can think of a new answer real quick.

MR. CALHOUN: I can't.

CHAIRMAN KOTELCHUCK: Okay.

MR. FARVER: Okay.

MEMBER MUNN: Well, now, before we go too far away from all that dust-loading business, was there, was there a response, was there a later response to Finding 3 than we saw in February of this year when NIOSH re-evaluated the dust data and provided a more claimant-favorable approach to allow for uncertainty? Do we have something more recent than that?

MR. CALHOUN: I don't --

MEMBER MUNN: I guess that infers to me that we, although we didn't say closed, it sounds as though the February presentation by--

MR. CALHOUN: It looks like there was something that we said we did in February, but then on 3/25 SC&A believes that the issue needs to be discussed further.

MEMBER MUNN: Okay. But they

weren't specific. All we know is just discuss further?

MR. CALHOUN: That's all I know at this point but--

MR. FARVER: We have to go back and look at the transcripts probably to get to the heart of it.

MEMBER MUNN: Well, yes, it appears to me that we need to be more specific. If there's still an outstanding question, it doesn't appear in what I'm reading. I guess that's --

MR. FARVER: Well, no, we don't put all the details in the matrix. You put down the --

MEMBER MUNN: No, I know. But what I see says that NIOSH has provided a more claimant-favorable approach, and it refers us to Section 5.1 of the OCAS document. But then I guess my real question is, bottom line question is what is it, what other thing is SC&A looking for? I'm assuming the action is

the report.

MR. FARVER: The action was, I don't recall what we talked about at the last meeting, but the action was determined that NIOSH will follow up on the source data.

MEMBER MUNN: Okay. Very good.

CHAIRMAN KOTELCHUCK: Okay. So we're, three and five are still up in the air, and did we cover --

MR. FARVER: We should be down to seven.

CHAIRMAN KOTELCHUCK: Okay. Okay.

MR. FARVER: It has to do with the survey data used at Huntington Pilot Plant, and SC&A is currently performing an evaluation. And I believe we did, and I've got my Huntington people on the phone, I'm sure.

MR. MARSCHKE: Yes, this is Steve Marschke. I performed an independent evaluation of the calculation that was done in the revised Site Profile, and we're in the

final stages of putting together that report. And, basically, the gist of the evaluation, we didn't find any showstoppers or anything like that, any findings. And we think that this could be, there's a unit conversion thing that makes no difference, but, other than that, we agree with the evaluation that was done.

MEMBER MUNN: Okay. So that's forthcoming.

MR. MARSCHKE: Yes.

CHAIRMAN KOTELCHUCK: Okay. Anything further?

MR. FARVER: I don't believe so on that one. Let me--

CHAIRMAN KOTELCHUCK: Okay.

MR. KATZ: So are we just leaving that open for next time?

MR. FARVER: Oh, no, we're going to close that one, I believe. We can close that because we agree. I'm just trying to get everything --

MR. CALHOUN: Is that number seven?

MR. FARVER: Yes.

MR. KATZ: But you guys are still issuing --

MR. FARVER: Well, he's making some minor edits to his report. He had his report out, and I don't think it's going to change its substance. Is that correct, Steve?

MR. MARSCHKE: That's correct. We're not changing that portion of the report at all.

MR. FARVER: Yes, okay. Finding 8.

MR. MARSCHKE: That's the same situation. The only question that did arise on these direct dose evaluations are we noticed that, in the revised Site Profile, NIOSH is using 20-gallon drums, putting the residue in 20-gallon drums, as opposed to using, in the previous Site Profile they were using these birdcages. And we investigated

that a little bit, and we found out that, basically, the revised Site Profile is more consistent with the documents that were produced back in the 1950s, and it looks, again, reading the original Site Profile, it looks like it was, the use of the birdcages were assumed, as opposed to documented. Use of the 20-gallon drums, there is documentation for that. So we kind of, I guess, at this point, we agree with that change.

MR. MAURO: Could I add a little? This is John Mauro. Is it true, though, that they did not use -- in other words, we were under the misconception at the time we did our review. When I say misconception, at the time that the original work was done, the birdcages are special devices to store enriched uranium, pure enriched uranium, not like residue mixed with nickel, pure enriched uranium in a way that precludes criticality.

It sounds like that, and this is where we could use a little clarification, it

sounds like that, in revising the Site Profile, you've moved away from the birdcage idea where the uranium is purified, pure, and stored in this non-critical mass configuration, but it really was just a residue of uranium that the products at the end, after they went through the process -- I forget the name of it. It was a carbon monoxide or carbon dioxide separations process. The product was a residue of where you separated the nickel in one place, and you have this uranium residue in another place, which was not of concern from a criticality perspective. And so the birdcages weren't used.

That was our, we're assuming that's the case. Is that what happened here?

MR. CALHOUN: I don't know.

MR. MAURO: Because, you know, you did move away from the birdcages as your source of external exposure and the old one to now your source of external exposure are these

20-gallon drums containing residue. And that's fine if that's, in fact, what happened. So we're assuming that the birdcages are no longer in play. And, Steve, am I correct that the external exposures associated with the birdcages, they were higher?

MR. MARSCHKE: They were slightly higher. But, again, there's no, I mean, I went on and looked in the site database there where all the reports, and, you know, there's 150 reports for Huntington. And, you know, you search for birdcage, and it doesn't show up in any of them. So I think the use of the birdcage in the original Site Profile was probably a conservative assumption, and now we're going with these 20-gallon drums, which, again, these do show up in some of the documentation, so I think it's going to more -- reflecting more of reality than, you know, than the previous Site Profile.

MR. MAURO: I think in our report we're going to just point out that we're

surmising that this is what happened and why you moved away from birdcages to 20-gallon because it's really not discussed in your new work. And you'll see in the report that Steve is finalizing as we speak that we'll probably just simply like a little clarification of why you moved away from the birdcages.

I don't know if it made that much difference in the dose. I think the birdcages did give higher doses.

MR. MARSCHKE: Slightly higher but not significantly. They weren't significantly higher.

MR. MAURO: Yes, okay.

MR. MARSCHKE: And, again, if the birdcages are not used, you know --

MR. MAURO: Oh, yes, yes, right. I agree.

MEMBER RICHARDSON: Could you, just as a point of clarification for me in understanding how to read and interpret the Site Profile documents, I guess. I tended to

view them as sort of basis documents where if there was really sort of worst-case scenario speculation that was made very explicit but a lot of it was described and there was factual, are you saying that there was a description of a scenario which you have no empirical basis for or you can find none at this point?

MR. MARSCHKE: In the old version of the document, the original version of the document, they used these birdcages and I couldn't find any reference in any of the Huntington documents where they mention birdcages. I think --

MEMBER RICHARDSON: So who wrote that, who wrote the original version of the document?

MR. MARSCHKE: I think it came from Oak Ridge. Now, when the new version, the new version of the Site Profile that we're actually verifying now, they are using these 20-gallon drums which are documented in the reports that were produced back in the 1950s.

MR. CALHOUN: I'm asking the question. I can find an answer to that. I just don't know off the top of my head.

MEMBER CLAWSON: Well, what did Huntington, to what percentage did they enrich?

MR. MARSCHKE: They didn't actually enrich. What they did was they got material, contaminated nickel from the diffusion facilities, and they separated the nickel from the uranium and anything else that was contaminating the nickel because their goal was to return to the AEC, at that time I guess it was AEC, nickel. And they had this residue then, what they call residue, which was, you know, everything that wasn't nickel goes into these, in these residue containers. And then they also get -- and as you can imagine, a lot of that is uranium. And it's at enrichment levels, which, you know, I guess for the Site Profile they're using a nominal two-percent enrichment.

MR. MAURO: But the fraction of the residue that's uranium is relatively small as compared to birdcages where it would be assumed that it's pure uranium.

MR. STIVER: John, this is John Stiver. I'm thinking that the reason they may have assumed birdcages in the last time around, remember they're also assuming that there's a 36-percent enrichment.

MR. MAURO: Yes, yes.

MR. STIVER: Based on that, they would have assumed a little bit of a criticality issue --

MR. MAURO: That's a good point.

MR. STIVER: -- birdcages. It's conjecture, but that could be the reason for it.

MR. MAURO: I think that's a good -- I mean, we're all sort of speculating on the reason for this change.

MR. CALHOUN: I'm going to find that out so--

MR. MAURO: Yes. And it will be good to have -- you'll see. I mean, it will be helpful to close the loop, close the circle on this story.

MR. MARSCHKE: John, I think the reason for the change is the documentation indicates that it's a 20-gallon drum and not a birdcage.

MR. MAURO: Okay.

MR. MARSCHKE: And so, I mean, that's the reason for the change. Now, you can ask the question why did they use the birdcage back in the previous iteration.

MR. MAURO: Yes.

MR. MARSCHKE: But that, you know, I mean, we didn't really try and track that down. But, I mean, the reason for the change is, you know --

MR. MAURO: No, I understand and I agree. I mean, you know what it is? I was the original reviewer back, way back when, and we looked really carefully at the birdcage

dosimetry and everything. All of a sudden, the birdcages are gone, and I was just surprised to see that.

MR. CALHOUN: Yes. I'm looking at Rev 0. I guess we had an initial one. Maybe it was called something different, but Rev 0 doesn't have the word birdcage in it at all. It is completely 20-gallon and says this is what happened. So I imagine that that's, you know, but I'll see if I get any tribal knowledge on why it's changed because, I mean, this is `08. It was changed to 20 gallons. This is how old this thing is.

MR. MARSCHKE: The original one, when I'm referring to the original one was, it's an Oak Ridge and ORAU-TKBS-0004, as opposed to an OCAS-0004, and it was, had an effective date of January, January 16th, 2004.

MR. MAURO: Yes, I think that's the one I reviewed.

MR. MARSCHKE: And that's the one that's got the bird -- and it's a Revision 1

but, again, it's --

MR. CALHOUN: Right. But we switched, we switched it from ORAU to us --

MR. MARSCHKE: Right.

MR. CALHOUN: -- out in the document.

MR. MARSCHKE: And went back to Revision 0. It still has the same TKBS number.

MR. CALHOUN: We'll follow up. I'll try to find something out on that, you know.

CHAIRMAN KOTELCHUCK: Does that have to come back to the Subcommittee?

MR. CALHOUN: I mean, if you guys want it to, if you need to know that before you close it out.

CHAIRMAN KOTELCHUCK: I don't think we do. What I'm hoping is that you can just get that corrected internally and close it.

MR. MAURO: I think we're raising

this -- Steve, you're raising this as an observation.

MR. MARSCHKE: We're going to raise this as an observation. It's something we would like to know and not as a finding or anything like that, yes.

CHAIRMAN KOTELCHUCK: Okay.

MEMBER RICHARDSON: I just want to know how crazy stuff ends up in this document.

MR. CALHOUN: It's just an assumption, probably worst-case assumption.

CHAIRMAN KOTELCHUCK: Yes, right, right.

MR. CALHOUN: As birdcages were, you know, they were used. There's a lot of different things called birdcages, you know.

MR. MAURO: You know, I think John Stiver's -- and maybe we're beating a dead horse. At that time, also, you were assuming that the uranium was 36-percent enriched --

MR. CALHOUN: Correct.

MR. MAURO: And maybe creating a

circumstance where there was a possibility, and the assumption was that you would use birdcages, even though perhaps they weren't.

MR. CALHOUN: Right. And the whole point of birdcage was criticality control.

MR. MAURO: Yes.

MR. STIVER: In this case, it sounds like it was an assumption that was later disproved when the actual documentation was located.

CHAIRMAN KOTELCHUCK: Okay. Shall we go on? Attachment 3, Finding 8.

