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

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ADVISORY BOARD ON RADIATION AND
WORKER HEALTH

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SUBCOMMITTEE ON DOSE RECONSTRUCTION REVIEW

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MONDAY
MARCH 25, 2013

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

PRESENT:

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

ALSO PRESENT:

TED KATZ, Designated Federal Official
KATHY BEHLING, SC&A*
ELIZABETH BRACKETT, ORAU Team*
GRADY CALHOUN, DCAS
DOUG FARVER, SC&A
STU HINNEFELD, DCAS
JENNY LIN, HHS
JOHN MAURO, SC&A*
BETH ROLFES, DCAS*
SCOTT SIEBERT, ORAU Team*
MATTHEW SMITH, ORAU Team*
JOHN STIVER, SC&A

*Participating via telephone

C O N T E N T S

P-R-O-C-E-E-D-I-N-G-S

(8:58 a.m.)

MR. KATZ: This is the Advisory Board on Radiation and Worker Health, Dose Reconstruction Review Subcommittee. I'm going to get started. Let me just check on the phone. Do we have David and Brad?

MEMBER CLAWSON: This is Brad.

MR. KATZ: Brad, hey. David, are you on the line, too?

(No response.)

MR. KATZ: We can get started. Mark has to make a meeting that starts at 9:00, so we're going to miss him for a little bit. But let's just get started with roll call and go from there. We are discussing Savannah River, LANL --

CHAIRMAN GRIFFON: And the rest of the eighth and ninth still, right?

MR. KATZ: Eighth and ninth, but LANL and Rocky Flats was the third, and Rocky, so speak to conflict of interest with respect

to those three sites as well, for Board Members when we do roll call. Just Board Members. So let's get started with attendance.

(Roll call.)

MR. KATZ: So the agenda is posted, and, Mark, it's your meeting.

CHAIRMAN GRIFFON: Yes. And why don't I, because I have my phone call -- what's the first item? I'm sorry.

MR. KATZ: The first item, I think, is blind dose reconstruction.

CHAIRMAN GRIFFON: Blind dose reconstruction. Okay.

MR. CALHOUN: And that's just really going to be an update.

MR. KATZ: Yes, an update.

CHAIRMAN GRIFFON: And if NIOSH can give that update, and I'm going to slip out and do my phone call, and, David Kotelchuck, if you can act as Chair while I'm gone?

MEMBER KOTELCHUCK: Sure.

CHAIRMAN GRIFFON: All right. Thank you.

MR. KATZ: Okay, good.

MR. CALHOUN: Okay. This is Grady. Basically, we're still in the process of getting things done here. We only got five additional blind DRs done since our last assessment was written. However, we do -- we've got 18 actually assigned that are in the process of being completed.

One of the things that we're looking at that's giving us a little bit of difficulty as far as timeliness and getting our blinds done, is something that's affecting some of the Board Members here, too, and that's our ability to readily get the tools. You'd think it would be much easier than it is, but it's not. And the tools that ORAU uses, we're trying to get those, and it's not quite as easy as just saying give them to us. Sure, they're ours. But because of some computer issues between what they do and what our folks

tell us we're allowed to do is causing us some problems.

Just to give you a little bit of an idea, one of the things that we've emphasized here is we always wanted to make sure we had the latest tool. Okay? What ORAU does is they can go out and I think it's called like One Click or something like that and they click a button. It goes out to the internet, to their cache of tools, it finds the most current tool, sucks it into the system. We're not allowed to do that, for some reason.

So we're working on a process to try to get their -- I'll call it a hard copy, but just copies that we don't have to go out and get. But, additionally, there's some issues with the Monte Carlo-type programs. We used to use Crystal Ball. That's no longer allowed. Then they went to Vose, and I don't think that's allowed. And so now we use @Risk. So that's what we're trying to get together.

So, sure, we can come up with the same Probability of Causation or decision, I would say. But for us to actually come up with a closer Probability of Causation value, we really need to use the exact same tools that they're using.

But, anyway, we're in the process of that, and I promise we'll have more of them done next time and I'll have a full assessment written up. But that's where we are, and I believe you asked me for some of those tools a while back and that's the problem we're having. Wasn't it you?

MR. STIVER: Yes. This is John Stiver. Yes, back in November we had this conversation. That was one of the things we were concerned with was being able to access to the latest tools or at least the same set that was used.

MR. HINNEFELD: This is going to be far more complicated than we thought. And to be more specific about what the issue is, the

tools have applications written in a -- essentially, it's a little routine written in the tool, programming language, essentially. It's a Microsoft Office plugin. I think it's called Visual Studio or something, and they've written code in that application that pulls things. And that's what does the one click deployment. That is not a CDC-authorized software.

Now, the fact of the matter is, on the ORAU side, their authority to operate and their certificate of compliance allows them to make their own determinations about what software packages they can buy and be compliant. And they actually have a more secure system than CDC because everybody at ORAU is already on Windows 7, but not everybody in CDC is.

So CDC has not approved this particular software-writing or routine-writing software. And so it's okay on the ORAU side, but we don't have CDC-approved use over here.

So that's the issue. It affects the one click deployment. It may affect some other things.

And there may be even a further complication to run these things through CITGO. If and when we get them on our system so that we can run them at our desktops, it still may be an issue. It's not clear that everyone will run on CITGO, and that has to do with some libraries that are consulted. And while, you know, CITGO, since it is a CDC-wide configuration, you have to get CDC to agree to host those libraries, and it's unlikely that we're going to get that far. We're already -- we're in extended conversation with CDC about our databases and encrypting our databases, so we're not their favorite people already. They don't dislike us, but we're just a pain to them because we've got all this PII in our databases and they don't like that.

So it's probably, you know, once we get the tools on our desktops, we're just going to have to try to run them through CITGO

and see which ones run. And at that point, then we'll know what can be made available through CITGO. You know, we can, if it comes down to this, we could host somebody at our office from SC&A that wants to come and do some stuff. We can set up a workstation in the office where you'd be working on a desktop, and you could --

MR. KATZ: But you have problems in your own office, is what you were saying.

MR. HINNEFELD: Right now we do. So once we get them running in our office, they still might not run on CITGO.

MR. KATZ: So right now the option is to go to ORAU and work in their office?

MR. HINNEFELD: Well, we could conceivably do that.

MR. KATZ: That's conceivably a solution.

MR. HINNEFELD: We could conceivably do that, but what we're really trying to do is get it running at least on our desktops.

MR. KATZ: Right.

MR. HINNEFELD: And it could, and I would think ORAU would have a seat at the table.

MR. KATZ: Because SC&A is going to be doing blind dose reconstructions this year that have to get done this year. And if this looks like it's long in resolution, it might make sense to send someone to ORAU and sit in their office and do their --

MR. STIVER: Yes. This is John. That sounds like a very good idea.

MR. HINNEFELD: Okay. I'll address it with them. You guys have been there before, I think.

MR. KATZ: Yes, we've been there. And as long as you're willing to host --

MR. HINNEFELD: We'll bring it during baseball season, when the Reds are in town. You know, just arrange your schedule appropriately. Yes.

MR. FARVER: Make sure they're in

town.

MR. KATZ: But, anyway, I mean, you know, it's slightly expensive, but it's a solution for the interim because I think SC&A is going to be hard-put if they have to wait very long, given that --

MR. STIVER: We were going to try to do about five or six a year.

MR. KATZ: Well, five or six this year. Next year is a whole other story. But, anyway, we only have nine months left.

MR. HINNEFELD: Talking about six months if you're doing fiscal years.

MR. KATZ: No, calendar years. SC&A is calendar year. So let's work on that then, if you'll --

MR. HINNEFELD: Okay. The Reds schedule is online for when you want to schedule your travel. The schedule is online. I'm not joking. You know, you work all day and go to a baseball game at night.

MR. STIVER: In that case, I might

want to go, too.

MS. BEHLING: This is Kathy Behling. Does DCAS plan on issuing another blind report at some point in time?

MR. KATZ: Yes. So maybe, Kathy, you missed the beginning of this, but Grady was explaining that they have had these IT hitches which have delayed their progress, which is why they don't have as many cases done as they would like to have had, which is why they're not ready to give a full report yet.

MR. CALHOUN: I could have written up a report on just five, but I thought I'd wait until we get ten or so.

MR. KATZ: Right. So maybe the next meeting we'll actually have --

MS. BEHLING: Okay.

MR. HINNEFELD: We've taken one other thing, I think we did this, we had one case that came up that had just multiple skin cancers. You know, that was one of the ones

that pull. So for our guy to do, for our HP to do a real dose reconstruction and plug through this is just really -- you're really now, all of a sudden, investing a whole lot of time in this one. So I told Grady, look, it's okay to just make an arbitrary cutoff if you happen to pull a case that has more than three cancers, three primaries or two primaries or whatever number you want to pick. Just reject it and pull a replacement, because it's just too much time to invest in one case. We're trying to keep this moving and keep up with it, and it's turned into a lot -- with this tool business, it's turned into a lot.

MEMBER KOTELCHUCK: Well, that sounds like that's fine.

MEMBER CLAWSON: Jim, this is Brad. I've got a question. Help me understand this. Because of the security plans and everything else that CITGO has put on ours, our computers, we can't get these?

MR. HINNEFELD: No, the issue is,

it's a computer security issue. The tools utilize a software package that's a plugin to Outlook or part of Outlook -- or part of Office, not Outlook necessarily, part of Office. But that particular piece of that particular Microsoft product is not on CDC's approved software list. Now, probably the main reason why it is not is because CDC runs several different versions of Windows. Not all of CDC is on Windows 7. And so there is a security vulnerability with this particular plugin in earlier versions of Windows.

So for that reason, CDC is not going to approve the use of that software package on the CDC system, which is what we're on. So that's the reason why the tools, we can't get the tools on our desktop. The further issue -- go ahead.

MEMBER CLAWSON: So with ORAU and everyone, then what is it? Because they're using their own personal computers --

MR. HINNEFELD: No. It's because

their entire system is on Windows 7, and they are in a place where this is acceptable to them. And they have their own system for approving software, and that's allowed under their authority to operate.

MR. KATZ: Right. Brad, SC&A is in sort of a different situation than ORAU. ORAU had their whole computer system, in effect, approved by CDC for IT security, which it's sort of an extensive process of doing such a thing, but it allows them to sort of set up their home system in-house. And, in effect, they have their own containment, so they don't have to -- and there's control and security risks. Everyone else, including SC&A, including DCAS, they're all on a CDC-wide network, and so they have to abide by the rules of the CDC-wide network. And that network doesn't deal well with peculiarities like we have with this program. So that's sort of the issue. It's very big sort of --

MEMBER CLAWSON: Okay. I was

starting to wonder, because I thought they were supposed to be on a secure system, and I wasn't understanding how they were going without that.

MR. KATZ: Yes. So they actually have a very nice secure system, but it's just in-house.

MEMBER CLAWSON: Okay.

DR. MAURO: So this is John Mauro. Just an overarching question. I presume you are in a position, however, to check these dose reconstructions but not necessarily using their tools. So that when a DR does move through and the system and NIOSH signs off, you do have the ability to check those numbers?

MR. HINNEFELD: Yes.

DR. MAURO: Okay. So it's just the tools just allow you to go through a process that allows you to do what we're calling the blind DRs, and you've set that up in a way where you have no choice but to use exactly

the same tools as they're using?

MR. HINNEFELD: Well, there are two reasons to do that, you know. One is it's a lot quicker to use those tools if you're going to do this. And the second is that it makes, the tool makes multiple decisions, essentially, at once, and it's easier to make all those multiple decisions, you know, the choices correctly when you make them once, as opposed to going through and doing it manually and having to make the correct decision or the consistent decisions at every step. So it's an expedient thing, to a large extent; but it also provides for consistency of choices of, you know, of the decisions that are made in it. So it provides consistent decision-making.

MEMBER KOTELCHUCK: Okay. So should we go on now to sets eight and nine? So eight is, eight is the set of dose reconstruction cases, and then Bridgeport Brass, Harshaw, Huntington Site Profile reviews. So this is a

big one. So who starts? Who begins this discussion?

MR. CALHOUN: Well, I guess I can start a little bit here.

MEMBER KOTELCHUCK: Okay.

MR. CALHOUN: The first one, and, Scott, feel free to jump in on this --

MEMBER KOTELCHUCK: 149.1.

MR. CALHOUN: 149.1, I believe, is Bridgeport Brass, and what we have here, what I have written down on the final matrix here is that the updated TBD has been reviewed. It said not published and under DOE review. However, that was from last time, and right now it has been published. It was published in February, so I guess we believe that we've answered most of those questions, and I think that SC&A or the Work Group is going to look at that. And I believe we just got something out on Bridgeport Brass. I don't know if they looked at the actual, if they looked at the new one or not. I would imagine they would

have. I got an email on that on Friday.

MR. FARVER: I can give you the short answer. The short answer is they reviewed the TBD, and, for this finding, about the 95th percentile, apparently that's been corrected in the TBD, so we can close this finding.

MEMBER KOTELCHUCK: Okay, good. By the way, which committee looks at that for this Bridgeport Brass? Is that the Procedures?

MR. FARVER: No, we looked at it.

MEMBER KOTELCHUCK: Okay, all right.

MR. CALHOUN: So I guess the next, the remaining item is to review the report that was written and see how that comes out that you guys sent us Friday because I imagine there's more issues. I didn't look at it.

MR. FARVER: I don't remember. There's so many reports lying around.

MR. KATZ: John is on the line.

DR. MAURO: Yes. In the last

meeting, there were a number of, we discussed Bridgeport Brass. I think the big issues have been resolved, and I was also asked to, by Mark, to read it, which I did. And I certainly did not perform a detailed review, but there really was, the real important part was this business that we brought up previously that Harry Chmelynski reviewed. And I was asked, well, you know, take a look at it to see if there is anything in there where there's substantial changes that perhaps may warrant SC&A to take a closer look, similar to, by the way, we'll get to Huntington Pilot Plant in a little while. But is there anything about it, and I have to say my initial impression of reading through Bridgeport Brass is that we really don't need another full SC&A review. I think the issues that were raised originally and the way it was done by Harry in addressing some of these matters, you know, demonstrates that it certainly appears to us that -- and this is

really, unfortunately, this is just my opinion because I read it, I guess, Friday and read it cover to cover while we were trying to close out these other matters. And I, for one, feel that there's nothing in there that is a sea change. It's basically further development. They have 95th percentile values in there. It's a richer document, but it's not that there's something that has changed substantially, in my mind, from what was done previously. When I say previously, I mean that we did not previously review.

MR. KATZ: Right.

MEMBER KOTELCHUCK: Okay.

MR. CALHOUN: All right. The next one I have open is 149.3, and that's the same issue.

MR. FARVER: Same issue, same response. We can go ahead and close this. It has to do with the 95th percentile --

MEMBER KOTELCHUCK: Okay. So close that. Go to 149.4.

MR. FARVER: Transferred to the Procedures Subcommittee. Yes, we didn't have an action on that one. The next action is --

MEMBER KOTELCHUCK: Oh, yes, I see.

MR. FARVER: -- way down --

MEMBER KOTELCHUCK: You say only the highlighted ones?

MR. SIEBERT: 174.1. This is Scott.

MEMBER KOTELCHUCK: Okay, good.

DR. MAURO: Did you just jump to the ninth set?

MR. STIVER: No, John, we're still on the eighth.

DR. MAURO: You're still on the eighth at 179.1?

MR. KATZ: 174.1.

MR. HINNEFELD: I'm just making sure we closed 149.1 and 149.3, right?

MR. KATZ: Yes. And by the way, from this meeting forward, SC&A is keeping the matrices, just as a matter of record. So SC&A will send around the updated matrices after

the meeting.

MR. SIEBERT: This is Scott. I can cover this, if you'd like.

MR. CALHOUN: That would be great. I'm still paging down.

MEMBER MUNN: What page is it on, Scott?

MR. SIEBERT: 99 of 132.

MEMBER MUNN: Thank you.

MR. SIEBERT: For 174.1, we closed at the last meeting, but there was an additional step that the Subcommittee asked us to look at. This is the old Portsmouth claims where we had a best estimate that was done, and there was no dosimeter error workbook for Portsmouth at the time. They used the K-25 workbook which doubled the dose.

We had gone back at the last meeting and covered the fact that no other dose reconstruction, we went through all of them, none other was affected by this issue. And then the last outstanding question that I can

answer now was the present tool, how does it handle it, could this occur again?

Are we there? Sorry. I didn't mean to jump ahead.

MEMBER KOTELCHUCK: Sorry. I'm still trying to locate --

MR. SIEBERT: The highlighting is actually in the NIOSH column, as opposed to the resolution column.

MEMBER KOTELCHUCK: Okay. 174.1 --

DR. MAURO: Mine is on page 86. I don't know if you're looking at a different one.

MEMBER MUNN: On this latest one, it's on 99.

MEMBER KOTELCHUCK: Okay, good, good. Okay.

MR. SIEBERT: Okay. So what I was saying is the last thing we needed to cover was looking at what the present tool does to ensure that this could not occur again. And when we reviewed that, the present day best

estimate tool we used for Portsmouth claims has that information, the error calculation integrated in the tool itself already, so they don't have to use dose reconstructors, don't have to use a separate tool for the error calculation. So the bottom line is it couldn't occur again because the tool already covers it, and that's really the only point.

MR. FARVER: So there is a separate Portsmouth best estimate tool?

MR. SIEBERT: It uses the complex-wide best estimate tool, but now that includes the error calculation. It didn't used to.

MR. FARVER: Okay.

MEMBER KOTELCHUCK: All right. Funny thing is, this doesn't have any markings. That's why I was --

MR. KATZ: Do you have the latest version, David?

MEMBER KOTELCHUCK: Maybe I don't have the latest version.

MR. KATZ: Because there was a

version sent out in the morning and then a version sent out --

MEMBER KOTELCHUCK: That's right.

MR. KATZ: -- in the afternoon.

MEMBER KOTELCHUCK: Okay. Because that's why I was having trouble. I saw 174.1 and then I didn't see, I didn't see the markings on it. Let me try and go back. Meanwhile, so where do we go next? And I'll go get the right one.

MR. FARVER: I believe the next one we jump down to the attachment, attachment one about Bridgeport Brass.

MEMBER KOTELCHUCK: Okay. That is on one --

MR. CALHOUN: Twelve.

MEMBER KOTELCHUCK: Okay, good. So if you folks will begin discussion, I will try to get the updated version.

MR. FARVER: Well, for this one, the question Mark had was -- our answer is attached at the end of the matrix, and there

was a question about the table that has two 146s from the number of personnel studied in the final column and the maximum weighted exposure. They both were 146, and Mark said, well, that's unusual, could you go back and check that?

So we did, and, actually, the number of personnel studied should be eight instead of 146. And the maximum weighted exposure still remains 146. It really doesn't change the answer any, but it was an error in the table.

MEMBER KOTELCHUCK: Okay. Let's see. So it's that. So I haven't yet gotten attachment one. Okay.

MEMBER MUNN: And that's on page 129.

MEMBER KOTELCHUCK: Thank you. Okay.

MEMBER MUNN: So say that again, John.

MR. FARVER: There's a table down in

and over in the far right-hand column, the lower right, there was 146 for number of personnel and 146 for the exposure. And the top number of personnel should be eight.

MEMBER MUNN: It's supposed to be eight.

MR. FARVER: It was a typographical error.

MEMBER MUNN: Okay, okay.

MR. FARVER: And that was Mark's question. You know, it looks too coincidental to be true.

MEMBER MUNN: Yes, I remember when we were looking at that before, and it didn't make sense. Okay.

MR. CALHOUN: Is that in the current TBD?

MR. FARVER: I'm not sure where that came from.

DR. MAURO: The 146 tables? Yes, those are, where we did the work -- that was me, by the way. I made that mistake. We went

into the SRDB -- the issue has to do with back-extrapolating from 1960 data down to 1957, and there was an SRDB -- and NIOSH's position was, well, we think we could do that because the 1960 data actually has higher concentrations in the air. And so by back-extrapolating, we're claimant-favorable because there was more data in 1960 than '57.

What I did originally was go back and look at the SRDB and convince myself that, yes, the 1960 air sampling data is higher. And that table comes out of that SRDB. However, when I made the table, I made a typo, and I put the 146 in twice. It should have been eight.

MEMBER MUNN: So the question is how is it corrected?

DR. MAURO: It's corrected. However, in my opinion, our position is that this issue is resolved. Now, I still believe that NIOSH is correct that the 1960 data is richer; and, not only that, it is more

claimant-favorable, notwithstanding that typo. So it's just correcting the typo. SC&A's position, I believe, unless there's some other thoughts on this, is that our original position that back-extrapolation, in this case, works.

MEMBER MUNN: So we're going to correct the official copy of this report now so that it will no longer say 146.

MR. FARVER: Right.

MEMBER MUNN: It will say eight. And how are we going to know that happened?

MR. FARVER: When you get the final matrix, you know, that I'll send out after this meeting, it will have strikethrough for the 146, it will have the eight, and then it will have a little note that it was corrected on such and such a date.

MEMBER MUNN: Super. All right.

MEMBER KOTELCHUCK: Okay. So do we go to attachment one, finding three?

MR. FARVER: John, do you want to

talk about finding three?

DR. MAURO: Yes. In reviewing this issue, the bottom line is that I think we still have an issue, but it might be something you would consider overarching. It has to do with beta exposure. Let me just make sure. Yes.

The Bridgeport Brass -- we're talking Bridgeport Brass. I believe we are. Yes, attachment one. And the issue has to do with skin exposures, and there is a very nice guidance provided on how to do it, and it's all based on film badges. However, one of the things that we've raised before, and this might be best suited as an overarching issue, is, in this particular case, I believe there was a very real possibility for skin exposure and contamination, such that it would be advisable to include that. That is direct deposition not just from the film badge but from direct deposition, on how to go about doing that. And I don't think we've ever

resolved that issue. If you have particles being generated, large amounts of particles being generated, and falling on a person's face or neck, what do you do with that? And I think that's been a longstanding question we've raised, and I'm not sure if that has been dealt with.

MR. KATZ: John, I think that has been resolved. I could be wrong, but I think the discussion has always ended from Neton that this gets, is only addressable on a case-by-case basis, so there's not an overarching approach to it, other than the determination that you have to consider the individual case and the circumstances. I think that's where that issue stands.

MR. CALHOUN: There's also another, there's also another way that we look at this, and this is Grady. If we have evidence that there is a significant issue with hot particles or whatnot, we actually write that into the TBD. And we've done that with, I

believe, Hanford site and maybe INL as well, during certain eras. But unless we have some kind of indication that there was a significant problem or we have a documented skin contamination, we just go by the badge readings and any geometric correction factors that might be associated with that site.

MEMBER MUNN: Yes, there are too many variables.

DR. MAURO: Let me ask now, this case by case, and I understand what you're saying and I agree that that's certainly a good way to go and you make certain judgments on a particular case, is there any protocol, like using VARSKIN, or how do you do that? I know that when I look at it and I say, well, how would I do it, we went through a few exercises on our own to say, okay, what would the dose be underneath that little particle? And it's one thing to say you could deal with it on a case-by-case basis, but there's another matter. There's a lot of judgment

involved on how you're going to do that, and I don't believe there is any OTIB that says, okay, if and when you do that, you have a circumstance where you need to do that, how are you going to do it? I guess maybe I'm going beyond the issue here, but I think that is an important issue. I'm still uncertain on how you would do that.

MR. CALHOUN: In the past, where we have had documented skin contaminations, I know that we've used VARSKIN. Now, as far as a TIB, I don't know that off the top of my head. But when we do have a documented skin contamination and it's a skin cancer, obviously, in that area where the contamination occurred, we would use VARSKIN.

DR. MAURO: The ambiguity comes on two levels, and I'll be brief. One is: depending on what you assume is the size of the particle and its thickness will very much affect what the dose is underneath that particle to the skin. And the second, and I

have to say, this is something that's always been an enigma for me, is if the dose is only -- so we're assuming that the skin cancer that the guy has, let's say on his ear, is because there was a particle, it might have been because a particle landed on his ear. So let's say, over the course of a day, before he went home and took a shower, let's say, he gets this dose, and the dose is only delivered there. How do you go from that to determine a Probability of Causation when the risk is -- let's say a skin cancer risk is usually based on a film badge reading where you're assuming the entire exposed body experienced that dose. This has always been one of these brain teasers, and I don't think it really has been aired out. How do you do this, and how do you relate that very localized dose that you might calculate using VARSKIN to converting that into a Probability of Causation?