MR. FARVER: Attachment 3, Finding 8. Isn't that the one we were just on? Okay, that's closed.

CHAIRMAN KOTELCHUCK: Okay. Sorry. Okay, yes.

MR. FARVER: Attachment 3, Finding 11. Residual surface contamination exposures. I mean, this is going to go back to Steve again.

MR. MARSCHKE: Actually, it goes -- okay. I can tell you -- it actually goes to John Mauro. John Mauro issued something back in, on March 21st where he, of this year. And if you look at that document, he basically agreed with the NIOSH. "We agree that the new approach by NIOSH is bounding and an improvement over the original strategy. However, there remains a need to discuss whether such a strategy is consistent with the provisions of the statute and its implementing regulations." That's the quote from the report that was issued by SC&A back on March 21st of this year.

MR. MAURO: And if you give me a minute, I got to refresh my memory because I remember when I put that mini-report out that was what eventually, triggered Steve's work on that issue. You may want to move on while I just check what I was saying there because I have to say I don't remember what the concern was. I'll just need a minute to take a look

at that report.

MR. FARVER: If we move on to the next one, it also needs discussion.

MR. MARSCHKE: Well, basically, 11 and 12 are the, yes, they're both handled in the same -- actually, in that report, March 21st report, they were both lumped together, and then the same statement that I read applies to both.

CHAIRMAN KOTELCHUCK: Okay. So while he's looking that up -- that is the last one.

MR. FARVER: For the 8th Set.

CHAIRMAN KOTELCHUCK: I don't want to go to another set.

MR. FARVER: Next, we go to 9th Set.

CHAIRMAN KOTELCHUCK: And the 9th Set, they said there was no, there were no --

MR. FARVER: They didn't have any. We've got a couple.

CHAIRMAN KOTELCHUCK: Okay.

MR. FARVER: If you want to close out a couple of findings.

CHAIRMAN KOTELCHUCK: Yes, but I don't want to go to the 9th Set until we --

MR. FARVER: Okay.

CHAIRMAN KOTELCHUCK: -- finish up. I don't want to go, switch back and forth sets.

MR. FARVER: Do you want to take five or--

MR. KATZ: John Mauro, do we need to take five?

MR. MAURO: Yes, I'm almost there. I'm reading it right now. I have it in front of me. It will take me a second.

CHAIRMAN KOTELCHUCK: Fine. We can chat on the record.

MR. KATZ: Does anybody need a comfort break while we're waiting?

CHAIRMAN KOTELCHUCK: Yes, we do.

MEMBER CLAWSON: Why don't we just take a quick five-minute break?

MR. KATZ: Yes. John, while you're looking, let's just take a five-minute comfort break --

CHAIRMAN KOTELCHUCK: Five minutes. Okay.

(Whereupon, the foregoing matter went off the record at 2:30 p.m. and went back on the record at 2:41 p.m.)

MR. KATZ: We're back. Let me check and see, Wanda, do we have you back?

MEMBER MUNN: Yes, you do.

MR. KATZ: Great. And let me just check and see if I have any other Board Members on. Dr. Poston?

MEMBER POSTON: John Poston is here.

MR. KATZ: Great. And how about Mark Griffon?

CHAIRMAN KOTELCHUCK: I guess he's gone for the afternoon. He indicated that he might not be able to stay on all day.

So, John Mauro, have you resolved the issue or found the information you were looking for?

MR. MAURO: Yes, I did. I just needed to refresh my memory from that report. If you're ready to proceed, I will be glad to give you the 30-second sound bite.

CHAIRMAN KOTELCHUCK: Do it.

MR. MAURO: Okay. We'll knock this off. In our original review back in 2004 or whatever of the Site Profile, we were concerned that the method that was being used to reconstruct the doses depended on data that was collected after decontamination. So in other words, decontamination at the facility took place in about 1978 - `79, and then they had some data in 1980 of the residual amounts of radioactivity that were there at that time. And in that old, old Site Profile, they used that data to reconstruct data pre-decontamination, which we felt was inappropriate. And, apparently, NIOSH agreed

with that. And in the revised Site Profile, what they did was say, okay, we have, we're going to use the exposures associated with the operations period and apply that to the later periods, you know, after operations terminated, including the remediation period which is `78 - `79 time period.

So the new approach simply says, okay, we're simply going to conservatively assume that the exposures, as derived, such as the 20-gallon drum exposures we talked about earlier and there's also the airborne exposures from inhalation, that were constructed during operations, which we find favorably with, we're going to apply those same assumptions to this non-operational time period. And in my mind, of course, that's bounding. And so my perspective, it's bounding, but it's unusual in that, you know, you would not expect the doses during the standby period or during the post-operational period and the remediation period to be as

high as it was during operations but certainly bounding. And that was why I felt that this was a bit unusual because, usually, the exposures at post-operations at facilities like this, AWE facilities like this, if this is an AWE, I believe it is, would use what's called the OTIB-70 approach for residual radioactivity. And so this is the first time I've seen where they've used the actual operational exposures and just assumed those same exposures occurred during these later time periods, and that's why I felt it was a little unusual.

CHAIRMAN KOTELCHUCK: Comments?

MR. FARVER: So, John, are we okay with --

MR. MAURO: I mean, I only wanted to bring it up to the attention of the Subcommittee because it is, you know, they didn't use OTIB-70. They did something much more conservative. And as far as I'm concerned, you're certainly giving the benefit

of the doubt to the workers. It's just a different approach that is being taken here than we're usually used to seeing, but it's more than bounding.

MR. STIVER: John, this is John Stiver. To me, it really gets more to the issue of sufficient accuracy because, remember, you have a period during the operation period up to `62, we have this material and these drums, these 20-gallon drums and on-site and in whatever configuration they happen to be in. And then you have this standby period from `63 to `77, but, essentially, nothing is going on anymore. And then, finally, the D&D period is, what, `78 to `79.

MR. MAURO: Right.

MR. STIVER: And so, presumably, all the sources, those drums have been removed from the building and, essentially, you don't have the sources of exposure there at that point. So it's certainly bounding. Now, is

it, does it meet the criteria for sufficient accuracy? I guess that's something that the Board needs to decide.

MR. MAURO: John, you nailed it. That's exactly what I was, I mean, surprised to see, such as a simple but certainly bounding approach, which, perhaps, could border on unrealistic. You would not, like you said, you would not expect these 20-gallon drums with residues to still be there when they were doing the work in 1978, the remediation period.

MEMBER MUNN: So this was the question that was outstanding from the presentation in February then?

MR. MAURO: Yes.

MEMBER MUNN: The real bottom-line question here is, we have a bounding situation, and the question is, is it scientifically accurate, adequately so? And SC&A doesn't have a position on that as yet.

MR. MAURO: Our position is that

it's highly unlikely that the exposures would come anywhere near the exposures that are, that they plan to use or they are using for the operations period. It would be much lower. It's claimant-favorable, but I don't think it's realistic.

MEMBER MUNN: Okay. So the current position of SC&A is this is unrealistic?

MR. MAURO: Yes, I guess so.

MEMBER MUNN: Okay.

MR. STIVER: I guess that would sum it up in the sound bite.

MEMBER MUNN: I guess we're going to have to have something that says that to go into the matrix, right?

MR. MAURO: It's really a matter of whether, I mean, from my perspective, you know, you would be certainly bounding the doses by doing this. Now, whether or not the Subcommittee finds that this approach being unrealistic, you know, is acceptable or not.

It's certainly not OTIB-70.

MR. KATZ: Well, do we need DCAS to respond as to why we're not using an OTIB-70 approach? Do we need more information here?

MR. CALHOUN: I'm not sure OTIB-70 was written in 2008.

MR. KATZ: No, no, I know. That's the case. But, I mean, now that we are where we are --

MR. CALHOUN: Yes, if they tell us it's unrealistically high, then we're going to have to address that, I guess.

MR. KATZ: That's sort of the question. But, I mean, the dose reconstruction rule itself does not prevent you from being more coarse in any circumstance where that's the best, the most information you have. So the SEC rule doesn't come into play. It's the dose reconstruction rule, and that does not have any proviso that prevents you from being overly conservative.

But the issue is, more to the point, I think, is, now that we have OTIB-70, if that's a more precise approach, is that the approach that should be applied here?

MEMBER RICHARDSON: So do you think that the upper bound is bounding but it's too high? The lower bound is zero, right?

MR. MAURO: Sure.

MEMBER RICHARDSON: And what's the magnitude of the upper bound?

MR. MAURO: Well, those are the doses that you would get. I don't have them before me. Maybe, Steve, you have it available. The external exposures are the derived doses from the material contained in these 20-gallon drums, and they were --

MR. CALHOUN: `56 to `79, the annual dose is 65 millirem.

MR. MAURO: Okay. Oh, so you're talking about very small doses anyway.

MR. KATZ: Tiny.

MEMBER RICHARDSON: So I've been struggling with this sort of plausibility of, I mean, sufficient accuracy and bounding problem. And how it -- I mean, sufficient accuracy gets to this issue of plausibility. And it seems like there's something about the -- let's see if I can get this -- I had it figured out at one point in my head. It related, it relates to, it relates pretty much to variants of this distribution that you want to assign to, and we can say that it's, in your case, you're saying it's bounding but it's --

MR. MAURO: It really doesn't represent the reality --

MEMBER RICHARDSON: -- it's implausibly high and its variances, we're talking about values in which we want to lay in a range between zero and 65 millirems.

MR. MAURO: Yes, yes. I mean, we're really --

MEMBER RICHARDSON: So I'm not

sure in this case that I, you know, whether we move that stake slightly, that I would have as much concern about plausibility of upper bounds as I would in a case where we're assigning several rem to a worker.

MR. MAURO: Good point.

MEMBER CLAWSON: When we looked at this, we're looking at this as an overarching and we got into this in many sites, and I agree with what you're saying that this one, it really is not going to amount to that much. But the stake that we have put in the ground is that you've got to be able to do, with some significant accuracy, be able to do these. I'm fighting the same issue at Fernald and several other ones. And this one --

MR. STIVER: This is John Stiver. Also, as a word of caution, you look into Los Alamos and some of the other, some of the accelerator-produced materials, which result in very low doses, but it became an issue, an SEC issue as to whether they're

reconstructable. We may be kind of up against the same kind of an issue. It's not really the magnitude of the dose but can it be reconstructed.

MR. MAURO: Well, let me see, in my mind, I was expecting to see, okay, we know what the airborne levels of nickel are during operations, as we discussed all this before, and, therefore, the levels of uranium. And, in theory, I was expecting to see a post-operations model that said, okay, we're going to, we're going to assume that there are no longer any barrels there containing the residue. They've cleared that out, you shut down operation. But you can have residual radioactivity from the settling of the airborne dust onto surfaces.

And then you go through the classic OTIB-70 approach where you get your external and your internal exposure, you know, after termination of operation based on the accumulation of settled material. Then that

declines at that 0.0067 -- what is it -- per day rate of decline. That's your classic OTIB-70 approach.

So it's not that we have a circumstance where you can't reconstruct the doses. Basically, I guess because OTIB-70 wasn't around at the time, you took a simple approach, which was certainly bounding, and it wouldn't be, and what I'm hearing is and the doses you're going to be giving them are still very low because the operational doses are low.

MR. STIVER: Hey, John, it sounds like it's a matter of going back and kind of retooling using OTIB-70 --

MR. KATZ: But, John, John Stiver, it's not worth it is what I think is being said here. The difference isn't worth the trouble. So they're getting a higher dose than they would under OTIB-70, but it's still, what I just heard was it's a relatively trivial dose anyway, and so why bother?