MR. CALHOUN: It's still input into IREP the same way. Now, what we would do, and

you mentioned the whole-body dose. Sure, if we've got a whole-body beta dose, for example, listed on a badge, and we don't have any skin contaminations to go by, we'll just plug that in. But by the same, you know -- let's just say we've got skin cancer on the back. The dose that we will assign for medical X-rays, for example, is going to be different on the back for a PA exam than it would be on the calf, for example.

So we've always taken into account the location of the skin cancer and plugged it into IREP. So if we have a localized dose calculated with VARSKIN, we still have a beta dose, we still know the energy of the betas, and we plug that in. If it's a whole-body dose with a badge measurement, we plug that in as well.

DR. MAURO: Oh, okay. So if you get a localized dose that's fairly high to the ear over a relatively short period of time because of this particle, are you saying that you'll

assign that dose to the whole body?

MR. CALHOUN: We assign that dose to the cancer. It's just the cancer model that we plug in. You know, the skin cancer models, we're calculating the highest dose to that area.

MR. FARVER: John, I just read into this, reviewing a Hanford case. Now, the Hanford TBD has some guidance for how to handle particles. I guess for certain time periods certain particles fell, and they could determine what the dose rate was of a particle in rads per hour, and the mean residence time. So based on that, you can get a localized dose. And then you go back to OTIB-17, shallow dose, and you would take that and you would spread it out over the 18,500 square centimeters of skin.

DR. MAURO: Oh, so you spread it out. You're answering my question. So there is a protocol that takes into consideration that it's really not the whole body, you've

got to adjust for that.

MR. FARVER: Yes.

DR. MAURO: Oh, very good. I got you. I'll tell you the truth, that protocol, which obviously was developed and implemented at least in the Hanford site, would certainly be something that would serve the program well and the process whereby -- under what circumstances you make that decision that, yes, we do have particle problems; and, two, when you do have particle problems, what was just described to us by Doug as being the way in which you do it.

I understand why you would do that. And it would be good to memorialize that.

MR. FARVER: Is that something that you would like to see added to the Bridgeport?

DR. MAURO: No, no, I'm sorry. No. It sounds like it's something that is -- here's where we have a disagreement. It sounds like on Bridgeport the judgment has to be made, and we don't know if this judgment

was made or not, that particles are a problem. Clearly, in the current version, and I read the current version, there's no mention that particles might have been a problem. So I guess that's step one. Some judgment needs to be made whether or not, do we have circumstances here that warrant that consideration, and, you know, in my opinion, it does.

The second part, of course, is, once you decide that, yes, we do have that, the protocol you would use does not necessarily need to be in Bridgeport, but it should be someplace so that, the protocol that you do use when you trigger this scenario, there is some standardized guidance for how you go about doing that.

MR. FARVER: Well, it is pretty much standardized in OTIB-17.

DR. MAURO: The particle part?

MR. FARVER: Yes.

DR. MAURO: Oh, then --

MR. FARVER: The specifics are contained in, like the Hanford TBD has, you know, the nuclides, the dose rates, the mean residence time for the particles.

DR. MAURO: Okay, yes.

MR. FARVER: That's why I said: is that something that you think should be considered for Bridgeport?

DR. MAURO: No. For Bridgeport, the only thing I'd consider is they probably should have a statement in Bridgeport whether or not, given the nature of the work, whether or not that is an issue, and right now it's silent on that matter. I guess that's the only thing I would suggest. Now that we're having this conversation, that issue did come up, and that's the reason why we have the language we're looking at. It looks like that might very well have been an issue at Bridgeport.

MR. HINNEFELD: So I've got some history here, so if I can comment a little

bit. If I'm not mistaken, this has come up at uranium plants like Bridgeport, some of the AWEs, probably the DOE sites that were the DOE uranium plants for a long time, the Oak Ridge plants and Fernald, where there was no monitoring. There was no contamination monitoring before the guys left. You know, they took a shower, and they went home. And so they worked in coveralls. They didn't work, you know, all dressed out in anti-contamination clothing. And given the nature of what was done at Fernald, it's not unlikely that people got uranium on their skin during the workday, on some parts of their skin.

So this is where that came up. It came up in a uranium context where, as opposed to Hanford where it's highly likely you're going to have particles, hot particles -- uranium particles aren't that hot. You know, they're not really hot the way spent fuel is. So it's a different kind of question than what we normally call a hot particle. You

know, this is just contamination that gets on the skin during the work day and how you deal with that.

And so it's been talked about a little bit, but I don't know we've ever resolved it, except maybe at one place. I think John mentioned one time that there was an approach taken at Bethlehem Steel that might be instructive for these kinds of plants in general, having to do with, you know, what's a reasonable amount of contamination in a reasonable time?

You know, the problem with inventing contamination, too, what we're doing here is we don't have any evidence that these people were contaminated. It's just reasonable to figure that some of them probably had uranium on their skin, but we don't have any evidence of it. There was no survey done.

So once you start deciding, well, they were contaminated, then the question becomes, well, how contaminated do you want to

imagine that they were and how long a time do you want to imagine that they were contaminated? You know, where do you stop? Once you start, essentially, assuming it, where do you stop?

So it's kind of a tricky path to go down, unless you, essentially as a policy matter, decide this is how we're going to deal with it. I don't know that there's a scientific explanation. You know, there's no scientific answer because you don't have any data.

DR. MAURO: A couple of ideas, though. I think that -- first of all, I agree completely with you. Uranium is going to deliver a relatively low dose, a hot particle of some very high specific activity material. That would be at Hanford. I would say that, if you had a site where it was at one of these AWE sites, they were machining uranium, a lot of airborne particles, and there's a guy that comes down with cancer on the face, neck,

skin, ears, where we know that it's a very good possibility it could have -- that would trigger it. In other words, yes, I think we've got a circumstance where it's possible that that cancer might have been caused by some localized dose. We need to at least look into it, and right now I think that there really is no protocol for looking into that. And you're completely correct. It would be uranium handling in the early years where there was, let's say, a lot of airborne particles and you didn't really know whether or not the guy was walking away with any surface contamination.

MEMBER KOTELCHUCK: Okay. Dr. Poston?

MEMBER POSTON: I have a question or a statement, just to clarify. Has the computer code been modified to take into account surface contamination as opposed to hot particles? That's a question I don't -- the original program was written only for hot

particles. It's not written for contamination.

MR. HINNEFELD: You're talking VARSKIN?

MEMBER POSTON: Yes, VARSKIN.

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

MEMBER POSTON: Well, the point is, if it hasn't been modified, you're misusing the code.

MR. HINNEFELD: Yes.

MEMBER POSTON: It's only written for hot particles.

DR. MAURO: Yes. John, this is John. When we were looking into this, we simply said, okay, let's assume some relatively small particle of uranium and other radionuclides, and we just came up with some arbitrary size, and we deposited it directly on the skin and ran it and see what type of doses you'd come up with. Well, it turns out with the high specific activity you got really

large doses to these localized areas, the basal cells under the particles. The uraniums are relatively low but certainly not insignificant.

So I was still looking at it as if it was a uranium particle, in other words, because of these flakes that are generated when they're grinding uranium. So I wasn't thinking of more like a fine dust, but, actually, that would be microscopic. But as a particle, it would settle out --

MEMBER POSTON: John, what size particle did you assume?

DR. MAURO: We actually were looking at things on the order of a millimeter, a few millimeters like that, so small flakes.

MEMBER POSTON: VARSKIN is in the microns.

DR. MAURO: Yes, we did not, we did not --

MEMBER POSTON: And so that's one of the problems. The other problem is: I don't

understand your statement about high specific activity. Uranium 238 has a four and a half billion year half-life so --

DR. MAURO: That's why I'm saying --

MEMBER POSTON: -- it's very low specific activity.

DR. MAURO: You know, and I agree, I'm agreeing with Stu that uranium is not like talking about a particle of a high specific activity-- so, yes, you're absolutely right, but the dose is still not, you know, if you're seeing relatively small or no doses on your film badge, and then you say, but let's assume for a minute that a flake may have fallen, a small flake during the grinding on a person's ear or neck, what kind of doses are we talking about to the basal cell underneath that particle? And they're not insignificant. Now, they're certainly nowhere near the doses you get from a high specific activity particle, but it's still something that needs to be talked about. It needs to be part of

the analysis.

MEMBER POSTON: Well, having been there and done that as a young man in 1957, I would think that you're stretching this tremendously to try to get a dose.

DR. MAURO: You know, and I'm fine with that. You might be right, I don't know that.

MEMBER POSTON: Let me finish.

MR. KATZ: John, let Dr. Poston finish, please.

DR. MAURO: I'm sorry.

MEMBER POSTON: We were required to wear coveralls. We were also supplied with underwear, socks, and everything to wear. And we were also required to take a full-body shower at the end of every shift, wash your hair, completely wash. And I think that, having a situation or making an estimate of having a person walk out of the facility with contamination, especially on easy-to-wash places like your ears and your face and so

forth, is really stretching it. I just don't see that.

DR. MAURO: In my own defense, I've been looking at AWE facilities which start in 1940s and go to early '50s, and the level of controls there were very minimal, and they were dirty. So, you know, I'm looking at the problem through a lens of very old AWE facilities that were machining uranium.

MEMBER KOTELCHUCK: I must say, if you're talking about the ear, the classic example is that people don't wash behind their ears always when they shower.

MR. STIVER: If you're in the shower, the water runs --

MEMBER KOTELCHUCK: Well, that's true. The water comes there whether you scrub or not. Okay. I was wondering, though, about whether you make distinctions about exposed versus unexposed skin. Suppose you're dealing with an alpha emitter. At one point, you said you'd divide by the total surface area of the

skin, but that's not where the -- well, the particles can go on your clothes, but they are more likely to accumulate and be dangerous if they are a local exposure to your face and to possibly your hands.

MR. FARVER: Right. That was the method that's in the OTIB on how to do, how to handle shallow doses, skin doses. That's the method that's already --

MEMBER KOTELCHUCK: Okay. And that is taken into account.

MR. FARVER: Yes.

MEMBER KOTELCHUCK: Yes, okay, all right.

MR. STIVER: This is John Stiver. I've got a question regarding the mechanics and the applicability of VARSKIN. Now, from what Dr. Poston said, they're assuming very small particles, so I would imagine self-absorption is pretty much non-existent in that situation, as opposed to larger uranium flakes, and also the dose rate per area of

contamination is going to be considerably lower.

I guess I'm not that familiar with VARSKIN, but does it have those values kind of hardwired into the code, like so many rads per hour per microcurie per square centimeter? Is that something that the user can actually adjust?

MR. SMITH: Can I make a VARSKIN comment? Yes, this is Matt Smith with ORAU Team.

MR. STIVER: Hey, Matt.

MR. SMITH: Versions 3, 4, and then they're also coming up with a Version 5 of VARSKIN right now, going back to the earlier question about particle versus contamination incident, in the versions that are on the street now you can define a disk type of source. So if it is a contamination incident and we have information from the contamination report regarding approximately how many square centimeters of the skin were affected, we can

adjust that source and assume a disk type of source.

Whether or not you can adjust the actual parameters or the specific activity, the answer is no. That kind of stuff is kind of hardwired into the library. But you can certainly do a lot of things now with VARSKIN that you couldn't do with the earlier versions with respect to even photon dose calculation, as well.

DR. MAURO: When we did our calculation using a small disk, the big question: was how thick was it? By the way, of course, the alpha doesn't contribute, but it's the beta. And our struggle was not so much the diameter, because what you're really doing is you're delivering the dose beneath that diameter. So whether it's small or large, you know, the dose doesn't change. But the thickness of the particle was our dilemma, the flake that was landing on the person's skin. So the very fact that we're having

this conversation tells me that it does need to be explored and maybe put to bed once and for all. But it's been lingering, especially as it applies to uranium.

MEMBER MUNN: Well, as a matter of perception, it appears to me that the reason we're having this discussion is because the rationale that was given at the beginning is always going to apply, i.e., you've got to look at each individual case. There's no way you can broad-brush this issue. There's just not going to be any way to do that.

DR. MAURO: Well, Wanda, would you agree that, at a minimum, the Site Profile should indicate whether or not this is or is not an issue at this site?

MEMBER MUNN: I have some reservations about that. In this particular case, perhaps --

DR. MAURO: For Bridgeport Brass.

MEMBER MUNN: -- perhaps so. We're talking about Bridgeport. This was a machine

shop. Perhaps a sentence is to be certainly considered for it. But without any specific information, I think you would have to have at least some kind of contamination information from some period. If not the operational period, certainly you need to get some kind of residual data to be able to make any kind of a statement of that sort. I can't remember what the report said from the residual period, but you have to have some data if you're going to make a statement like that, John. And --

DR. MAURO: Well, I guess I'm making a really simple statement. It was very early years. The level of controls were minimal, and they were generating airborne particles, flakes, due to the type of operations. And this is universal for early AWE machining, cutting facilities.

MEMBER MUNN: Yes, it pretty much is. I agree.

DR. MAURO: And that's as far as I go with it. And I'd say, well, when you have

that, and there's reason to believe that the person may not have been scanned before he left for the day and showered, you know, but maybe you would say, but when he goes home, he takes a shower, like everybody else. So maybe for an eight-hour period he could have had some size particle sitting where, you know, that caused the cancer.

The problem I always had is do we assume that the cancer, let's say it's on his ear, was due to the dose that was delivered there by that particle that landed there, which makes it a different way of approaching it than dividing by the whole skin area. You see, I'm having a lot of trouble with this issue. I don't know how I would do it. In my mind, you could say, well, listen, this guy got cancer on the ear. Certainly, more likely than not, it was because of the sun, but let's say but he did work in a place, like Bridgeport Brass, where it's very possible that, on one or more occasions, particles

could have landed on his skin, his face, his neck, his ears, delivering whatever localized dose is associated with those particles, whatever size you want to assume they are in thickness.

This has been a matter that I raised, but I have to tell you I don't have a solution. I'm not sure how you deal with it, and I don't think that, you know -- and you deal with it, I agree you have to deal with it on a case-by-case basis, but, you know, I don't think you're going to have very much information to allow you to do that. All you're going to be able to say is, yes, it looks like it could have happened. It was a scenario that very likely happened, at least on occasion, at a facility in those early days. And you have that, let's say there's general agreement, yes, I guess that could have happened and it may not have been that rare, what do you do with the guy that shows up with skin cancer on his face, neck, and

ears?

MEMBER MUNN: Yes, I'm pretty sure I understand your concern, and I think it's a concern for anyone who approaches the problem. It's just that we, there's an extreme danger in beginning to make up scenarios based on what could have happened without any basis in fact for what actually did happen. It's a pitfall that has been approached and fallen into on more than one occasion, and it's difficult, I think, for us, if not impossible, to decide where to draw the line when you get into a fantasy world. And fantasy world is only one thought away from unsubstantiated scenario. Even though we know what happened in some cases, we can't extrapolate what happens in some cases to what happens in all cases. And that just underscores, in my mind, the need for individual consideration of each case that comes along, not even on a site-wide basis, but --

MEMBER CLAWSON: This is Brad. I

want to speak to that because I've taken a look at this and I've looked at our whole process that we do. We're using the 95 percentile over here because we really don't know what went on with this, so we're going to use this. This is going to give them the best estimate here. We're talking about people that were in there that were machining this. You're going to have particles all over the place. And John, as he said, he was in there, and they did machine. They had coveralls and everything else like that. Let's take other plants, like Fernald and everything else like that. You're saying in a fantasy world where people could have happened. How about a reality world where they do get this uranium on them continuously?

MEMBER MUNN: Yes, we know --

MEMBER CLAWSON: This isn't a fantasy. These people did get that, and John made the comment, okay, well, I have to go shower and stuff like that. Well, I live in

that world right now. We're supposed to go shower after being in a contaminated area. Some still don't. I think I'm agreeing with what John is saying, and I see both sides, but I think this is something that is true.

I don't think that we can wide-brush this, but I also think that it's something that does need to be addressed, especially in the AWEs and the machining. This was a day-in and day-out occurrence, in my eyes.

MR. STIVER: Brad, this is John Stiver, if I could kind of weigh in on this. I've had this very same experience in my previous job, which was working with the atomic veterans and the whole issue of skin contamination from descending fallout that would deposit on unprotected areas. And while we realize that this was a real possibility based on the scenario of exposure, just analogous to what would happen in one of these machining mills where you obviously are generating dust, it's settling out, you know,

on the areas that are exposed, behind the ears, or on the neckline, any area that's not covered. So how do you then, knowing this could possibly have taken place but without data -- I think that's what Wanda was getting at about getting into the realm of fantasy, because you don't really know how to bound all these different parameters that you can use to model this dose, and so you find yourself trying to high-side every single one of them, you know, the effectiveness of showering, the length of time the material was on the skin, the particle size, all these different parameters. And you find yourself -- because you don't have any hard data, any way to actually bound these, you wind up in a situation where the doses become so high as to be compensable, so there's really, it's a matter of sufficient accuracy here.

So that's really what we're grappling with, I think. We have different tools to approach this, but without some sort

of way, based on, say, the CATI report, the workers' own experience and recollections, detailed knowledge of the process, how do you go about really bounding these values and defining them? And that's where this kind of becomes an overarching issue. And as Stu was saying before, I can agree with him that you get into a situation where you're going down a slippery slope, and how do you really decide where is the point where we've got something that's reasonable and claimant-favorable, as opposed to just completely, you know, highly claimant-favorable but not necessarily realistic?

MEMBER CLAWSON: So, John, what I hear you saying is then you can't do it.

MR. STIVER: I don't know if it's possible to do it, except on a case-by-case basis. That's the problem we're dealing with here.

MEMBER CLAWSON: And I believe that this is true that it has to be done on a case-

by-case scenario, but the thing is, you have these people that sat in front of lathes for hours on end, for years on end that this should be taken into consideration.

DR. MAURO: I've got an idea. You know how you deal with medical X-rays? You've got OTIB-0006 where, you know, over certain time periods you make certain assumptions, and it's a look-up table. And we all realize that it works. And whenever I see a DR report and they default to OTIB-0006, it's solved. It seems to me that, yes, we've got a circumstance here that, when a person is dealing with machining uranium, I believe that if we went through the calculation right now we would show that, if it's landing on any place but direct skin, the doses from the uranium flake, natural uranium flake is going to be negligible because of self-shielding from the clothing. I'm not sure, but you're going to get that.

But if it lands directly on the

skin, it may be a different circumstance. And if there's a generic calculation that can be performed, I'm saying when we decide that this scenario is real, and that's going to be a judgment call, whether Bridgeport Brass is real or not, because of the year and the kinds of controls that were used and the kinds of operation. Then there would be a generic calculation done that said we don't believe it's plausible that a localized dose could be very much higher than this, and the real question when you do that, by the way, is the thickness of the particle, not the area.

I think a run needs to be made at this because we keep running into it, and I'm not convinced that it's something that we should walk away from. And to say that we'll deal with it on a case-by-case basis, I understand why you're saying that. I've looked at, literally, 50 AWE cases, and you're not going to have any information except that did they do things there where particles were

generated or not? And that's going to be the end of it, and you're not going to know any more than that. All you're going to hope to say is, yes, they did do things where there's a very real possibility that there were airborne particles of uranium. It's always natural uranium because it's very early years. Very rarely was it recycled uranium or enriched uranium. And whenever I see a person that has cancer on the face or the skin, I always raise this as a question, as an issue that needs to be answered. And the answer always comes back, well, we'll deal with it on a case-by-case basis, and it's never dealt with. So I've got a problem with this.

MR. STIVER: John, this is exactly the same problem we dealt with at DTRA. In that case, we were dealing with fresh fallout, which is incredibly hot --

DR. MAURO: Oh, that's really nasty.

MR. STIVER: -- compared to the particles that we're dealing with here.

DR. MAURO: Yes.

MR. STIVER: But, yet, the problem was always defining -- and we looked at every one of these parameters, including an enhancement factor from perspiration causing this material to collect in areas like around the collar, so we actually have a factor two or three higher than what would just have been deposited directly on there. You had to take into account the effectiveness of showering, you know, the shop-specific parameters, all these things. And you can do that, but it's all a matter of assumed parameter distributions for a particular model. In our particular case, we were coming up with doses in the 500-600 R range, which, in that case, in that program, were compensable. So it became a matter of generating compensable dose as opposed to looking at the cancer itself.

So it was really kind of an inverse problem in a way, but I guess that's the thing we're dealing with here. It’s really how do

you go about it, even if it is on a case-by-case basis. What kind of tools and procedures and protocols do you use to approach the problem? And that's what we keep coming back to again and again.

DR. MAURO: And I think this is tractable. I think that sitting down and giving some thought to it, you probably can go through an exercise and come up with a single set of tables that will allow you to say, yes, at this site, it looked like it was something that could very well have occurred, like an early AWE facility with uranium, and here's a dose that may have given a person cancer in an exposed area. This is the protocol we're going to use to place a plausible upper bound on what this dose is and have that be part of the PoC.

MEMBER MUNN: I thought I heard that was being done already, not from tables, but that this kind of assessment was being made.

MR. KATZ: That's for hot particles

of a certain size at Hanford. So that's a different situation, and John is talking about uranium.

The only way to move this forward is: either DCAS has to decide they want to look at this and give an answer in writing as to why this is a "no, never mind" or here's why we think we can do something that takes this into account or whatever. I mean, there's no point really batting this around the table more. We're not getting, we're not going to get anywhere with that. So I would suggest that the first thing is for DCAS to just take this question on and give it its answer, whatever it wants to be, and then we can consider whether we want SC&A to review that, and whether they want to counter-propose or whatever, that's fine. But then they have to come up with a concrete counter-proposal because it doesn't make sense to just talk about this abstractly here without anyone running any numbers and seeing what --

MEMBER KOTELCHUCK: But the discussion was moving forward, do we try to resolve this? And I was also thinking, I remember when I first started on the Board I was impressed at the fact that so many skin cancers were compensated. That's, if I'm not mistaken, the major type of cancer that is dealt with by the Board and compensated. So we were moving, I think, toward having a committee, a report, a decision that we need to do something about this. So, I mean, if DCAS were to --

MR. HINNEFELD: We can come up with a position. I mean, Grady and I aren't ready to do it here today. We'll go back to the office, and we'll have some discussions about our approach on this.

DR. MAURO: Could I add one more dimension to this? Keep in mind that when you grant an SEC, skin cancers are not included. So here we have a circumstance where you can be granted an SEC and you feel that everything

is covered, but you know what? And then you do the dose reconstruction as best you can for the people who are not compensated, which, by the way, includes people with skin cancer. These people, you know, are being sort of left out in the cold. And I think, by having a protocol, you could put this one to bed.

MR. KATZ: Yes. I mean, I wouldn't, I really wouldn't take into account SEC matters. That's really an independent issue. So, I mean, I understand what you're saying, John, that it's important to people, but it's not, you know, I don't think that's necessary to take into account. We have a practical issue here, and DCAS can come up with its initial response, and then we'll get an SC&A review, and the Subcommittee can consider that, where that leaves us. I think it will be helpful to have also some hard numbers if someone comes up with an approach, too, as opposed to this sort of vague, these doses --

MEMBER KOTELCHUCK: Do others agree

with this? It makes sense to me.

MEMBER MUNN: Yes, it's appropriate, I think.

MEMBER KOTELCHUCK: Good, good. Yes, I'm just thinking that this committee is the appropriate one to deal with that.

MR. KATZ: Oh, sure.

MEMBER MUNN: Yes.

MEMBER KOTELCHUCK: Okay, good. Fine. Well, then that is resolved or we have a path to resolution.

MR. FARVER: We're going to give DCAS an action to look into this for the next meeting.

MEMBER MUNN: Right.

MEMBER KOTELCHUCK: Okay. Is that fair enough? Next meeting?

MR. HINNEFELD: When is the next meeting?

MR. KATZ: Probably in a couple of months, because we're still trying to clean up our backlog here.

MR. HINNEFELD: That's fair. We should be able to do that.

MEMBER KOTELCHUCK: Okay, that's fine. Good. I think that was fruitful. So let's go on to page 116.

MEMBER MUNN: Attachment two.

MEMBER KOTELCHUCK: Harshaw Chemical, attachment two, finding one.