CHAIRMAN KOTELCHUCK: But there was a discussion that this happens elsewhere and it may not be so low.

MR. KATZ: Yes, but, in that case, you're dealing with those cases and talk about it there. Why are we spending time here? We're trying to make progress. Why are we spending time here on a more generic issue about other sites where the doses in play may be higher. Deal with that where the doses are higher.

MEMBER MUNN: And we've had many conversations about the need to look at each of these sites, each of these facilities on its own merit without assuming that we're establishing precedent that covers across the broad spectrum, unless we've stipulated such.

MR. STIVER: And I believe that kind of language is in OTIB-70.

MR. KATZ: And the Board, the Board and, excuse me, Dr. Melius has spoken about this specifically, this issue of where

the doses are higher and it's a bigger issue, we have a different standard to apply. But why apply a tight standard to a no, never mind dose?

MEMBER MUNN: True.

CHAIRMAN KOTELCHUCK: Okay. As long as we're not setting a precedent, that is we're looking at a case at a time, this is a non-issue.

MR. MAURO: The only reason I brought it up is not that I had a finding here. In fact, you may have noticed that I don't have a finding, but I did feel it was appropriate to point this out to the Subcommittee so that we could have this conversation.

MEMBER CLAWSON: John, you did exactly what we've expected you to do.

MR. KATZ: There's no complaint with raising the issue.

MR. MAURO: Okay, thank you.

CHAIRMAN KOTELCHUCK: Very good.

But the issue is resolved now.

MR. KATZ: Right.

MEMBER MUNN: Now we need to derive a statement and incorporate it into the matrix and close the issue, all of them that are covered.

CHAIRMAN KOTELCHUCK: Very good. So that leaves, I believe, two findings outstanding on 8, right? We're finished with --

MR. KATZ: That's correct.

MR. FARVER: What type of warning do you want me to put in there, Wanda?

MEMBER MUNN: We just need to say that SC&A agreed that the new approach was bounding and the Subcommittee agreed, and we closed it.

MR. FARVER: Okay. So we reviewed the TBD and found it to be bounding, no further action, finding closed.

MEMBER MUNN: Correct.

MEMBER CLAWSON: Do we need to put

in, do you feel that we need to put anything in there addressing that this was before OTIB, or do you think we've covered OTIB?

CHAIRMAN KOTELCHUCK: As long as we understand it's not a precedent, which I did not until it was raised. Okay. Then we're ready to go to 9, folks. We have a few issues to go with 9.

MR. FARVER: Okay.

CHAIRMAN KOTELCHUCK: Give some of us a few moments to get to 9.

MR. FARVER: Okay.

CHAIRMAN KOTELCHUCK: We can go to 9 on the O: drive. That's where we should go, right? Correct? Okay. And it is under --

MR. CALHOUN: Wait. I don't know if Stu sent that or not. Let's see.

CHAIRMAN KOTELCHUCK: No, because a lot of us said we haven't seen --

MR. CALHOUN: Oh, yes, that's the old one, yes. We didn't send a new one. You'd have to go back to --

MR. FARVER: I've sent one probably after our last meeting, and that would have been --

CHAIRMAN KOTELCHUCK: Okay. So is that on DR Subcommittee?

MR. FARVER: No, it would have been in your email. Yes, I mean, probably the first couple of weeks of April or so.

CHAIRMAN KOTELCHUCK: Fine. Okay. For better or worse, I have it. Okay. For better. So let's see what was the first one? Because I have something on the first one, on 79.1 C11, but it says NIOSH to review. You're saying that there are, there are things for SCA --

MR. FARVER: Yes. Go down to Tab 185. I think that's where we start.

CHAIRMAN KOTELCHUCK: Okay. Give me a page number.

MEMBER RICHARDSON: Nine of seventy-three.

CHAIRMAN KOTELCHUCK: Okay, thank

you. Yes, sorry.

MR. FARVER: Okay. This is another Huntington Pilot Plant case. The good news is that, based on Steve's report and what he wrote up, we can close a lot of these in this case, in this, yes, this tab, 185. This specific one is about the model photon doses were based on an appropriate method. So they went back and the new technical basis has a different method. And let's see if I can describe it.

MR. MARSCHKE: Well, this is, essentially, the same -- this is Steve again. This is, essentially, the same as the 8th Set, Finding Number 7 of the 8th Set. And, again, we were able to match the NIOSH values to our satisfaction.

MR. FARVER: So we can go ahead and close that one, unless you have any questions.

MR. CALHOUN: Is that 185.1?

MR. FARVER: Yes. A lot of these

are going to be repeats of the Attachment 3 findings. And the second finding, once again, has to do with the model photon doses. And in this case, Steve didn't use the MCNPX calculations. He used Microshield, and he found them to be very similar to the NIOSH values.

MR. MARSCHKE: That is correct.

MR. FARVER: So we can go ahead and close the second finding, also. The third finding, questionable assumption used to derive exposure post-operations and prior to decontamination.

MR. MARSCHKE: This had to do with the finding, the period `64 to `77.

MR. FARVER: Oh, this is when it wasn't even an AWE.

MR. MARSCHKE: It's not an AWE during that period.

MR. FARVER: Not covered during that period. Therefore, the finding is moot. Okay. We're moving along now. 185.4, the

assumption is the beta exposure scenario is limited to two hours per day, it's not justified. Okay. This is where I'm going to defer to somebody to talk about shallow dose and the new Technical Basis Document.

MR. MARSCHKE: Yes, we looked at the shallow dose methodology. Actually, that's one of the reasons why we pulled, we were almost ready to issue it and we pulled it back because it was pointed out to me that I didn't give this enough attention.

And so we looked at it, and we've looked at what, basically, was done was there was a document produced by Oak Ridge back in `58 which presented some beta doses and/or presented a beta dose, a maximizing beta dose. And then using the numbers from that Oak Ridge document, we were able to match the numerical values that are shown in Table 6 of the report. So we think, you know, basically, at this point, we basically agree with the doses that are, the annual doses that are

presented in Table 6 of the report.

That said, there are a number of what I'll call typographical errors in Section 6.2 with the numbers that are in Section 6.2, which makes trying to track how these were calculated kind of difficult. So what we're going to do is, what I'm leaning on doing at this point is, basically, saying the bottom-line numbers in Table 6 on annual dose from the, or annual shallow dose are correct. But the document itself needs to be corrected. These typographical errors need to be corrected because anybody who reads these wouldn't be able to, would have a very difficult time following it. They would have to go back to the Oak Ridge document and so on and so forth.

And so that's where we are at this, on this one. Did you understand me, Doug?

MR. CALHOUN: And we're going to get a report of where the typos are.

MR. FARVER: Is that going to be in your report, Steve?

MR. MARSCHKE: Pardon?

MR. FARVER: Is that going to be in your report where the --

MR. MARSCHKE: Yes, it is. Yes. That's what I was working on when you guys were talking about other things.

MR. FARVER: This 185.4, right? The one thing that stuck out to me is the assumption of the enrichment of the uranium in that. And then it changed based on the new references. What were we meaning? I'm sorry. Go ahead, Steve.

MR. MARSCHKE: The document that, this document, what they did was they didn't use enrichment, per se. What they did was they actually started with a beta dose rate, a contact beta dose rate on an infinite slab of normal uranium. So, basically, they started out with 240 millirems per hour. And then they said the concentration in this residue is

going to be about 1/1000ths of that. It's going to be one-thousand parts per million.

So they came up with then a beta dose rate of 0.24 millirems per hour. And then they, well, then there's a -- that's from an infinite slab. And then they say, basically, that, because the residue concentrates all the uranium into this, into the residue, you start out with a 4,000-pound batch, and the residue is 50 pounds of that. So all the radioactivity ends up in the 50 pounds. All the beta activity from the 4,000-pound batch ends up into the 50 pounds. So you end up with a beta dose rate of 20 millirems per hour. It's 0.24 times 80 or 4,000 divided by 50. And that's, basically -- so they're saying that the dose rate, contact dose rate on these 20-gallon drums is 20 millirems per hour. And this was --

MEMBER CLAWSON: This is part of my question. So we really don't, we don't have -- are we guessing at this enrichment, or

is this just an overall--

MR. MARSCHKE: Well, let's see. What would be, what would be -- you'd have to calculate, I didn't calculate what the enrichment would be with a thousand parts per million. Well, no, I don't even know what -- no, it's --

MR. MAURO: Could I take a shot at this?

MR. MARSCHKE: Yes, go ahead.

MR. MAURO: It sounds like that the calculation is, listen, we know what the contact dose is for pure uranium, not enriched uranium, okay. And we know that pure uranium, by mass, is virtually all U-238, which has progeny thorium and protactinium, which have strong betas.

Now, so if you're saying, well, I have this many parts per million, as Steve pointed out, of uranium. Now, if it's natural uranium, you get all these betas. If you have them at the same number of parts per million

of uranium but it's enriched uranium where there's a lot more U-235 and U-234, and here's where I'm speculating and, certainly, you guys could help me out here, I think that the beta dose goes down because you don't have these big-bang beta emitters coming from the U-238 progeny. I'm sort of standing out on a limb right here speculating --

MR. CALHOUN: No, I think you're right and that gamma dose goes up.

MR. MAURO: The beta and the gamma dose goes -- I didn't follow you.

MR. CALHOUN: No, the beta dose goes down and the gamma dose goes up because of the 185 keV photon.

MR. MAURO: Oh, okay, okay. Well, then it becomes an issue, right?

MR. MARSCHKE: No, we're just talking about beta dose at this point.

MR. MAURO: Oh, if we're only talking beta, then what they did sounds like it's okay. If we're talking gamma, what I'm

hearing is, well, maybe there is a problem with gamma because, you know, if it's enriched uranium, that's at that thousand parts per million, as opposed to regular uranium, you may have a higher --

MR. MARSCHKE: No, we're not talking gamma.

MR. MAURO: We're not talking gamma. Okay.

MR. MARSCHKE: No, we're talking beta.

MR. MAURO: Only beta. All right. So all I'm doing is putting out onto the table, listening to this, why I think maybe the beta dose, by assuming it's natural uranium because that's where you get that 240 millirem per hour number, that's the natural uranium, why, if it was not natural uranium but enriched uranium, the beta dose would actually be lower. I can't say how much, but I --

MR. CALHOUN: I'm not sure it

would be significantly lower because that first actinium beta grows in awfully quickly off the 238, unless you got a significant enrichment. But, like you, John, I'm not going to go out on that limb. I just know that --

MR. MAURO: Yes, I'm just saying that maybe -- yes. I'm trying to help work with Brad on this. Brad, you bring up a good question. That is, we're not dealing with natural uranium, we're dealing with enriched uranium. The question is does it make a difference?

MEMBER CLAWSON: Well, to me it sounds like we don't know what we're dealing with. It could be enriched or it could be clear down to not. But, you know, if it's coming out, if it's coming out of the gaseous diffusion plants, it's got to be enriched.

MR. CALHOUN: We've got a report in the TBD that talks about the enrichment, but it's given in grams per pound, and I can't

do that math right now here. But it's 0.00875 grams per pound, and that's an AEC report from 1958. So we know what the enrichment was.

MEMBER MUNN: Which isn't very high.

MR. CALHOUN: The average enrichments of one to two percent.

MR. MAURO: Yes, that was in the report. I remember reading that in the original report.

MR. CALHOUN: Yes, yes.

MEMBER MUNN: And anything as high as 40 percent would be really unique and extremely unlikely.

MR. CALHOUN: Right. That's in a TBD, as well.

CHAIRMAN KOTELCHUCK: Okay, all right.