MR. KATZ: And for the record, Mark is back with us.

MR. FARVER: We have attachment one, finding 5A.

MEMBER CLAWSON: This is Brad. What number was this?

MEMBER KOTELCHUCK: Harshaw Chemical, attachment two, finding one. And it's on page 116.

MR. FARVER: We have one finding before that.

MEMBER KOTELCHUCK: Oh, did I overlook one?

MR. FARVER: It's attachment one for

finding 5A. It's just before the Harshaw one.

MEMBER KOTELCHUCK: Okay.

MR. FARVER: That was not closed. I don't believe it was closed.

MEMBER KOTELCHUCK: Attachment one, 5A. Okay. So I'm still working on the old one.

MR. FARVER: And this is an easy one to deal with. This finding dealt with the residual period at the Adrian Plant. But since the Adrian Plant is now a DOE facility, the residual period is just a moot point. So that finding gets withdrawn and closed.

MEMBER KOTELCHUCK: Closed. Somehow, I did not get the updated one, Ted, but I'll get to it.

MR. KATZ: It was sent to your CDC address.

MEMBER KOTELCHUCK: No, no, I saw it. I'm on my CDC computer. I came back to the old one instead of -- now we'll go to page 116, attachment two, Harshaw Chemical.

MR. FARVER: And for these, I'm going to turn these over to John because these are AWE issues.

DR. MAURO: This is the Harshaw number one. Yes. We're recommending we close this item because I believe that they are, in fact, going to be using the 95th percentile. I think that was the issue. And that's, in fact, that solves that. That's all we were looking for.

MR. FARVER: And I believe one and two are pretty much the same finding with the same answer.

DR. MAURO: Yes.

MEMBER KOTELCHUCK: By the way, I don't know if anybody wants to correct it, but somewhere, in talking about it, they say "since the medium of a log normal distribution." Just for statisticians, we'll correct that somewhere.

MR. STIVER: I also saw a reference to Bridgewater Brass in there somewhere.

MEMBER KOTELCHUCK: Yes. Okay. But is this now resolved?

MR. FARVER: Yes. We propose closing finding one and two because they both deal with the same issue.

MEMBER KOTELCHUCK: Okay. Is that OK?--

DR. MAURO: By the way, Doug, I believe there was some text that went with this. In other words, right now it just says we recommend closing, but I believe that I prepared some material explaining why we've come to this place. And I don't have that in front of me. I know Mark very often likes to see the rationale.

MR. FARVER: Well, was that a paper that was sent out --

DR. MAURO: Yes, I put a memo together on this somewhere.

MR. FARVER: Did that get sent to everyone?

DR. MAURO: Yes --

MR. FARVER: Is that something Nancy distributed? Okay.

DR. MAURO: It may very well be in everyone's hands.

MR. FARVER: Okay. Because it's difficult to add huge paragraphs to the matrix.

DR. MAURO: No, I understand that, but I'm doing this really because I know Mark likes to see the rationale.

MR. KATZ: We should do, like, procedures. We should have a couple of sentences, a synopsis at least, just to put a rationale there, even if it, you know, even if it's very succinct and hard to decipher. We should have something there in substance.

MR. STIVER: Well, in this situation, it looks like it was selecting the median or 95th percentile. I know for Bridgeport there was a question of whether, it was the whole correlated versus uncorrelated data set for the coworker model and whether

the 95th percentile was appropriate. Are we getting those two things conflated here, John, or did you actually look at something --

DR. MAURO: I wrote something on this. I can go -- you know what? Right now, my recommendation that I passed on to the Work Group is that we close it, but I do recall preparing some written material that went with that. And, you know, let me run it down and make sure that I did, and then I'll make sure that everyone gets a copy of it.

MR. FARVER: I'll make a note to add some text here.

MR. KATZ: Yes. I was just saying, John, you can help with just a sentence or two text to synopsize --

MR. FARVER: He did write a report on it, but it's --

MR. KATZ: Right, right, I understand. That's what I'm saying, a couple of sentences.

MEMBER KOTELCHUCK: Okay. That

closes that, I think. What about now the next finding, number three, on 117? Where is that? Open for DR Subcommittee final determination on status. Mark, you're mentioned here so --

CHAIRMAN GRIFFON: In the update, I took my name out of it. Did you notice that?

MEMBER KOTELCHUCK: Right -- yes.

MR. KATZ: As we go forward with these, when we have a live system, you'll be able to add links right to the summary, so you'll have all of that information handy with each resolution.

MR. FARVER: And, actually, John and I have talked about do we want to reformat these matrices so they look --

MR. KATZ: They reflect that.

MR. FARVER: -- similar to what we're going to be using.

MR. KATZ: Which I think is a good idea, yes.

MR. FARVER: And we can go ahead and do that.

MEMBER KOTELCHUCK: So this one, this finding really deals with the question, the larger question of just surrogate data, period.

MR. FARVER: John, are you still there for finding three?

DR. MAURO: Yes, I'm looking at it right now.

MR. FARVER: Okay. This was the one we weren't going to close. We were going to close several of these other Harshaw because I believe Joe still had some concerns.

DR. MAURO: Oh, yes. This is the adjustment factors. Yes, I have a write-up on that. I just had to find out what this was about. Yes. If I got the right edition, you're talking about Joe Zlotnicki? Yes. I asked Joe, he's our specialist on film badges.

MR. SIEBERT: John?

DR. MAURO: Yes.

MR. SIEBERT: I'm sorry. I think you're talking about finding five, which would

be adjustment --

DR. MAURO: Oh, okay. Oh, okay, then --

MR. SIEBERT: This is Scott. I believe the latest is NIOSH and SC&A all agreed to a closure on this, but Mark wanted to review it further because it was a surrogate data issue. I believe that's the last thing I remember it being.

CHAIRMAN GRIFFON: And the question I have remains whether it was appropriate to Mallinckrodt. Was it similar enough to this to use Mallinckrodt data as surrogate data.

DR. MAURO: I have to admit I did not look at this, so I really can't help out here.

CHAIRMAN GRIFFON: And I would have to resurrect, but I'll defer to the other Committee Members, if they felt strongly that it was okay. I would defer at this point because I haven't looked at it in a while, but that was my initial concern.

MR. HINNEFELD: Does anyone know if this was a covered operational period question, as opposed to residual? I mean, Harshaw, didn't we add Harshaw SEC for its entire operational period?

MEMBER MUNN: I believe we did, didn't we?

MR. HINNEFELD: I know it's Harshaw SEC.

MR. KATZ: We can look that up quickly.

MR. HINNEFELD: I believe it's the entire operational period. So, I mean, if we don't do it in this fashion -- well, of course, it's almost irrelevant because lung cancers are all getting paid by the SEC anyway, unless it's less than 250 days. And Harshaw and Mallinckrodt were chemical companies that were the early uranium producers. I mean, they were the early, during the war, companies that --

MR. CALHOUN: August '42 through

November of '49 is SEC. I'd have to check and see what the covered period is now, though. I imagine, I don't know if it's a short --

MR. HINNEFELD: I don't know. We may start getting some data from Harshaw later on.

CHAIRMAN GRIFFON: And so do people recall the model that was proposed? Was it operational data to cover our residual period or --

MR. HINNEFELD: See, I don't recall, and I'm not even sure that '49 was the end of their operational period, now that we've found out the Class goes through `49.

MR. CALHOUN: The operational period is through '55.

MR. HINNEFELD: Okay. So at some point, we decided we could do it. Okay, so my argument goes away. I don't know. They are pretty similar.

CHAIRMAN GRIFFON: I'm sorry. So there's an SEC for only part of the time

period?

MR. HINNEFELD: Yes, only part of the operational period. From '50 through '54 or '55, whatever the ending is, it's operational. That would have been when HASL started, and, if they would have started paying attention, we would have got their data or bioassay data at that time.

CHAIRMAN GRIFFON: Right. Okay.

MEMBER KOTELCHUCK: How do we move to resolve this?

CHAIRMAN GRIFFON: I mean, I'll be honest with you, it's been so long that I don't recall exactly my, you know -- I think the question is this surrogate issue and whether they're similar enough. It seems like they were operating in the same time period, so that part of it meets the --

MR. HINNEFELD: It would seem like it, as long as the radon data is from that time period.

CHAIRMAN GRIFFON: Yes, right,

right.

MEMBER KOTELCHUCK: Since you raised it and it's certainly a legitimate issue, you'll give us some report on it?

MR. KATZ: It's for DCAS to take a look and see --

MEMBER KOTELCHUCK: Okay, good. All right, fine.

MR. HINNEFELD: The Board has adopted a set of criteria that should be met in order to use surrogate data, and so we would expect what we would provide then is our determination of this use based on those criteria, which may already be done; I don't know. But we'll see. It will be something like that.

MEMBER KOTELCHUCK: Okay, good. So that at least moves us towards resolution.

MR. KATZ: Right. So that's in progress, to use the nomenclature.

MEMBER KOTELCHUCK: Right. And then the very next one is the finding four on 118,

detailed guidance on the reconstruction of doses to extremities. Well, we discussed this, we have discussed this earlier, and we will have a report from DCAS at the next meeting. Okay, good.

MR. FARVER: And this is for finding four?

MEMBER KOTELCHUCK: Four, yes. Finding four.

MR. CALHOUN: Isn't this Harshaw versus Bridgeport?

MEMBER KOTELCHUCK: Yes, this is Harshaw. Okay. Finding five.

DR. MAURO: Do you want me to jump in? This is the one I started to describe before.

MEMBER KOTELCHUCK: Sure, sure.

DR. MAURO: NIOSH did respond. We were concerned that consideration was inappropriately given to adjustment factors for the film badge readings for beta exposure. NIOSH, in response, the large green write-up

said, you know, go take a look, this is well covered in OTIB-10. And so we did take a look at that, and it turns out OTIB-10 then refers you to some other OTIBs, and we looked at those.

And here's the issue, and I think it does still remain. The issue has to do with in the early years, and I'm giving you information now that was passed on to me by Joe Zlotnicki, who is very familiar with this subject, the use of film badges and why this is a special issue that transcends the guidance that you folks have.

And the way he explained it to me, and I believe we will have a written report which may have arrived. I don't know. By the way, Doug, did Joe submit a written report on this? Did you see anything come through over the weekend? It may have come in. If it did or didn't, you know, it's an 11th hour thing, but he did explain to me over the phone, I think it was on Friday, and he said he'll try

to write something up and send it in.

But let me tell you, conceptually, what the problem is. It has to do with the fact that, in the early years, there were a lot of problems with the readout that you get for beta from, I guess it would be called the open window part, in that they were always covered with, there was some type of cover, some type of bag that covered it. And not only that, in these dirty environments, not only that, they placed, they actually placed the film badge in some type of -- he referred to it as a baggy. And these would often, in these dirty environments, get very contaminated. Not contaminated. Dusty. And his experience is that, unless you calibrated the film badge under those circumstances, what will happen is you will significantly underestimate the dose because, in the real world, a lot of that beta is going to be shielded out, and you're going to get a relatively low reading on the film badge if

you did not calibrate under those circumstances.

MEMBER POSTON: You're talking about betas, not photons, right?

DR. MAURO: Yes, he was talking about betas in particular.

MEMBER POSTON: I want to make that clear.

DR. MAURO: Yes. Clearly, it had to do with adjustment factors for beta exposure. So the best I can do at this point in time is communicate that if, in fact, there's reason to believe that it was calibrated under those circumstances for that particular film badge, there's a good chance you could significantly underestimate the beta exposure.

So that's the best I can do in trying to say that we did look at 0010 and its supporting other material, and it was found that it really didn't get into this subject, which, in the early years, is especially important.

MR. HINNEFELD: Okay. John, help me out here. What we're saying or what you're saying is that the bag that was placed on the dosimeter to protect it from getting dusty would then attenuate the beta particles to the extent that you would have less recorded on the film badge than you should --

DR. MAURO: Correct, unless you calibrated it under those --

MR. HINNEFELD: -- unless you calibrated it with a bag on it?

DR. MAURO: You got it.

MR. HINNEFELD: Okay.

MR. CALHOUN: Potentially.

DR. MAURO: Potentially. That was the concern, yes. And that is not addressed in any of those OTIBs that are referred to here.

MR. CALHOUN: And that would be an issue for cancer to uncovered surfaces of body only.