MEMBER CLAWSON: I guess, Steve, what you're suggesting to the -- I was reading a little bit more into it, possibly, than there was. But your report that you just gave

to us is that there was some typographical or typos in there.

MR. MARSCHKE: There's some typos in there, but the bottom line, you know, we were able to match their numbers. Now, you bring up some points about, you know, if we look at this, we could do a parametric study and look at this from, you know, see what the effect of enrichment would have on the beta dose and see whether or not, you know, it's going to be any, how significant it would be. But right now the report is basically saying we were able to match the NIOSH numbers when we make these corrections to the typos, and so, you know, I was satisfied with it. Let's put it that way.

CHAIRMAN KOTELCHUCK: Okay. I believe we're going to down to 185 --

MEMBER CLAWSON: But the closure is for those typos to be taken care of and that's a --

CHAIRMAN KOTELCHUCK: Okay.

185.5?

MR. FARVER: 185.5 is similar to the third finding where this is outside of the AWE period, and I believe it's already closed.

MR. CALHOUN: That is closed, yes.

MR. FARVER: Okay.

CHAIRMAN KOTELCHUCK: Well, closed. Okay.

MR. FARVER: Finding 6 and Finding 7, we suggest they remain open, and Steve is going to tell us why, I hope.

MR. MARSCHKE: Which one is which? Finding 6, Finding 6 is the airborne dust-loading, yes. We went back and we looked at the -- NIOSH got both of the dust-loading from a report prepared by Enterline and Marsh, and there's a table in there, Table 8 of the Enterline and Marsh document, and the Table 8 contains different airborne concentrations for different areas of the plant, and it's a combination of measurements that were taken during the operating period and concentrations

which were taken later.

And our concern was, you know, the concentrations that were taken later, we didn't think they should be used when you calculate the 95th percentile calculation because we felt that they would probably be lower than what would be the concentration during the operational period. We did look at Enterline and Marsh. They do talk about this. They do state that they made an attempt to adjust the modern data based upon process knowledge and environmental controls that were implemented over the years, but they do warn that the historical exposures, even so that the historical exposures would probably be greater, of greater magnitude, which, for what Enterline and Marsh was doing, was conservative but for what we're doing would be not conservative. So we felt, that's one of the reasons we feel that, basically, this finding should stand.

The other reason, again, if you go

to this Enterline and Marsh report and you go to the very beginning of the report, you know, way before Table 8, they give some nickel concentrations in the, I guess the crusher, the area where the crushing and the grinding and handling occurs and around the calciners. And the concentrations that they, the nickel airborne concentrations that they give at the beginning of the report in these areas, are significantly higher than any of the values that are given in Table 8.

So, basically, we're just wondering, you know, why these numbers were not included in the 95th percentile calculation and, you know, should they be included in that calculation? So, really, there's two, in the new report there's two kinds of phases or two parts to this finding, one is we don't think we should be using the new data from Table 8. You should, basically, only use the historical data. And, secondly, you know, this information on airborne nickel

concentration that Enterline and Marsh present at the beginning of their report, you know, we think that that should be somehow factored in or discussed somewhat. And if you decide not to use it, give a reason why it's not used.

So that's the reason why, like Doug said, this one, we recommend it still stay open.

MR. FARVER: And you speak of this in your report under Finding 5 and 6 of your report?

MR. MARSCHKE: Yes, we do.

MR. CALHOUN: Do we have that one yet?

MR. MARSCHKE: No, that's the same report that we're finishing up right now.

MR. MAURO: You may recall at our last meeting, I pointed out that if you use just the old data, the older data, you come up with a higher 95th percentile value, maybe ten times higher. But I was troubled by that because, in that old data, I believe, I forget

how many measurements there were that represented the old data, there was one outlier that was this 5 milligram per cubic meter number. And I remember we had a little discussion about what do you do when you have an outlier, and that was sort of, like, where we left things off that, you know, we didn't make any conclusions about it when we have just a single value that is driving the upper 95th percentile value quite far. All the other values were in line with everything else.

However, now Steve doing a more definitive analysis and going into the source documents in the SRDB, he's finding that the 5 milligrams per cubic meter does not appear, necessarily, to be the highest value. There are other values that are up there, I think one as high 20 milligrams per cubic meter, and --

MR. MARSCHKE: Well, one ranges, from one area they range from 20 to 350.

MR. MAURO: Okay.

MR. MARSCHKE: So, yes, if you go and look at these concentrations that they give at the beginning of the report, Enterline and Marsh give at the beginning of the report, in one area they have a range from 20 to 350 milligrams of nickel per cubic meter and, in the other area around the calciners, they have a range from 5 to 15 milligrams of nickel per cubic meter. So both these ranges, the lower end of both these ranges, is at the upper end of the Table 8 values.

MR. MAURO: I'll just point out that when you start to get into the hundreds of milligrams per cubic meter, it's not respirable. I mean, a person can't work in that environment. You know, I'm not too sure where they're at actually at a toxic level with nickel; that's a different question. But, I mean, just in the point of view of nuisance dust.

So we have a couple of confounding

problems here is that we really still need to, NIOSH, I guess, needs to look into whether the numbers that they use that they ultimately picked, this 95th percentile from that set of measurements, as Steve pointed out, should they have also included these other measurements that are well above the 5 milligram highest value that was reported in Table 8? I think we need to hear a little bit more about that.

MR. FARVER: So what would you like the action to be?

MEMBER CLAWSON: Well, as soon as we get that report, I guess NIOSH will have to respond to it.

MR. CALHOUN: That's what I'm thinking.

MR. KATZ: Right.

MR. FARVER: Since it's identified as findings in that report, we'll have to respond to that. We're not going to have any further action. We're going to close this.

MR. CALHOUN: How can you close it?

MEMBER CLAWSON: Can't close it until we get their response.

MR. CALHOUN: I'd love for you to close it but--

MR. KATZ: We're waiting on their response after they get your report.

MR. FARVER: And telling myself to keep opening and closing in the same sentence.

MR. MAURO: Could I ask a process question? This report that we're putting out which would contain a lot of these commentaries on the Site Profile, now, of course, these affect the dose reconstruction. When you get this report, the Huntington Site Profile Review, is that going to stay within the DR Subcommittee or is that something that will be moved out and go over to, let's say, an AWE workgroup?

MR. KATZ: Well, there is no workgroup, other than the TBD-6000 and 6001.

MR. MARSCHKE: John, remember that Huntington started out as an AWE and is now classified as a DOE site.

MR. MAURO: Oh, this is -- oh, okay. This is a DOE site.

MR. MARSCHKE: So there really isn't a workgroup --

MR. MAURO: That's right. You told me this last time and I forgot about that. Yes, yes, there is no Workgroup. Okay.

MR. KATZ: Right. So we'll try to resolve this stuff here.

MR. MAURO: Okay.

MEMBER CLAWSON: You know, somehow we ought to capture that, too. That's going to have to be addressed here because a lot of times it's easy.

MR. KATZ: Yes, it's nice.

CHAIRMAN KOTELCHUCK: I'm scrolling down and going a long way. Hey, finally, on page 22 I think I see something.

MR. FARVER: Oh, did we go over

185.7?

MR. MARSCHKE: 185.7, that basically says they only considered -- what was the value? Considered radionuclides other than uranium. Well, if you look at the new Site Profile, they considered two radionuclides other than uranium. They considered plutonium-239 and neptunium-237. But, again, we still feel that the finding stands because, if you look, Huntington was getting the nickel from the three gaseous diffusion plants. And if you look at the Site Profiles for the three gaseous diffusion plants, for example, they have a whole suite of radionuclides: americium, different uraniums, thorium, technetium-99 in particular. And, basically, I think, you know, some of the gaseous diffusion plants, when they talk about these radionuclides, they mention specifically technetium-99 as being a concern from a dosimetry standpoint for recycled uranium. And because the Site

Profile is missing technetium-99, as well as some of these other radionuclides, we think that that's, you know, that that's a finding and needs to be resolved.

MR. FARVER: Okay. And you also mention this as Finding 1 in your report; is that correct?

MR. MARSCHKE: This is Finding 1 in our report, yes.

MR. FARVER: Okay. So it's also addressed in your report?

MR. MARSCHKE: That's correct.

MR. FARVER: Okay. So that takes care of 185. I think we go down to 194 --

CHAIRMAN KOTELCHUCK: Ninety-five, 195.

MR. FARVER: Let's go down to 194 point something. I'll be there in a second.

CHAIRMAN KOTELCHUCK: Okay.

MR. MARSCHKE: Doug?

MR. FARVER: Yes, sir.

MR. MARSCHKE: Do you need me

anymore?

MR. FARVER: Nope.

MR. MARSCHKE: Thank you.

MR. FARVER: Thanks, Steve.

MR. MARSCHKE: I'll log off then, if that's okay.

MR. KATZ: Thanks, Steve.

MR. MARSCHKE: Thank you. Bye-bye.

MR. STIVER: Doug, I think you had a question about observation three in 194, if I recall correctly.

MR. FARVER: Oh, that is one question, but we had one before that I just wanted to close out. 194.2. It never says it's closed. It says something like SC&A will provide a follow-up response. Just to give you a brief update of what this is, what it amounts to is the DR report said that they are going to assign an X-ray exam annually, based on the Site Profile. Okay, common wording. They said they used the actual employee

records. The employee had 17 X-rays. I believe five of them were for, like, broken fingers and things like that. So they used 12 of them.

It turned out that it wasn't for every single year. Okay. I think there were, like, three years where there was no annual chest X-ray. But what they did, they used the employee records instead of an assumed frequency. So I don't have a problem with that after looking at it closer. It was just the wording. The wording was incorrect. I just want to close that out.

And if we go down to observation three of 194, let's just finish up with that. Observation three. Let's get the right one. Observation one of 194. That's the right one. This is where we had some reason to believe that they may have used PFG exams at Fernald in the earlier years, `51 through `58. In talking with John Stiver, I'm not sure that this has even been talked about from

Fernald Workgroup. Where did we see that dialogue, John? It was in one of the transcripts from early on, the one in the Workgroup meeting or somewhere, that --

MR. STIVER: I believe this one was from, oh, gosh, I want to think November 2011 or 2010. It wasn't a Workgroup meeting. It was a Dose Reconstruction Subcommittee meeting, and it was an idea, the question being had it actually been transferred and was it being handled in the Fernald Workgroup. The answer being is that it's in queue with all of the other Site Profile issues, pending resolution of the SEC issues.

MR. FARVER: The last I could find on it, the action was Elyse was going to go to the records and see if she could find actual exams, films, and you could probably tell if it was PFG exams by the size of the film, if I remember right what I was reading. I don't believe it's officially been taken up by the Fernald group.

MR. STIVER: No, it has not.

MR. FARVER: I don't know how we make that happen.

MR. KATZ: Well, John said he can put that on his --

MR. STIVER: Yes, I'd be the first to say I'd love to address that. There are quite a few outstanding Site Profile issues that are kind of in a holding pattern until we resolve the SEC issue. And, you know, once that happens, why, then we'll re-baseline the matrix and go after the Site Profile issues. But that has not happened yet.

MEMBER CLAWSON: John, this is Brad. Would you make sure that we get this put into the matrix, the --

MR. STIVER: Absolutely. I believe it's Finding 30 out of the 33 of the original Site Profile Review from back in 2006.

MEMBER CLAWSON: Okay.

MR. FARVER: So do we need any

further action?

MEMBER CLAWSON: Just that it was turned over to the Workgroup.

MR. STIVER: I have indication that it's been transferred.

CHAIRMAN KOTELCHUCK: Wanda?

MEMBER MUNN: Yes, transfer it.

MR. FARVER: Okay.

MR. KATZ: Yes, it's not even really being transferred. It's being handled there, right? It's on their list so--

MEMBER MUNN: Okay. So it will be resolved there.

MR. KATZ: Right, exactly.

MR. MAURO: Do you close these here, or do you keep these in abeyance or something like that?

MR. KATZ: Close it here.

MR. MAURO: You close it here?

CHAIRMAN KOTELCHUCK: Okay. I'll put that in.

MR. FARVER: No further action.

CHAIRMAN KOTELCHUCK: Okay.

MR. FARVER: Now we're going to jump down to 195. And let me see what it is. Oh, 195.1 was NIOSH agrees to the reviews situation determined PER is required. So that's still in Grady's ballpark.

MR. CALHOUN: What site is this one?

MR. SIEBERT: Oh, this is Scott. This isn't a site. This is the idea of not using AP and instead using rotational and isotopic.

MR. CALHOUN: Oh, yes, okay.

MR. SIEBERT: Yes. This is the kind of one, and this is a question on how the Subcommittee wants to handle this. I think NIOSH and ORAU are already discussing how to be dealing with this PER and exactly how to, you know, whether we roll it into a different PER and things like that, but that's not a discussion that will be completed in the near future.

MR. CALHOUN: We're in the process of revising the DCFs, I guess, according to what ICRP, the revised ICRP 116; is that right? It just came out. And there's going to be, there's no doubt there's going to be a monster PER that comes out because, as it turns out, some of the DCFs are going to go down and some of the DCFs are going to go up.

MR. KATZ: So does the Subcommittee want to hold this open or simply reference that this is going to be addressed in this PER --

MR. CALHOUN: Oh, it's definitely going to be addressed in the PER.

MR. KATZ: -- and close it?

MR. CALHOUN: But it's not going to be for months.

CHAIRMAN KOTELCHUCK: But the question is if we close it that means the action on this is, does it await PER, the new PER, or --

MR. KATZ: The action is that it

will be addressed in the new PER.

MR. CALHOUN: Yes, each individual dose reconstruction will be reviewed that is non-comped based on the changes of the PER.

CHAIRMAN KOTELCHUCK: Okay. So that's how you'll go over all the --

MR. FARVER: This is a finding that comes up over and over in our reviews. That's why I call it standard findings since they have not been applying what has been written in there. I guess it's IG-001, current revision.

MEMBER RICHARDSON: So when they update them, they cannot apply those?

CHAIRMAN KOTELCHUCK: That's good. Okay. We've closed that then.

MR. FARVER: Yes, so we close it because my guess is, just because there's such a lag, you're going to see this finding again in one of our other reports.

CHAIRMAN KOTELCHUCK: Yes.

MR. SIEBERT: We're going to see

it later today if we get that far.

MR. FARVER: Okay.

MR. KATZ: Right. And in the future, if it's the same thing and it's being addressed the same way, you can put the answer with the finding because, otherwise, we're wasting time.

MR. FARVER: Yes. What we'd normally do is, in the future, if we find a case where it's not addressed, we would write it up as an observation on that point and say this has been previously identified.

MR. KATZ: And it's being addressed.

MR. FARVER: And it's being addressed by --

MR. KATZ: Blah, blah, blah.

MR. FARVER: -- by somebody, by Ted.

MEMBER MUNN: Being addressed by the PER.

MR. KATZ: Exactly.

CHAIRMAN KOTELCHUCK: Okay. Addressed by the PER.

MS. BEHLING: Okay. Yes, this is Kathy. Does this have to do with that Table 1.4B or whatever that we routinely identified that they -- because, as we always say, the implementation guide is one of those documents that was supposed to be the overarching or, you know, more of a guidance document. And I don't know how often, and I may be wrong here, but how often the dose reconstructors go to that specific table. I'm just trying to understand, are you saying that this will be incorporated into a PER once you change the DCF values? Because this is a little bit different. It's a table that was introduced into the implementation guide. Am I wrong?

MR. FARVER: No, it's a table. It just has to do with applying different geometries, dose conversion factors for different geometries, and when --

MS. BEHLING: Right. And we had

pointed out a long time ago that the AP geometries are the only ones that should be used, and then this Table 1.4B was introduced, and we recognized that the dose reconstructors will go to an OTIB or to a procedure or to a Technical Basis Document quicker than they will go to the implementation guide, but there is specific guidance in this table that is not being followed.

MR. FARVER: Correct.

MS. BEHLING: Okay. And I just, we see this so often, and it just points to me that there should be a PER for this. And I just want to be sure that adding a new appendix to Implementation Guide 1, that this will be incorporated into that.

MR. CALHOUN: Any changes to any of our documents, whether they're IG, TBDs, TIBs, whatever, that result in an increase in dose will result in a PER.

MS. BEHLING: And that's been the question all along. Why hasn't there been a

PER for this particular issue, this Table 1.4B, which increases the dose for certain types of cancers because you're changing your geometry?

MR. CALHOUN: It may be, and I'm guessing here, it may be on the list. We've got many, many, many PERs on our list to get done. Any new DRs that are done are done to the current standards, but we also have a backlog of PERs that we are going to get done, and that may be the answer. I was thinking it was just relative to IG-001 Rev that hasn't happened yet but they're in the process of doing that now. So I would guess that it's just in the process.

MR. FARVER: I mean, from this point, it's not a matter of reviewing it. It's a matter of you're not following what's already written.

MS. BEHLING: Right. And what I'm --

MR. CALHOUN: Oh, so it's just an

error.

MR. FARVER: You're just not following the guidance in IG-001.

MS. BEHLING: Correct. And what I'm concerned about is that, even when you make a revision to the implementation guide, this is not going to get caught. And I just want to be sure that any changes made, because you may make a change to the implementation guide that says that now that the DCFs in appendix are going to change and that's all you're going to look at. But this table is in there, and it's not, they're not using it. As I said, and I understand how the dose reconstructor can sort of, because it's not in a typical procedure or OTIB that they would use routinely, it's buried in some revision of the implementation guide, and there was never a PER for it, and I just want to be sure that when there is another revision that this does get caught.

MR. CALHOUN: I don't know. I'm

going to have to look because if this is somewhere other than IG-3 or other than IG-1 -- are you saying that this table is someplace else?

MEMBER RICHARDSON: No, it's Table 4.1.9 of IG --

MR. CALHOUN: Of IG-1.

MEMBER RICHARDSON: -- 001 Revision 3.

MS. BEHLING: Yes, yes. And the dose reconstructors are not using this. They're not applying this. And this is what I've been saying for several times now. It applies to only specific cancers, and I just felt there should have been a separate PER for this issue and we see it routinely on the dose reconstruction.

MR. CALHOUN: Well, then I guess we'll go back to NIOSH agrees to review the situation and determine if a PER is required, and we have an open item then.

MS. BEHLING: Okay. That makes

more sense to me.

MEMBER MUNN: I think that's appropriate, given the fact that it keeps coming up in both subcommittees and we have this DCF factor and whether or not it's an appropriate place in the implementation guide. We seem to discuss it a lot, and so far we don't seem to have any consensus. It moves back and forth between the discussions.

MS. BEHLING: Agreed. But I am afraid, based on what I just heard, that this will not become part of a PER even when there's a revision to the implementation guide. I think this issue has to be looked at separate.

MR. CALHOUN: Okay. We'll have a response next time.

MS. BEHLING: And the other thing that Wanda is just bringing up, also, is the fact that perhaps that table needs to be in something that the dose reconstructors use on a more routine basis. They're not always

going to go to the implementation guide for very specific issues such as this. And so that's why we're finding, we're seeing it so often in our audits.

MR. FARVER: And just for clarity, it's Table 4.1.A, not 9. And this is the case where there's two tables with the same number.

MEMBER MUNN: Right, yes. That's supposed to be corrected. That's one of the things that correct this --

MR. FARVER: Okay.

MEMBER MUNN: -- in the next revision.

MR. FARVER: To confuse the matter more.

MR. KATZ: So it sounds like we need clarification from DCAS as to how this is even being used currently, let alone whatever comes with respect to PER.

MR. FARVER: How they're implementing the guidance in Section 4.4.

MR. KATZ: Exactly. Did you

capture that, Doug?

MR. FARVER: I will.

MR. KATZ: Okay, thanks.

CHAIRMAN KOTELCHUCK: Hello? Somebody is trying to talk.

MR. KATZ: Is that Wanda?

CHAIRMAN KOTELCHUCK: No.

MR. KATZ: I'm sorry. I still can't hear.

MR. FARVER: NIOSH to follow up on how they're implementing Section 4.4.

CHAIRMAN KOTELCHUCK: Okay.

MR. FARVER: And that's the exposure geometry.

CHAIRMAN KOTELCHUCK: That's the third one we're coming back to?

MR. KATZ: Yes.

CHAIRMAN KOTELCHUCK: That's the third one.

MR. FARVER: Yes, we'll come back to that at some point.

CHAIRMAN KOTELCHUCK: There's not

much else. Page 63, 215, observation four. That's the next one I see that's shaded in.

MR. FARVER: There's a 195, observation one, I believe.

CHAIRMAN KOTELCHUCK: Oh, I missed that somehow.

MR. CALHOUN: That's because it's an observation. It's not highlighted.

CHAIRMAN KOTELCHUCK: Oh, okay, yes.

MR. FARVER: And this is --

CHAIRMAN KOTELCHUCK: And I really just looked at the highlights.

MR. FARVER: Real briefly, this has to do with, a lot of it comes down to reading handwritten records. And sometimes we looked at them, and I just looked at them here, and they're difficult to read and sometimes you come up with small discrepancies in numbers. I think that's part of it in this case. And the other part is if you sum up just the numbers that are in the records,

you'll come up with one number. If you sum up the numbers that NIOSH used for the photon doses, you come up with another number. Now, why is that? Well, one reason is because some of those recorded values were greater than zero but less than the LOD. So NIOSH equated those to equal or to zero and didn't count those in their total. So, therefore, we will get a larger total by totaling the records than you would by just totaling their photon doses. What that allows them to do is calculate a missed dose for those years. So that's what it came down to after looking through everything.

CHAIRMAN KOTELCHUCK: I don't understand why, if it's below the LOD, why you don't just write LOD divided by two.

MR. FARVER: Well, that's what they'll do. They'll use that calculate missed dose, but, under the recorded dose, it goes into the zero.

CHAIRMAN KOTELCHUCK: Yes, okay.

MR. FARVER: So that was the difference, so no further action on that one.

CHAIRMAN KOTELCHUCK: Alright.

MR. FARVER: I thought there was another one. Finding 4. I'm not sure what there is to say about Finding 4. I thought it was resolved with NIOSH's answer. Basically, what we point out is we're not disagreeing with what they did in their intakes. It's the numbers that are in the one report do not match what is in the IMBA calculations. And NIOSH points --

MR. SIEBERT: I'm sorry. This is Scott. What finding are you working on now?

MR. FARVER: It's observation four from 195.

MR. SIEBERT: Okay, thank you.

MR. FARVER: And what it comes down to is, yes, the numbers don't match and the doses are far less than one millirem anyway, so they weren't counted with either dose. Whether you used the high dose or the

lower dose, it didn't matter because it was all less than one millirem.

Once again, it comes down to what's written in the report versus what's actually done, which is why it was an observation to begin with.

MR. KATZ: Does that take care of, is that --

CHAIRMAN KOTELCHUCK: No, not quite because I know there's something way at the end.

MR. FARVER: There is?

CHAIRMAN KOTELCHUCK: Yes, there is. Down at page 63, there's something shaded in 63.

MEMBER CLAWSON: That completes 195, doesn't it?

MR. FARVER: Yes.