MR. FARVER: We're going to provide

a written response or review of this issue. I know Joe provided one, but we want to get one officially out to everyone.

MEMBER KOTELCHUCK: Good, good. Okay. That would --

MR. FARVER: We'll do that before the next meeting.

MEMBER KOTELCHUCK: Excellent. Okay. Before the next meeting.

MR. KATZ: It sounds like you can do that very soon, if you've already written it out.

MR. FARVER: Yes.

MR. KATZ: So DCAS will have that report soon.

MEMBER POSTON: It would help to know the thickness of the bag, if there's any estimate.

MR. STIVER: You'd have to model the beta attenuation.

MEMBER CLAWSON: Oh, this is easy to do. You don't have to do any modeling. All you

need to know is the thickness of the bag.

MR. FARVER: I'd like to give Joe a chance to look at this again because it looks like, from what he wrote, it was just a pretty -- something in a hurry. I wanted to go back and look at it in more detail.

DR. MAURO: It was. I caught Joe just about as he was taking off to go on vacation. And so, yes, just give Joe a chance to -- give us a chance to put together something and get it in writing to you. But I think I gave you the essence of the problem.

MR. STIVER: John, I just looked at what Joe had sent out, and you pretty much paraphrased it exactly as he wrote it. He sent about a one-pager with the indication he's going to follow up with a more detailed response.

MEMBER KOTELCHUCK: Okay. Well, that sounds good. I was wondering. It's about 10:30. There are quite a few still to go. Even though we're on page 119 of 132,

there are still quite a few issues to discuss. Should we take a little break now? Would people like that? Okay, very good. Excellent. All right. So it's 10:30. Do we want to get back together at 10:40?

MR. KATZ: Yes, that sounds good. Just a ten-minute break.

MEMBER KOTELCHUCK: Okay. Ten-minute break. It's actually 12 minutes, and that's a compromise between 10 and 15.

(Whereupon, the above-entitled matter went off the record at 10:28 a.m. and resumed at 10:42 a.m.)

MR. KATZ: We're back. Let me just check online to see if we have Dr. Richardson. David, are you on there? And Brad Clawson?

MEMBER CLAWSON: Yes.

MR. KATZ: David, are you on? Maybe not.

MEMBER KOTELCHUCK: I was going to say he's going to that number six or hash six or whatever.

CHAIRMAN GRIFFON: Yes, attachment two, finding six; is that where we're at?

MEMBER KOTELCHUCK: No, we're actually, I think we're at seven.

CHAIRMAN GRIFFON: Seven. Six was done, so seven. And thanks, David.(THE CHAIR RETURNS TO CHAIRMAN GRIFFON)

MEMBER KOTELCHUCK: Sure, glad to.

CHAIRMAN GRIFFON: All right. So this is, it was in NIOSH's court, I believe.

MEMBER RICHARDSON: I'm back.

MR. KATZ: Thanks. Welcome back.

CHAIRMAN GRIFFON: So this is the Monday morning sampling. This is a familiar issue. Okay. And the last update I have was quite a while ago, but it was still in NIOSH's court the last time, as far as these notes go.

MR. SIEBERT: Hey, Mark, this is Scott. We do have a new response in there discussing the Monday morning sampling. And also, Liz Brackett is on the phone since she wrote this up, so if there's any questions on

that, I will defer to her.

MR. KATZ: Do you want to just summarize it?

CHAIRMAN GRIFFON: There's a new response in what? I don't see it in this matrix that I'm looking at. Do I not have the --

MR. KATZ: There was a morning and an afternoon matrix. They were both sent out. But the afternoon one --

CHAIRMAN GRIFFON: Okay. So I'm looking at the one I sent out, but there's been stuff added to this?

MR. KATZ: Yes, responses from DCAS.

CHAIRMAN GRIFFON: Oh, okay, all right.

MR. KATZ: So, Scott, why don't you synopsize that?

MR. SIEBERT: Synopsize.

MS. BRACKETT: Would you like me to do that?

MR. KATZ: Or Elizabeth, yes, sure.

CHAIRMAN GRIFFON: Yes. Go ahead, Liz.

MS. BRACKETT: Okay. The issue was that if you have a chronic intake but then a two-day break and then the sample is collected on a Monday morning, you underestimate what the intake would have been. But in looking at the data from Harshaw, if you have the response in front of you, you can see the breakdown. The samples weren't actually collected all on Mondays. There are more on Monday than other days of the week, in general, but they're pretty much spread throughout the week. Wednesdays have a substantial fraction of the same number of samples as Monday does.

So the way we kind of aggregate the data, we take, you know, on an annual basis, all the data are put together and we use those. So by using a combination of all of the data, there's not a substantial underestimation of the dose because when you

sample during the week, Tuesday through Saturday, you actually overestimate. If you sample in the morning, you're overestimating what the intake would have been. So it balances out when you collect the samples throughout the week.

MEMBER MUNN: It doesn't appear to be indicative of anything.

CHAIRMAN GRIFFON: And I think that last part of your explanation is useful, Liz, so it would balance out, even though there's still, like, two to one on Mondays. But if you're looking at the rest of the week, overall, it's going to balance out.

MS. BRACKETT: Right. Sunday you would also underestimate collecting then, since there was no intake on Saturday, but there's only 190 samples on Sunday. But then the rest of the days you'd be overestimating. So it would balance out.

CHAIRMAN GRIFFON: That seems -- any comments on that?

MEMBER MUNN: The mere fact that there are seven days there is impressive, I think.

CHAIRMAN GRIFFON: Yes, yes.

MEMBER MUNN: Saturday and Sunday samples, that's pretty impressive for that period.

CHAIRMAN GRIFFON: Any comment -- David, any comments on that?

MEMBER KOTELCHUCK: No.

CHAIRMAN GRIFFON: Or David Richardson?

MEMBER RICHARDSON: Yes. I'm struggling a little bit with being right on average versus being right. By balancing out, it means that you're right on average. It doesn't mean that your variance is right and you're claimant-favorable in all situations, or does it just mean that we don't know, so some of the people get overestimated and some get underestimated?

MS. BRACKETT: Well, this is not for

individuals, this is for the coworker study. For an individual, in most cases, well, the dose reconstructor doesn't necessarily use the Monday sample. If it's a missed dose, it would be whatever their last sample was. So it's going to vary. We have correction factors that we can apply for individuals. If the sample being used to calculate their dose happens to fall on a Monday, then we would apply the correction factor. But I guess I was looking at, I thought this was in regards to the coworker study. That's what I was specifically discussing.

CHAIRMAN GRIFFON: Yes, I think it is a focus on the coworker.

MEMBER RICHARDSON: Yes.

MS. BRACKETT: So we wouldn't be underestimating some people and overestimating others because we're applying the distribution. We're using all of the data to assess the distribution --

MEMBER RICHARDSON: There's a true

value, and there's an assigned value. I guess the question is: does the, I mean the answer is yes, the assigned value is in error, and I'm starting to think about what the error is. Does that make sense?

MS. BRACKETT: Well, I mean, the coworker study in general is an approximation anyway. It's not an exact value. So I'm not sure how we could compare. I did look at -- well, we have a document, and maybe it would be helpful if I put this together and sent it. But if we look at the intake retention fraction, assuming a constant chronic throughout 24 hours a day, and then what they are relative to assuming an intake five days a week just during the day. And if we weight -- if you do a weighted average looking at Type F relative to what the value would have been if it was actually uniform, then I came out with 94 percent. So there's a possibility we're six percent low for Type F with this distribution, as opposed to if a person were

actually exposed chronically over 24 hours versus what an actual exposure pattern would be.

That would be the maximum because, Types M and S, there's much less variation over time. So by the time you get to Type S, the Monday morning sample has little effect.

CHAIRMAN GRIFFON: You say you have that analysis, Liz? Is that something you can provide?-

MS. BRACKETT: Yes, I'll have to write it up. I was just asked about this a couple of days ago so --

CHAIRMAN GRIFFON: Oh, no, that's okay.

MS. BRACKETT: -- I put something quick together, but I would be able to write this up.

CHAIRMAN GRIFFON: I think it might be worthwhile just to have, so we have NIOSH's response and Liz will give us this additional information.

MR. HINNEFELD: I don't recall class F compounds at Harshaw, right? Liz, do you recall at Harshaw?

MS. BRACKETT: That's a good point. I was just --

MR. HINNEFELD: Yes, I know you looked at all three.

CHAIRMAN GRIFFON: Generally.

MR. HINNEFELD: But in your analysis, bear in mind that I don't think there were class F compounds at Harshaw.

CHAIRMAN GRIFFON: You're right. I was thinking of the general issue, too.

MS. BRACKETT: Right. Yes. So if there's no type F, then it would be even -- it would be less than that. But I can look at that, too.

CHAIRMAN GRIFFON: So I'll just leave that as an action for NIOSH to provide some follow-up data information on this, and then the Work Group will reconsider. Alright. Can somebody capture that? That's so it

remains in NIOSH -- yes, okay. I like that. Anyway, moving on. Attachment three, finding one. So we're on to, this is the Huntington Pilot Plant.

MEMBER MUNN: And there's a new response from NIOSH. You got it?

CHAIRMAN GRIFFON: I don't have it. What did I do with it? Okay. So this was a NIOSH follow-up?

DR. MAURO: This is John. Actually, I think it was an SC&A action item.

CHAIRMAN GRIFFON: Okay.

DR. MAURO: The way we left it off at the last meeting was we had, on our original review, it was one of these special reviews, we had 12 findings. And at that last Subcommittee meeting, NIOSH indicated, well, we believe we've addressed adequately all of the 12 issues in the revised version of the Huntington Pilot Plant. So it didn't really get into specifics, just said we think we're okay. So SC&A was given an action item to go

ahead and review the Huntington Pilot Plant and, you know, make a judgment on the degree to which each of these 12 items can be closed.

I prepared a report on this, which probably didn't show up. Doug, do you know whether this was distributed?

MR. FARVER: Yes, I got it.

DR. MAURO: You both have it?

MR. KATZ: Yes, it was late.

DR. MAURO: Oh, you got it late? Listen, I will run through it quickly, and I think we should take care of this pretty quickly. I read through it carefully, and it is a complete rewrite. And as you will see, as you march through, I didn't perform a formal review. You know, there was too much to do that, and we're actually in the process of looking at certain issues. But I am in a position to identify which issues I think we could close at this time, which ones probably do need to wait until we finish our review. So if you'd like, we could quickly march

through the 12 items and where we come out.

The first item, finding one, had to do with adequacy of documentation. Bottom line is we recommend closing that issue. The new revised Site Profile is very thorough in its documentation, and in the little report that I provide, you know, it's explained that, yes, the information is there now. So I'd like to recommend that we close that for the reasons given in the report.

CHAIRMAN GRIFFON: Okay.

DR. MAURO: Okay. The second issue has to do with, I believe, the number of different locations where -- these are these barriers. By the way, what we're talking about is these diffusion barriers made of nickel that were sent to Huntington for processing to clean them up, these nickel diffusion barriers that are used in the enrichment process. And Huntington, that's what they did.

And the second issue had to do with

whether or not there were, the degree to which Paducah, Portsmouth, and Oak Ridge were involved in this process. And the response to that is, yes, it certainly appears that the most recent discussion gets into this matter, but it turns out it really is not all that important. The real issue is, you know, in terms of documenting the history of the use and where they received these barriers from is certainly useful background information, but it really has no bearing on the actual dose reconstruction. The dose reconstruction is driven by the airborne sampling data, and this just makes for a better story that, yes, it was more than just Oak Ridge, it was also Portsmouth and Paducah that were involved in the process. So as far as I'm concerned, finding two could be closed because it really has no direct relevance to the dose reconstruction.

CHAIRMAN GRIFFON: It's more background and history --

DR. MAURO: It's more background.

CHAIRMAN GRIFFON: -- operational history, but any comments? I think I would agree with that. Any others comment?

MEMBER MUNN: Well, John covered it pretty well in his report.

DR. MAURO: Moving on to finding three --

CHAIRMAN GRIFFON: Then the Subcommittee agrees, closed on that one.

MEMBER MUNN: Correct.

CHAIRMAN GRIFFON: Go ahead, John. Sorry.