CHAIRMAN KOTELCHUCK: Yes, it certainly does.

MR. CALHOUN: There are several after it.

CHAIRMAN KOTELCHUCK: Oh, here. I see. Let me see what it is. It's 215, observation four. NIOSH will evaluate further.

MR. FARVER: Oh, okay. We'll just put that down again. Okay. And I believe that is all from the 9th Set.

CHAIRMAN KOTELCHUCK: Okay. That's all from one set for today. That's all for today in the 9th Set.

MR. FARVER: Or we could just say it's all for today, but I don't think I could convince anyone of that.

CHAIRMAN KOTELCHUCK: No, no, not quite, although you have an early plane to catch but that's another matter. What time do you need to leave for 6:00.

MR. FARVER: It depends how security is in there today.

CHAIRMAN KOTELCHUCK: It's pretty quick.

MR. KATZ: You certainly need to

be out of here by five.

MR. FARVER: Yes, I'd be more comfortable before five.

CHAIRMAN KOTELCHUCK: Yes, a quarter of five?

MR. KATZ: Ten to five?

MR. FARVER: Yes. After 4:30 but before 5.

CHAIRMAN KOTELCHUCK: A quarter of five, roughly. Okay. So we are now ready to go to 10, right?

MR. FARVER: It will be the 10 through 13, Savannah River.

CHAIRMAN KOTELCHUCK: Okay.

MR. FARVER: And I think we have some things there.

MR. KATZ: We do.

CHAIRMAN KOTELCHUCK: And they would be on the O: drive, perhaps.

MR. KATZ: Well, they were sent to you by email, as well.

CHAIRMAN KOTELCHUCK: Okay.

MR. KATZ: But, yes, they would be on the O: drive.

CHAIRMAN KOTELCHUCK: Quite frankly, if they're sent by mail -- I can find them on email. You mean you just sent them to me --

MR. KATZ: No, no, they weren't just sent. I think the SRS ones, I don't know when they were sent, but they were sent at some point.

CHAIRMAN KOTELCHUCK: Right.

MR. FARVER: But they were ones you forwarded yesterday from Grady.

CHAIRMAN KOTELCHUCK: Oh, okay.

MR. FARVER: And the other ones I sent on April 19th.

MR. KATZ: Yes, but I forwarded also LANL and Rocky Flats.

CHAIRMAN KOTELCHUCK: Okay. 10 to 13, SRS. Good. Okay. We've been through a few of these before, right?

MR. FARVER: Yes.

CHAIRMAN KOTELCHUCK: 11th Set, 257.1. The RSC action.

MR. FARVER: Well, it was NIOSH checking to having an automated notification closer to real-time. Okay. And this has to do with records arriving after the initial records.

CHAIRMAN KOTELCHUCK: Right, right.

MR. FARVER: But prior to the final decision. Oh, that is kind of difficult.

MR. CALHOUN: Okay. This case, what I can tell you is that -- let me make sure I'm not lying. We actually did re-review that one. It was completed on 12/2/11. When was this review done, do you know? When did you guys finish yours? I'm trying to--

MR. FARVER: I don't know.

MR. CALHOUN: Okay. Because if it was prior to 12/2/11, is that possible that the 10th Set was done prior to --

MR. SIEBERT: It was done prior to that, I'm sure.

MR. CALHOUN: Okay. Well --

MR. SIEBERT: Which claim number are we talking about?

MR. FARVER: Tab 257.

MR. CALHOUN: Yes, yes. Scott, what I've got here is I'm looking at the PADs, and those are post-approval dosimetry reports I talked about a while ago. And on 12/2/11, we reviewed the additional dosimetry that came in for that case which could include X-rays, and the actual PoC went down --

MR. SIEBERT: This claim was done in 2007.

MR. CALHOUN: -- three percentage points.

MR. FARVER: The concern is that the, you know, the dose reconstruction was done with the records they had available. It got sent over to DOL, and, in between that period, more records arrived and nobody

notified each other that, hey, these records arrived, you might want to put a hold on that decision letter or anything like that. And that's the notification process we're talking about.

MR. CALHOUN: Yes. And we don't have anything that's approaching real-time, but, you know, when we do get new records, we do have a process in place that evaluates them. So if the compensation decision flips to positive, we'll recall that case and have it redone.

MR. FARVER: But, I mean, once you get records in, do you notify DOL that you've got records in and they might want to hold?

MR. CALHOUN: No, we notify DOL after and only if we do a, only if the evaluation we do flips it to comp. There's no sense having them redo a case to send out a lower Probability of Causation.

MR. FARVER: Well, it's not a matter of redoing a case. It's a matter of

them holding up a month on their final decision letter until they have time to look at the data.

MR. CALHOUN: We don't have that in place. I'm not sure, logistically, how easy that would be or if we're ready to do that. I mean, we've got something in place that fills that gap.

MR. FARVER: Do you typically get records in after your dose reconstruction is completed?

MR. CALHOUN: Typically? No.

MR. FARVER: Okay.

MR. CALHOUN: But we do, and we've done, I can tell you, we have done a lot of these. We've reviewed over 2300 cases in this manner.

MR. FARVER: Where you've gotten data in afterwards?

MR. CALHOUN: Yes.

MR. FARVER: And you've looked at the data and redone the case?

MR. CALHOUN: Yes, yes. And that data can come from a variety of ways. It can come from, let's say, hey, you know, this site is not giving us all the medical X-rays, for example, you need to start getting those and they'll send them. It can happen from data capture efforts. It can happen from requesting and getting an electronic database.

And what happens is these hard documents are OCR'd, if possible. And if other recognition is required, we link the Social Security number and other identifiers to cases and, periodically, not continually, periodically, we'll run a, I'll call it a program that checks to see if we've got new data in prior to or after a dose reconstruction has been approved. If the dose reconstruction has not been approved, that data is automatically linked, so we'll have it when it's time. And if it is after the dose reconstruction is approved, they'll review it and they'll send the information out and every

week I get a report of the new PoC versus the old PoC.

MR. FARVER: And that's in a procedure somewhere on how you handle --

MR. CALHOUN: No, it's just something that we do. We don't have a document that, I don't have a procedure that requires that. I don't know if ORAU does. It's just something we thought was a good idea and we started doing it and we do it routinely now. It's not haphazard. It's something that's done routinely.

MR. FARVER: I just was wondering why it wasn't done --

MR. CALHOUN: It was.

MR. FARVER: No, it wasn't.

MR. CALHOUN: It was. It was done in, we got the information in `11.

MR. FARVER: No.

MR. CALHOUN: Then we're talking about two different things then.

MR. FARVER: We're talking about

the medical X-rays that were provided after the dose reconstruction was done, so I'm assuming the dose reconstruction was done prior to February of 2008.

MR. SIEBERT: The final decision from DCAS forwarding it onto DOL happened in December of 2007.

MR. FARVER: No, the final decision letter went out in April 21st of 2008.

MR. CALHOUN: But the final decision letter versus our final DR are very different, and sometimes we never get that. I'd say, more often than not, we don't get the final determination letters.

MR. FARVER: But when you reviewed this case, you guys didn't even look at this new medical data. That's my point.

MR. SIEBERT: Doug, what you're saying is three months before we received the data we didn't look at it.

MR. FARVER: That's correct. I'm

saying there's nothing in the file saying you looked at it. That's correct. And there was nothing in the file we got saying that you looked at it, but the data was there, the final decision letter was there --

MR. CALHOUN: But the new data was not.

MR. FARVER: The new data was there.

MR. SIEBERT: The new data was there when you did the review. However, --

MR. FARVER: That's correct.

MR. SIEBERT: -- you did the review against [unintelligible] did not have that information.

MR. FARVER: That's the point.

MS. LIN: Okay, Doug. This is Jenny with HHS. So, basically, you're saying that the data that came after the dose reconstruction that has already been completed by DCAS, DCAS should have recalled that case and do a dose reconstruction based on the new

information?

MR. FARVER: No.

MS. LIN: So what's your concern for this line of conversation?

MR. FARVER: My concern is that, once you get data in that could potentially affect the case, you should at least notify DOL saying we have new data, it just arrived, we haven't had a chance to evaluate it, so they don't go issue a final decision later hastily. That's all.

MS. LIN: So DCAS looked at this new information and determined whether it would impact the case?

MR. CALHOUN: We did, Jenny. And here's the deal is that we've got well over 2,000 cases that we've reviewed, and there's only been three or four that have impacted the decision. So us telling DOL that we got new data and having them put the brakes on something for instances that are so infrequent, it's not a, I don't think it's a

good idea. It's not a good idea to halt the dose reconstruction answer that we're getting to the claimant from DOL, and the mere fact that we have a process in place to make sure that these are evaluated is sufficient, in my mind.

MS. LIN: Right. And so what I'm hearing is that Doug is dissatisfied with this procedure in place.

MR. CALHOUN: He wants something that's more real-time.

MS. LIN: I -- okay. Well, the agency has a procedure in place, and I think that's the end of it, I mean, unless the Workgroup has a different recommendation to make to DOL, as well as DCAS. We'll take it under consideration.

MR. KATZ: Well, yes, how frequently is, the procedure in place, how frequently do you review cases?

MR. CALHOUN: I don't know that. Scott, do you know how often they run that

SPEDELite.

MR. SIEBERT: SPEDELite is run on an every month basis. As to updating the PADs list, that's on a basis, I believe we worked that out with you that we do it on -- it's relatively, I can't tell you a specific, there's not a frequency that it's set on, but I believe it's every, like, six months or so, something like that.

MR. CALHOUN: But we get updates and reworked cases every week.

MR. SIEBERT: Yes, there is a list of PADs that we are working through, as we speak. This one, actually, as Grady was saying, I'm looking at the form for it that we did it in December 2011. We reviewed this additional data and determined the impact on the decision. We do that periodically with additional data, as time permits.

MEMBER RICHARDSON: I have a question. If DOL sends out what's called a final decision letter and then they find that

their final decision is not really final, are there, what are the consequences of that? Are there administrative obstacles, barriers --

MR. CALHOUN: No, in these cases, and it happens for other reasons, it's similar to a final decision issued and then a new cancer is identified, although they end up finding that. But anytime we find an issue that needs to have the case reopened, we contact DOL and they send it to us, and it's never been an issue.

MEMBER RICHARDSON: And so, and do you contact the claimants?

MR. CALHOUN: That's up to Labor.

MEMBER RICHARDSON: So what you're saying is you move along at a pace determined by information at hand. You make a calculation of the Probability of Causation. That goes to the Department of Labor. They issue a letter, which is called their final letter, and if you get new information you'll send them back an updated calculation.

MR. CALHOUN: Correct. We'll send them an information, we say we've got new information that could possibly affect the Probability of Causation, send us a new case. And they'll reopen that case and send it to us.

MEMBER RICHARDSON: I mean, so, in a sense, that's as close to real-time as, I mean, you're working in real-time with --

MR. CALHOUN: But we do have a backlog of these. There's no doubt. I'm not going to tell you that if we go to a repository last month and we find new data for Bob that we get a PAD done in the next two months. I don't know the period --

MR. KATZ: Scott said, he said it's probably six months.

MR. CALHOUN: Yes.

MR. KATZ: And so that's the issue, there's an issue for the program. It's six months.

MR. CALHOUN: Right. And it will

become quicker because we were working off a backlog, but right now we've got, you know, we just started doing this maybe, maybe two years ago maybe. But it's something that is very, you know, consistent.

MEMBER CLAWSON: But, Grady, isn't this also where we, I'm looking at this from a Board Member because we get a, a claimant gets up and they tell us, yes, I got my final letter and then a year later I got that they found new information and my dose, my causation went down.

MR. CALHOUN: No, because if it goes down we won't even tell Labor.

MR. KATZ: They wouldn't, they wouldn't, they wouldn't institute this process on a case where it goes down.

CHAIRMAN KOTELCHUCK: I mean, a person might say you haven't made your mind up. You said final, and now you say, well, maybe, but, on the other hand, I feel like it's more important to say that change might

happen. It reopens possibilities for that person that they may be compensated. They will be very upset when they find out, initially, that they weren't.

MEMBER CLAWSON: I just know that we've had troubles in the past that they've gotten us and then got a letter and their causation is a lot lower. I guess my question is, Doug, what did you feel that we needed on this?

MS. LIN: I think, before we move forward in proposing any kind of change in this protocol, this isn't something that NIOSH can unilaterally initiate. I mean, we can inform DOL or whatever whenever we think is appropriate, but it seems like the reaction is what you guys are expecting, which is coming from DOL. Even if NIOSH informed DOL that we have new information, it doesn't mean that DOL is going to put a case on hold.

MR. KATZ: Yes, Jenny. I really don't think there's any matter here really. I

mean, the only issue is the programs issue, and it is how much time it will take before they reduce this periodicity if they have a backlog from six months to whatever it ends up being in a, you know, steady state. But I don't think there's really anything else to discuss here. I mean, it's just --

MS. LIN: No, I don't believe so either. And reducing the backlog, that's management's goal. And so I think NIOSH is working on that.

MR. CALHOUN: Yes. And, actually, I'd rather hear, it's really awesome to hear that you've got a process in place like that that goes back and deals with issues, you know. It's a really good thing that we've got going here.

MEMBER MUNN: This is Wanda. I have to point out that this issue of whether, how claimants react when their cases are reviewed afterward and changes are made was something that we spent a great deal of time

on five years ago. We spent a great deal of time on this, and the Board, as a whole, did everything that was humanly possible to make sure that claimants could be as aware as they could be made aware of the fact that their cases might be reviewed and their PoC might change. And we revised the way we said things, the way we communicated with people to try to make sure that at least the truth was known by the claimant at the outset, that if their claim was reviewed it was possible that their PoC could get smaller because there was more precise calculation being made.

MR. KATZ: Right. But, Wanda, this is actually a completely separate case. That is, there we're talking about new cancers being added and so on and an efficiency process. This is a case where they don't notify DOL if it's not going to have a positive impact on the dose reconstruction, so the claimant wouldn't even need to be notified unless this is going to affect the case.

MEMBER MUNN: Yes, I understand that this is a different procedure. What I'm trying to get across, the point that was brought up a few minutes ago, which is is this the same thing that we've done before? I'm trying to say, no, this is not the same thing that we've addressed before.

MR. KATZ: Right, exactly.

MR. FARVER: If it were me and I've got new information in to a case that I've recently completed and sent on to DOL, I would, at the very least, just fire off a memo saying we've received new information and have not yet had time to evaluate it, and they can do with what they want because they might have something ready to send out that day that they might want to wait on, but it would just be a courtesy. It's not, that's so we don't send things out unnecessarily because you don't know what the data says until you look at it.

MEMBER RICHARDSON: That would be -- I propose we move this --

CHAIRMAN KOTELCHUCK: Move on, yes. Let's move on.

MR. FARVER: So how do you want me to write that up?

MR. CALHOUN: NIOSH is doing a great job with the plan in place.

MS. LIN: I happen to concur.

MR. FARVER: Okay. I'll make something up then that's more realistic.

CHAIRMAN KOTELCHUCK: NIOSH has a system which consists of --

MEMBER RICHARDSON: Yes, you could say NIOSH currently makes decisions based on the information at hand.

MR. FARVER: Okay.

MEMBER CLAWSON: But I'd also like to capture that NIOSH does have a process that when new information is going in that they are, they are adding this because that's, that has been a big battle for a lot of years, and they've taken to heart what we have said and they are, they're--

CHAIRMAN KOTELCHUCK: Okay. So be it.

MEMBER RICHARDSON: Are we on 276.1?

CHAIRMAN KOTELCHUCK: Do go ahead.

MR. FARVER: Okay. Let me see the next one. 276.1 and 276.2.

CHAIRMAN KOTELCHUCK: We just finished, we finished 257.1.

MR. FARVER: Right. And the next one I had was 276.

CHAIRMAN KOTELCHUCK: I see 257. 276, right.

MR. FARVER: Point one and two.

CHAIRMAN KOTELCHUCK: Yes, okay. Sorry.

MR. FARVER: And then we move on down to 277.1. This is about a --

MR. SIEBERT: This is Scott. Did we skip 276 or --

MEMBER RICHARDSON: Is there a NIOSH response to that?

CHAIRMAN KOTELCHUCK: There is.

MEMBER RICHARDSON: Where?

MR. SIEBERT: Yes, we have a response for point one and point two.

CHAIRMAN KOTELCHUCK: Yes, absolutely.

MR. FARVER: Where? Oh, sorry.

CHAIRMAN KOTELCHUCK: Good.

MR. FARVER: Okay. 276.1. I thought I copied that in there.

CHAIRMAN KOTELCHUCK: Inappropriate assignment of neutron energy for those years.

MR. FARVER: Oh, yes, this had to go with the tools and the action was to review and compare and report back, and they compared the EDCW tool and further discussion in a file.

MR. CALHOUN: Is this 276.1?

CHAIRMAN KOTELCHUCK: Yes.

MR. FARVER: Yes, 276.1.

MR. SIEBERT: It's point one and

point two. It's the same issue. The question at the last meeting, we already agreed on the first portion that the dose reconstruction report table was incorrect. It didn't have the right breakdown of energies and DCFs and so on. So what was outstanding for this meeting was SC&A had said they couldn't find the spreadsheet that we used for dose calculations. And when I went back into it, actually, it was in the EDCW tool that they had. It just, it's buried so deeply in there, it's not surprising they couldn't necessarily tease it out.

So what we did was we wrote up this additional response that, for simplicity, we gave you what the table, and this is the additional file that's called "SCA 276.1 and .2 NIOSH Response May 2013." At the top, we gave an update as to what the table should have looked like based on the years and the facilities that were actually used in the dose reconstruction. The rest of the writeup is

pointing out exactly where in the EDCW best estimate tool each of the cells, the pieces, parts are, where the dose reconstruction for neutrons is calculated.

Once again, this is Monte Carlo calculation, so it's not going to match up exactly. But if you do the hand calculation, you're going to get in the ballpark.

SC&A's initial report, they did an example calculation for 1976. So after pointing out where the specific pieces are in the EDCW tool, we also did the same example for 1976 and compared it.

MR. FARVER: Okay. And this is one of the files I didn't have a chance to review last night, so the action is going to be SC&A to review. And this is for 276.1 and 276.2.

MR. KATZ: Okay.

CHAIRMAN KOTELCHUCK: Okay. So going on.

MR. FARVER: Going on. I think

it's 277.1.

CHAIRMAN KOTELCHUCK: Sorry. I'm just diddling with this because -- there we go.

MR. FARVER: And --

CHAIRMAN KOTELCHUCK: What was the number --

MR. FARVER: 277.1.

CHAIRMAN KOTELCHUCK: Okay, thank you.

MEMBER CLAWSON: I think this is the same issue we had earlier.

MR. FARVER: It sure does look like it, doesn't it?

MR. SIEBERT: And we discussed this type of issue and closed some out at the last meeting. This one, I don't know why we didn't close this one out. This is specifically that the less than 30 keV DCFs in IG-1, there are also separate less than 30 keV DCFs when you're talking about plutonium and plutonium facilities. And we clarified that

we did update the template to specify that information, now that it's clearly pulled out. And we're going to be putting it in the TBD so it's clear that the less than 30 keV photon DCFs for plutonium are actually the 20 keV DCFs. So this winds up with the same finding in 280.2, which we actually did close.

MR. FARVER: So you're basically just going to update the TBD?

MR. SIEBERT: Yes. The Savannah River TBD is presently being updated, so the TBD author has that on his plate to add in there. But as I said, the template already has it instituted in it, so it's clearly being defined the difference between them in each case that uses them.

MR. FARVER: Okay.

CHAIRMAN KOTELCHUCK: Sounds good.

MR. FARVER: I'm good with it.

CHAIRMAN KOTELCHUCK: So let's go on.

MR. FARVER: 302. 302.1. Why

does this look familiar? Is this the same one, Scott?

MR. SIEBERT: It's not the same thing, but it's familiar because we have discussed it before.

MR. FARVER: Okay.

MR. SIEBERT: This is the one where the TBD has the specific 25/75 percent split, which is, it's a discussion of the metal filtration on the SRS dosimeter. We've discussed this many times and determined that the way we are assessing it is correct. It's just the TBD hasn't caught up to documenting that as it is in TIB-6. And we've responded in saying, once again, we're updating the TBD to reflect that.

We actually had the same issue back in grouping A of 10 through 13, and we closed it on 6/6/12. As I said, this is really nice having these transcripts. So we've already closed this for comparable cases in grouping A. We've just got to get the TBD

updated to reflect it.

MR. FARVER: Okay.

MEMBER CLAWSON: So this is another tool?

MR. FARVER: No, this is an inconsistency between a TIB-6 and a Savannah River technical basis. It's not that they're doing it wrong. It just says one thing one place and another place something else.

CHAIRMAN KOTELCHUCK: And which is it?

MR. SIEBERT: TIB-6 is the more recent document that controls this, and what we need to do is back-correct the TBD to reflect that, as well, so there's no inconsistency.

CHAIRMAN KOTELCHUCK: Good.

MR. SIEBERT: And that is exactly what we're doing with the Savannah River TBD.

CHAIRMAN KOTELCHUCK: Got it. Okay.

MR. FARVER: Okay.

CHAIRMAN KOTELCHUCK: Shall we continue? 302.2?

MR. FARVER: 302.2, is that the same?

MR. SIEBERT: It is.

CHAIRMAN KOTELCHUCK: Yes, same. I got 329.1.

MR. FARVER: Right away, we have some progress, and now you're pushing me. Okay.

CHAIRMAN KOTELCHUCK: Page 20. Well, I find out that I'm leaving the same time as you. I was, my memory failed me. I have a 6:00, as well, although that doesn't really enter into this.

MR. FARVER: Okay. Failed to assign unmonitored photon dose for two years. It looks like it's a judgment call.

CHAIRMAN KOTELCHUCK: NIOSH responded in May. It's not routinely monitored.

MR. FARVER: I'm going to punt on

this one because I haven't had a chance to look at this one.

CHAIRMAN KOTELCHUCK: Okay.

MR. FARVER: Some of these I can look at and pretty much tell. In others, they're going to take some time.

CHAIRMAN KOTELCHUCK: Do you have a colleague on the phone, though? Or would you like us to go on?

MR. FARVER: Oh, no, it's just going to take some looking into the files and some digging on this one.

CHAIRMAN KOTELCHUCK: Okay.

MR. FARVER: So SC&A will --

CHAIRMAN KOTELCHUCK: This is left open, and SC&A will--

MR. FARVER: Yes.

CHAIRMAN KOTELCHUCK: SC&A will look at the NIOSH response of 3/25/2013, right?

MR. FARVER: Yes.

CHAIRMAN KOTELCHUCK: Okay. The

next one --

MR. SIEBERT: Doug, if you want me to cover the next one, it's the X-rays pre-employment, if you want me to.

MR. FARVER: Sure.

CHAIRMAN KOTELCHUCK: Yes, and we've seen this. Yes.