DR. MAURO: Okay. In finding three, the essence of the problem goes like this: there was air sampling data collected on the amount of airborne nickel in these facilities, and that is really the rock that the internal dosimetry stands on. We have considerable amount of airborne sampling which are expressed in milligrams of nickel per cubic meter. And they have information on how much

uranium. It turns out about one percent of the mass of this nickel barrier was uranium of various enrichments.

So the rock that they're standing on here is: you have a good idea of what the airborne dust loading of the nickel was. And NIOSH provides a table with all of the data, and we looked at the data, and NIOSH has agreed to go with the upper 95th percentile, as appropriate, to assign that dust loading, you know, for nickel. And from there, of course, you can go on and get the uranium and get the intake.

The concern that was raised here that actually still remains a concern, but let me give a little qualifier, is when you look at the data that was provided in support of this position, it's a long table of airborne concentrations of nickel that was collected. And it represents data that was collected in the time period of interest, I believe in the 50s, and then also data that was collected 20

years later. And the table actually indicates which numbers are recent numbers and which were numbers that were collected in the past. And our concern was that, you know, you really should only work with the older numbers, the ones that were collected during the time period of concern, and come up with what the 95th percentile would be from that data set, which turns out to be ten numbers, as opposed to the, whatever, 20 or 30 numbers that are in the table which includes both the old data and what I'll call the new data.

When you do that, you come up with a 95th percentile that is considerably higher. But here's the only qualifier, and this is really a matter for discussion. I'm not sure what to do about this. It turns out when you look at that data set of ten numbers that represent the time period of interest, there's one number that's an outlier. It's what I call the refinery number where there's a single number that's five milligrams of nickel

per cubic meter. All the others are sort of in line with the new data, but there's one number that is sort of an outlier and it skews the distribution such that the upper 95th percentile, when you look at the old data set, these ten numbers, is quite a bit higher. I don't know, maybe a factor of ten. I have the numbers here in the write-up. It's quite a bit higher than the upper 95th percentile when you have, when you use all the data sets.

So I'm sort of ambivalent. You know, I hate to see one outlier that happens to be amongst a set of ten numbers drive the whole process, but bottom line is if you just work with that data set and pluck off the 95th percentile, you come up with a substantially higher value for the airborne nickel concentration than you would do if you pick off the 95th percentile from the full data set. And I just wanted to pass that on to the Work Group, the Subcommittee, to see what your thoughts are. What do you do about that?

MEMBER MUNN: Well, I didn't go back and look at the original table. I just read your response there, John.

DR. MAURO: Yes.

MEMBER MUNN: And five milligrams seems to be, just reading the data that you have here, not looking at the table, that appears to be significantly outlying.

DR. MAURO: It is. It is significantly higher. It's a factor of ten higher than all the other numbers.

MEMBER MUNN: Yes. It makes you wonder if there is a decimal point misplaced somewhere, which would, you know, what you've come up with using the method that you did is a figure that's about 80 percent higher than, about eight times more, I should say --

DR. MAURO: Yes, yes, yes.

MEMBER MUNN: It's still a long way from 95 percentile, but you can't help but question the five milligrams.

DR. MAURO: I understand.

MEMBER MUNN: Even though, refinery, by definition, would lead you to believe that's where you would get a higher historic count. But it just, it looks as though it might be a good idea to take a look at the original report, if that's possible to do. I don't even know how accessible that is.

DR. MAURO: Oh, no, it is. That's where we got it from. That number is there. Now, whether or not -- we didn't go any deeper than that. That is, simply, we looked at it, said, well, this is what the original report says, and whether or not there's no indication that this is a questionable number. You know, you're always stuck with this problem when you have a single outlier in the distribution, what do you do about it?

MEMBER MUNN: Right.

MEMBER KOTELCHUCK: There are, I mean, there's a lot of debate about what represents an outlier in the statistics community, but there are a range of different

options that people use. We have to be claimant-favorable, so I think we have to keep this, unless we can show that the range of outlier definitions that are around in standard statistics books and the statistics community show that this is an outlier, that there would be general agreement among statisticians this is an outlier. Otherwise, we have to include it.

So I wonder if somebody could look at that. It's a matter of going through statistics texts and literature. I suspect we probably have, maybe some of us have contact with mathematicians. I don't know if DCAS -- maybe you could ask that person to please give us a range of definitions and the standard range, if you will. There are conservative, less conservative ones. And if this exceeds the numbers in those standard accepted definitions, then I think we can, in good conscience, drop it. Otherwise, we have to be claimant-favorable and accept it, as we have

to accept it unless otherwise shown. Does that seem reasonable?

MEMBER MUNN: Probably, although it's so difficult to talk to statisticians generally.

MR. HINNEFELD: Ours has a Romanian accent.

MEMBER MUNN: They speak only to God normally, and I don't qualify.

(Laughter.)

MEMBER KOTELCHUCK: Yes, but I think we need their help here.

DR. MAURO: This is John. From a practical standpoint, I looked at a lot of industrial operations where there is airborne particulates generated. And five milligrams, it's high. Actually, from a nuisance dust perspective, it's actually right at the TLV. So it's high, but it's not in a place where you say, oh, my goodness, that can't happen.

MEMBER MUNN: Not beyond possibility. Probably beyond probability, but

not beyond possibility.

MR. STIVER: Also, the fact that it's in the refinery, which is an area you'd expect to have the highest concentration.

MR. HINNEFELD: I have a question for John Mauro. John, you described the data that were collected from the air sampling as being from an earlier period and a later period.

DR. MAURO: Yes.

MR. HINNEFELD: Are those periods, I mean the later period, is that a period of operation when they were no longer dealing with contaminated -- I mean, what's the separation between the earlier period and the later period?

DR. MAURO: All I can say, unfortunately, is that in the table, the source document, there's a little footnote that says C, footnote C, and it says the data collected during the same time period where this uranium operation was going on, that is

the AWE period of interest. All the other data were collected 20 years later. And I'm operating on the premise that it's a completely different time period where there could have been different controls.

But the important point is, out of the ten numbers that are with the designation C, they all look pretty much like the ones that were collected 20 years later, except for this single outlier.

MEMBER MUNN: It's worth looking at. Thank you, John.

CHAIRMAN GRIFFON: So we're going to have NIOSH follow up on this; is that --

MEMBER KOTELCHUCK: Yes, and just report back what the statistician would suggest.

MR. CALHOUN: Maybe even check our source documents and see if we did transpose something.

MEMBER MUNN: Or if the source document might contain a typo.

CHAIRMAN GRIFFON: That's true. So finding four, moving on.

DR. MAURO: Yes. Finding four, I simply raised the issue originally, this business of breathing zone versus a general air sample, as has come up on many occasions where we know that breathing zone samples are very often quite a bit higher than general air samples, and I make reference to a couple of ICRP publications.

Now, in looking at the revised Site Profile, the new one, there's some language in there that explains that the company, Inco, that did the work, that made the measurements, when they collected the air samples, they were specifically taking them to get a pretty good idea of what the workers were being exposed to over an eight-hour period. That was the extent of the information. But it wasn't that it was a general air sample, it was an air sample designed -- the data that we have on nickel dust loading was intended to do the

best they could at the time to see what these people were being exposed to, as opposed to just a general air sample.

So, you know, I'm easy. On that basis, I'm saying that it looks like they at least made an effort to make it representative air, you know, air that the people were breathing over this eight-hour period while they were working there. So on that basis alone, I'm recommending closing this finding.

CHAIRMAN GRIFFON: You're losing your edge, John.

DR. MAURO: I'm getting old.

CHAIRMAN GRIFFON: You are getting old, yes. I had a birthday recently, I can say that.

(Laughter.)

CHAIRMAN GRIFFON: But I also thought that NIOSH was doing a general paper on this subject. It seems like this has been one of those broad issues that's been hanging out

there for a while. Is it Jim Neton's inbox?

MEMBER KOTELCHUCK: There should be something more. There should be a lot of literature on that.

CHAIRMAN GRIFFON: But I thought --

MEMBER KOTELCHUCK: It's not an open question, I don't think. It's a question of checking on that literature, if somebody needs to.

CHAIRMAN GRIFFON: I mean, I agree there's a lot of literature. I thought they were putting a position thing together on how to handle the --

MR. HINNEFELD: Well, we generally look for breathing zones, and if we don't have it I don't, you know, if we don't have breathing, you know, like the samples appear to be attempted to be breathing zones for the samples --

CHAIRMAN GRIFFON: Yes, I'm --

MR. HINNEFELD: I mean, we try to decide that we got data sampling for the

breathing zone, and I don't know that we've gone down the path of extrapolating what are clearly general air samples to an intake. I don't know if we've gone down that pathway. In fact, some of our Evaluation Report summaries will describe we've got some air sampling data that's general area.

CHAIRMAN GRIFFON: I thought it came down --

MR. HINNEFELD: But in general --

CHAIRMAN GRIFFON: -- for Simonds Saw and Bethlehem Steel, I think it came up with something --

MR. HINNEFELD: No, there was breathing zone sampling, I believe. I believe it was breathing zone sampling.

CHAIRMAN GRIFFON: Some was general -- anyway, okay.

MR. HINNEFELD: Some of it was general area. Some of it was general area, but not for, like, contamination -- it was used for other types of activities, as opposed

to --

CHAIRMAN GRIFFON: Okay. I thought it was --

MR. HINNEFELD: I don't think we used the GAs. I think it was breathing zones.

CHAIRMAN GRIFFON: All right. That's good. Okay. And then, aside from that, I agree with John's approach. So we'll close it.

MEMBER MUNN: Yes. Closed. Finding five.

MR. KATZ: Finding five, John.

DR. MAURO: Yes, okay. Finding five, finding five is subsumed by the last one we just talked about, finding three. In other words, if finding three is resolved, finding five is resolved. Okay? Finding six.

MR. HINNEFELD: Did you say three? Is it subsumed by three or four?

DR. MAURO: Three. This business of that outlier, when a decision is made on that outlier and what to do about it.

MR. HINNEFELD: Okay. So finding five then depends on three, is what we said.

DR. MAURO: Yes. So, in a way, finding five is really redundant with three. I can help out a little bit. The concern in finding five had to do also with, they weren't using the 95th percentile, I believe, in the original report. But now they are using it, and the question is what is the right 95th percentile, you know, based on number three. So finding five sort of goes away.

CHAIRMAN GRIFFON: Finding six.

DR. MAURO: Finding six. In the original review, there was no mention of the ingestion pathway. The revised Site Profile does, in fact, explicitly address the ingestion pathway, and it uses the well-known point two rule of thumb in OTIB-9. So, therefore, we have reviewed that thoroughly, and I'm comfortable with it. And the Procedures Subcommittee has judged it to be resolved, so, therefore, on that basis, I

recommend that finding six be closed.

CHAIRMAN GRIFFON: Anybody disagree with that or question that?

MEMBER MUNN: No. Closed.

CHAIRMAN GRIFFON: Sounds good. Alright. Finding seven, John?

DR. MAURO: Yes. I combined seven and eight because they are related. And just give me a second to catch up a little bit here.

CHAIRMAN GRIFFON: Alright.

DR. MAURO: Okay. I think this is one of the items that we're still looking at. Yes. And let me just try to give you, conceptually, what this is about. Okay. There's a brand new strategy being used here for doing these external exposures, so a new analysis was run using Microshield and a new set of doses were calculated, as compared to the original analysis. So a new modeling was done, which is good because we were concerned about the original analysis. We have not

checked those numbers, the new numbers. So what I can say is that the new Site Profile is very responsive to this issue, has a whole new analysis presented, but we have not yet had a chance to independently check those numbers, which is ongoing as we speak, and it's going to take us a bit of time to go through this and a couple of other items that are still actively being looked at.

CHAIRMAN GRIFFON: Alright. So we'll leave that open --

DR. MAURO: So I think we should leave that open until we finish our calculations.

MR. KATZ: Anyway, that's an SC&A action item.

DR. MAURO: And that's an SC&A action, yes.

MR. KATZ: Thank you.

CHAIRMAN GRIFFON: And item eight is similarly --

DR. MAURO: Yes, the two go

together.

CHAIRMAN GRIFFON: Right, okay. Alright.

MR. KATZ: And that will be ready for the next meeting two months from now?