MR. SIEBERT: Okay. Yes, we had an extensive discussion on this last meeting. And what it came down to is there were pre-employment and actually post-employment X-rays that some of the pre-employment were included and some were not. And the question was why were they and why were they not and what time frame should we include them? We landed on that it's presently a year prior to employment, unless there's additional information. And the question was should it be added into Procedure 61, and I remember this one clearly because about two minutes after we finished up with this response I found it in 61 that it's already in there.

So Procedure 61, and I pulled a quote out of it, the general philosophy for a best-estimate approach is to assign dose from all eligible X-ray procedures under the EEOICPA for each site where the energy employee worked. However, some X-rays should be excluded from best estimate. For example, pre-hire and re-hire procedures more than one year before DOL verified employment should not be included. And then it goes on to say if there's additional extenuating records that show that they probably should be, then you can go up to two years.

So that process is already documented in Procedure 61. We looked at this one a little bit, I looked at it a little bit closer, and there was a pre-employment that was only seven months before employment in 1954, which was less than one year. So we agreed that one should have been included, there was also another pre-employment the week before he started in `55. So we should have

included two pre-employments, one in `54 and one in `55. But we all agree that the 1996, if I remember correctly, should not have been included and was not.

CHAIRMAN KOTELCHUCK: Yes, I remember that, too.

MR. FARVER: I think we knew that or very much thought it was included somewhere, but we just couldn't find it at the last minute.

MR. SIEBERT: Right. We just couldn't put our finger on it. And as I said, about two minutes later, I found it and I didn't want to interrupt.

MR. FARVER: Okay. So we can close that finding.

CHAIRMAN KOTELCHUCK: Alright.

MR. FARVER: Good. And then the next would be --

CHAIRMAN KOTELCHUCK: Didn't we, did we, oh, we didn't skip one. You just said we'll come back to it at a later time in the

future.

MR. FARVER: 329.1 is where --

CHAIRMAN KOTELCHUCK: Yes, 329.1 is deferred.

MR. FARVER: Yes, I will have to evaluate it and I'll get back to you at the next meeting.

MR. KATZ: So let me, before you go on, it's 4:30. And, Dave, you want to be out of here --

CHAIRMAN KOTELCHUCK: Right. At a quarter of five --

MR. KATZ: And we ought to, briefly at least, touch on issues of scheduling and the mode of meeting the next time, too.

CHAIRMAN KOTELCHUCK: Right.

MR. KATZ: So do you want to at least cover that now?

CHAIRMAN KOTELCHUCK: I think that's a very good idea.

MR. KATZ: We already lost John.

John had to sign off. He sent me an email.

CHAIRMAN KOTELCHUCK: Oh, okay. Alright.

MR. KATZ: And I don't think Mark is with us still. So we can't, we can't schedule exactly until, I'll have to get their input before we can settle on a date, but we can check with a few of us and Wanda on the line as to what a possible date is. And I want to raise, given we've had this experience now today with half the people involved being remote, what do the Members think about doing the next one, which would be easier to schedule by phone with the addition of Live Meeting, so you can all be looking at the same document, as opposed to doing it in person.

What are you feelings about that? Let's ask that first because that will affect also how soon we can schedule.

CHAIRMAN KOTELCHUCK: Yes. My feeling is the fact we have such a backlog that I feel like I'd like to meet more often.

To do that, I think we really should go to conference calls, if we can or if it's acceptable.

MEMBER CLAWSON: I'm willing to give it a try to see how it works out.

CHAIRMAN KOTELCHUCK: Okay.

MR. KATZ: Dave? David?

MEMBER RICHARDSON: I think, yes, I certainly think we should give it a try. I can imagine it working fairly well with, if it's not a phone conference call but a --

MR. KATZ: Phone plus Live Meeting?

MEMBER RICHARDSON: Phone plus Live Meeting so we can share documents.

MEMBER MUNN: This is Wanda, and I think I've made my feelings pretty clear about this already. But just for those of you who haven't heard me, I'm opposed to relying so heavily on what we call conference calls or, quote, Live Meeting, end quote, simply because one single mechanical disruption or electrical

disruption with anyone out in the boondocks creates an irreversible and immeasurable difficulty that simply can't be overcome. Having been on the receiving end of that, I'm here to tell you that it's not fun and it's extremely frustrating. You really can't be involved to your fullest and best extent, and I don't believe that you get the same kind of interaction amongst the, especially amongst the Board Members, that you get in a face-to-face discussion.

So I don't have any objection to doing that on occasion, but I do believe that such heavy-duty reliance on the assumption that all people with all equipment levels of expertise are going to be equally empowered when we're working with these things is a fallacious argument, and we've seen evidence of that in my own personal experience. So I would much prefer to see us do at least the bulk of, certainly, our Subcommittee work on a face-to-face basis.

CHAIRMAN KOTELCHUCK: For me, as someone new, my feeling is can we look at it as a temporary measure until we get farther along into our backlog? But the problem is I can't define right now how far along we would go, other than to say that, if we get interrupted from one of these calls or more than one, then we'll decide to agree with you that, hey, there's just, we just can't do it and we have to go back to face-to-face meetings.

But it's hard for me to see why we shouldn't try this now in the hopes that our experience will be better in the future than in the past. And in that regard, maybe Live Meeting, to the extent that it doesn't rely on each of our individual computers, might be --

MEMBER MUNN: Oh, but it does.

CHAIRMAN KOTELCHUCK: -- a better try.

MEMBER MUNN: Oh, but it does.

MR. KATZ: Well, it doesn't to the

same extent because, it doesn't to the same extent because if you're just in viewing mode, all you have to do is tie into Live Meeting and you can see everything and you don't have to worry about whether you're having problems with pulling up the right document yourself.

So, I mean, all in all, it makes for less computer problems than the current situation where every time we meet we have individuals who are having problems with their computer. Dave has today, but it's always someone or multiple people having trouble with their own computers.

MEMBER MUNN: Well, when I don't have my computer, when I have my government computer and it is operating, that doesn't change the fact that I still have to have a carrier that's up and running. And even though my carrier is up and running 99 percent of the time, it's that three-hour gap that they're down. For this six months happened to be the three-hour gap, as it was for me the

last time I tried this. Then it's just beyond frustrating.

But I can understand I'm fighting a losing battle. That's the way we're going to do it and that's the way we'll do it.

I would like to point out to David, however, Dave, our frequency, our ability to meet frequently is not necessarily delineated by just our simple schedules. It seems fairly obvious that the availability of staff, both for SC&A and for NIOSH, is the really limiting factor for us. So for us to simply say that we're going to take care of our backlog by meeting more often is a lofty goal, but I have some reservation about how successful we can be with that.

CHAIRMAN KOTELCHUCK: That is a well-taken point.

MR. KATZ: But we do have, we do have a lot of material that's ready to go, that was ready for today that we haven't gotten to. So in the short-term, we can make

progress by meeting sooner until at least we exhaust the stuff that's already been ponied up and it's just waiting for our attention.

CHAIRMAN KOTELCHUCK: Right, right.

MR. KATZ: So speaking of dates, if we're going to go for the next meeting as a teleconference Live Meeting meeting, then we can do it sooner than we would otherwise. The soonest we could do it because I need 30 days for a Federal Register notice for a Subcommittee to meet, so the soonest it could be would be the June 24th through 28th to pick up where we've left off here, that time frame. I don't know if that works with any of you.

MR. CALHOUN: I may be in Idaho. There's an INL workshop going on. I have not been tagged for that yet for sure, but I do a lot of those.

MR. KATZ: But you're a key staffer, so we can't book it for when you're not--

MR. CALHOUN: I'm trying to not be so key.

CHAIRMAN KOTELCHUCK: And the next week is July 4th.

MEMBER RICHARDSON: As a clarification, if we were doing this by phone, they have phones in Idaho.

MR. CALHOUN: Good point. It is. But I'm usually instructing. It's a workshop.

MEMBER RICHARDSON: For the whole week.

MR. CALHOUN: It's only three days.

MEMBER RICHARDSON: Okay.

MR. CALHOUN: And if we want to try to do it that week, I'll find out if I have officially been tagged. And if not, I'll get out of it.

MR. KATZ: Okay. Why don't you send us an email about that. I just want to just sort of at least pencil in the

possibilities right now. July 1st and 2nd, is that no good, that whole week no good for any --

MR. CALHOUN: I can do that.

MR. KATZ: So that's the beginning of that July 4th week.

CHAIRMAN KOTELCHUCK: July 1st and 2nd, I could do that. But, but let me ask you, Grady, if you do three days a week, three days the previous week --

MR. CALHOUN: It looks like the 27th and 28th --

CHAIRMAN KOTELCHUCK: Are the likely days --

MR. CALHOUN: -- are days that I won't, that I'll be here. For sure, Friday I'll be here.

MR. KATZ: There's travel time.

MR. CALHOUN: But I don't know if I'll have to travel on the 27th or not. I just the 24th, 25th, and 26th marked off right now. I can solidify that here.

CHAIRMAN KOTELCHUCK: Could folks do the 28th? Could any folks do the 28th, Friday?

MEMBER CLAWSON: I can do the 28th.

CHAIRMAN KOTELCHUCK: I can. That would be far better than the 1st or 2nd, certainly.

MR. KATZ: Okay. June 28th is one possibility. We're going to hear back from Grady on whether that is a real one or not. If we can't do that --

MEMBER RICHARDSON: How long are we scheduling this call for? All day?

MR. KATZ: So, basically, the day. We can make it, I mean, I've actually found that it's easier to be at home and on the computer and on the phone than it is to be here. I found it sort of more comfortable. So if we can do a day here, I think we could do a day there. But, of course, we have flexibility because it's by phone. If you

want to do it for less hours in a day, we can.

It actually, if we can't do it in this time frame, then we're pushed all the way into August, which is okay. And the first opportunities I have in August are August 7th through 9th.

MR. CALHOUN: I think sooner is better, as much as I hate to say it. I just think we need to knock these things out.

CHAIRMAN KOTELCHUCK: Yes. Me, too.

MR. KATZ: Oh, yes. I mean, I completely agree. But how is everybody August 7th through 9th, if we end up there?

CHAIRMAN KOTELCHUCK: Did you say August 7th --

MR. KATZ: Seven through nine.

CHAIRMAN KOTELCHUCK: I don't, I don't know. Yes --

MEMBER CLAWSON: I'm good with any of those dates in August there. I just need prior knowledge so that I can take off of

work.

MR. KATZ: Oh, absolutely.

MEMBER RICHARDSON: I think that's possible for me.

CHAIRMAN KOTELCHUCK: Oh, no, 7th through 9th would work. I'm sorry.

MR. KATZ: Okay. So we're going to hear back from Brady. Our preference is June 28th. And, Wanda, this is you, too, right? June 28th? Is that a possibility?

MEMBER MUNN: Very okay.

MR. CALHOUN: You don't need to hear from me. June 28th will be good.

MR. KATZ: Oh, it is good.

CHAIRMAN KOTELCHUCK: 24th through 27th --

MR. KATZ: Okay. Then why don't we just, let's say June 28th, unless we have a problem with Poston and/or Griffon. And if not, August 7th through 9th. The sooner the better; is that for you, David?

CHAIRMAN KOTELCHUCK: Yes, that's

fine.

MR. KATZ: Okay. So we'll follow back with everybody. I'll send out an email.

CHAIRMAN KOTELCHUCK: Okay.

MR. KATZ: And we need to wrap now because --

CHAIRMAN KOTELCHUCK: We certainly do.

MR. KATZ: -- your plane.

CHAIRMAN KOTELCHUCK: Right, right.

MR. KATZ: Okay. So thank you, everyone, on the phone. Much thanks.

(Whereupon, the foregoing matter was concluded at 4:41 p.m.)

1

2