DR. MAURO: I'm expecting, at best, we'll have answers to this in a month, maybe two. I'm not sure because we have this and we have some internal issues. We want to review, you'll see, a couple of items: one dealing with external, one dealing with internal. I've already turned on the crew to do the numbers, and I would say, at best, we'd have something for you, their work will be done in a month, you know, or maybe a little longer. So that should be certainly plenty of time for the next meeting.

MR. KATZ: Okay. Thanks.

CHAIRMAN GRIFFON: Finding nine, John.

DR. MAURO: Okay. Give me a second. Oh, this is simple. We had a concern in the

original review of the method to reconstruct medical exposures because they did not employ the protocol we were used to seeing, namely OTIB-6. In the new revised version, they adopt OTIB-6 and, as far as I'm concerned, that solves the problem and we recommend this item be closed.

CHAIRMAN GRIFFON: Sounds good. Any objections to that?

MEMBER MUNN: None. Closed.

CHAIRMAN GRIFFON: All right. We can close it.

DR. MAURO: Finding ten has to do with photofluorography. In our original review, we said, gee, this is pretty early days. In those days, perhaps they used photofluorography. If you recall, there was a time when SC&A was under the impression that, you know, before a certain date, I think it was 1970, at least at DOE facilities, the automatic fallback position in OTIB-6 is assume there's photofluorography.

It turns out, since then, and we've all concurred with this for AWE facilities, you don't automatically assume that unless there is affirmative evidence that, in fact, there was photofluorography and that it was performed on-site because, for AWE facilities, if there was, for a condition of employment, there was a requirement for medical X-rays, including photofluorography with the early days, then you would include that dose, and it was done on-site. But if it wasn't part of the contract, then you don't necessarily need to include that. This all occurred over a course of some time, but we're now in the position where we do not expect that photofluorography be assumed for AWE facilities unless there is affirmative evidence that it, in fact, occurred, either through contract or through people's records.

So in light of, you know, when we originally did the analysis, we were operating under that impression. That has all changed,

and so we recommend withdrawing this, closing or withdrawing this comment. We do not believe PFG is an issue under the current way in which we do business now.

MEMBER KOTELCHUCK: Would interviews with individual workers help us in this situation? Would they know the difference between X-ray and photofluorography? Might they remember? I mean, photofluorography has that classic green thing. I don't know if they even saw those, but people might remember.

MEMBER MUNN: It's been a long time since I've seen a CATI, but my memory is that there are questions on the CATI about that.

MEMBER KOTELCHUCK: Good.

MR. KATZ: I think the issue is with photofluorography they have to set up shop there, right? It's sort of an industrial scale process.

MR. HINNEFELD: Photofluorography was on DOE sites too, essentially units were

brought to do a lot of X-rays at a time. And they could do a lot at a time, and it just -- I don't think we've ever encountered a situation like that in AWE. In fact, a lot of AWEs clearly sent their employees that they were giving X-rays, sent them to a clinic off-site. They wouldn't even be included. I mean, we're essentially granting them credit for having the X-ray machine on the property at Huntington in order to assign the dose at all.

DR. MAURO: I agree completely with what Stu just said. I don't think I've ever seen, and I've looked at a lot of Site Profiles and cases, where photofluorography was a matter of practice on site at an AWE early facility.

MEMBER KOTELCHUCK: Okay. And we asked questions about it.

MR. HINNEFELD: CATI does that.

MEMBER KOTELCHUCK: I'm satisfied.

CHAIRMAN GRIFFON: Okay. So that's

closed. And item 11, John?

DR. MAURO: Yes, 11. I combined 11 and 12 because they were related. Let me see. Let me just catch up a bit. Okay. This is the residual period, and we're recommending that we keep this item open. And my rationale, I'm reading right now, the bottom line is that we're recommending we keep it open. And if I do a quick read, I have to try to get my reason for it here. I guess everyone else can take a look at it, too, if you have that in front of you. It's not jumping in my head.

MEMBER MUNN: You wanted us to talk about it, essentially.

DR. MAURO: Yes, yes. In other words, I'm just reading my -- it covered a lot of material, so it's not just jumping into my mind right away why I'm recommending leaving this open. They did something unusual here. This might be something worth talking about. Give me a second here.

MEMBER MUNN: I think you thought it was unclear whether or not the procedure preferred was going to be completely bounding.

DR. MAURO: Yes, there was something good here.

MEMBER MUNN: It doesn't have a standby --

DR. MAURO: Oh, oh, I see what they did. Oh, this is important. Yes, yes, it's just coming back to me, reading my notes. They're recommending that, during the residual period or it might be the decon period that occurred later, they're saying, well, the approach we used during the operations period, we'll just apply that to the residual or decon period. I think it might be the decon period. Yes, yes, yes, here's how it goes. The operations period ended in 1962, okay? And then there was this standby period up until 1978. Now, let's just talk about for a minute -- then from '78 and '79, they did a remediation.

So the question one has to ask themselves, okay, well, what are you doing about the standby period, which is from 1962 to 1978, and what are you doing about the actual remediation period where folks came in and cleaned the place up in '78 and '79? The answer is, from '62 to '78, the report is silent. They're treating it as if there was no potential for exposure in the standby period. Now, that may very well be true. Maybe there was nobody there, and there was no potential for exposure. Right now, the report is silent on that. It did address it in the original one, and I believe the original one did have some protocol that we questioned for assigning exposures during the standby period.

The standby period now has no exposures assigned. And I'm just presuming, and I'd like to sort of drop this one on NIOSH, is we need a little rationale and justification why there's no exposures during the standby period. It may be the place was

shut down, and no one was in there. I don't know.

But the issue then goes to: but they do explicitly, NIOSH, the new Site Profile does explicitly address '78 and '79. And the approach they're recommending is, well, we'll simply assign the exposures that we assigned during the operations period to the decontamination period. Now, this is unusual. I haven't seen that before. This is a first.

Now, I would be the first to admit that, from an external exposure point of view, they did not have all these drums. Remember earlier we talked about they have a whole new method of doing the external exposure where they ran, I believe, MCNP with these full barrels filled with this material. They're going to assign that for this decon period. I would be the first to say that it's very unlikely that anyone could have gotten exposures during -- external exposures -- during the decon period because those big

barrels of residue were not there. So some would say, yes, well, sure, that bounds it. Whether or not, I mean, it seems to be throwing a big number at a problem and putting the problem to bed, and that's really a judgment you folks have to make.

With regard to internal exposure, they're using the same approach. Once we resolve this dust-loading business we talked about earlier, this upper bound, the outlier, well, they're basically, you know, plan to use the same approach for this D&D period. Now, that might be a little bit more intuitively appropriate.

One could argue that, you know, that would place an upper -- I mean, it's plausible that there was some residual dust of residue of this material, and that during D&D you generate airborne activity and, therefore, the numbers that you use that were airborne during operation would bound what one would experience during D&D, and that may very well

be plausible. I'm not sure, you know. You think about D&D and you think people are ripping things up, tearing it down.

So you've got offsetting problems. One is it's likely that, you know, you're not going to have, you know, during the operations period, you were actually producing this residual stuff, material, there was airborne activity, directly injected airborne as a result of the nickel operation that was going on. That was the process that caused the airborne dust loadings that were observed during operations.

Now, all of a sudden, it's many, many years later. It's what? Twenty years later or fifteen years later. And they're D&D'ing the place. The mechanism by which you get airborne radioactivity is a lot different. You're ripping things up. You're cleaning things. You're going through a D&D process. And there certainly could have been some residue around being generated.

So the scenario that would take place here during D&D is going to be a lot different than the scenario that took place during operations. So --

CHAIRMAN GRIFFON: John? I think NIOSH has something --

DR. MAURO: Okay. Yes. I'm talking on and on.

MR. HINNEFELD: I think that, you know, for the '78 to '79 period, I think we'd have to -- I don't know what I can say about that. We'll wait and see. The standby period, the facility isn't covered.

CHAIRMAN GRIFFON: It's not covered.

MR. HINNEFELD: It's a DOE facility. It's not an AWE. It's a DOE facility. Residual contamination periods are defined only for AWE. DOE facilities don't have a residual contamination period. So if coverage stops in '63, according to the DOE facilities page, and then it was a DOE decontamination from '78 to '79, so those two years are

covered. So the standby period is not covered.

CHAIRMAN GRIFFON: It's just an odd way of -- yes.

MR. HINNEFELD: You know, we run into that at Weldon Springs, too. You know, Weldon Springs was a DOE facility, got turned over contaminated to the Department of Army. Well, this coverage stopped when it got turned over to the Army.

CHAIRMAN GRIFFON: Right.

MR. HINNEFELD: So it's not covered under the standby period. Now, the discussion of the remediation and the clean-up, that's something that needs to be pursued further when we get -- I guess John said, this is the one where he said there's going to be a more significant evaluation because he just took a quick --

DR. MAURO: Right. This is a preliminary review.

MR. HINNEFELD: Okay. But the

standby is excluded because it's not covered.

CHAIRMAN GRIFFON: Alright. So you don't need to focus on the standby, John, but --

DR. MAURO: You know, I have to say I thought Huntington was an AWE. I probably wouldn't have gotten it if -- I didn't know that.

MR. HINNEFELD: It may, you know, sometimes the classifications have changed over time, and it may have started as an AWE, but it's currently classified as a DOE facility.

MR. STIVER: I think it was considered an AWE when we did our initial review. In 2008, when you produced the new report, it was covered as a DOE facility.

MR. HINNEFELD: Okay, alright.

MEMBER MUNN: Remind us, what are the activated isotopes that we're concerned with here?

MR. HINNEFELD: It's the uranium

contamination on the nickel.

MEMBER MUNN: It's still uranium contamination. It's not activated nickel?

MR. HINNEFELD: No.

MEMBER MUNN: Okay. Alright. Just checking. Thank you.

DR. MAURO: But to close this out, just to let you know as almost a preview of what is it that we think is important that we need to look at --

CHAIRMAN GRIFFON: Coming features.

DR. MAURO: Yes. We already talked about the external exposure we're revisiting. From an internal perspective, what we're revisiting is the following. In the original analysis, the default assumption was that these barriers contained uranium and that the uranium that was there was at the upper end of the contractual -- I thought it was contractual. See, it was my understanding that this was a contract. And that the highest concentration that was allowed to be

handled was 36 percent enrichment. In the original analysis, it was assumed that that was the enrichment level of the uranium.

MEMBER MUNN: Of everything?

DR. MAURO: Yes, for everybody, which is extremely bounding.

MEMBER MUNN: It sure is.

DR. MAURO: Right, exactly. And as a result of that, they used that, and they also assumed that the amount of uranium that was in the nickel was one percent by weight. So you could envision how you go about, once you know the airborne dust loading of nickel, you can see how the calculation is done.

Now the new Site Profile doesn't use this. They assume that the enrichment that everyone experienced is at two percent enrichment, which is more realistic.

Oh, I forgot a very important point. When they assumed it was at 36 percent from the previous one, they said, listen, because of that, that more than accounts for any

contribution from recycled uranium. It's recognized that recycled uranium was handled here and they know, well, based on the knowledge of what the composition of recycled uranium was at the gaseous diffusion plants, you know, they have some idea of what that is.

But what they said in the original Site Profile was: we're not going to explicitly address recycled uranium because we're so conservative regarding enrichment using this 36 percent. And we accepted that at the time.

However, now they've made a major revision where, no, no, no, we're not going to do the 36 percent anymore, we're going to use 2 percent enrichment, but we are going to explicitly address recycled uranium. So now that's become -- so you can see it's a real brand new Site Profile.

So the other thing that we're looking at is this new strategy, whether or not we believe using two percent is

appropriately bounding enrichment, whether or not assuming that the mass composition of one percent of uranium by weight in the nickel is appropriately bounding. And, of course, we're also looking at the particular amount of recycled uranium, neptunium, and plutonium that is assumed to be associated with the uranium is, in fact, a good value.

So that's what we're doing right now. And we will be putting a report out on those major subjects within a month or so.

MEMBER MUNN: It sounds like a much more realistic assertion.

DR. MAURO: Yes, especially regarding internal.

MEMBER MUNN: Yes.

MR. FARVER: Are you going to provide a report on -- how should I word this? Provide a report on --

DR. MAURO: It's going to be a complete Site Profile review. This is a brand new Site Profile.

MR. FARVER: Okay.

DR. MAURO: So we're going to submit a brand new Site Profile review. What I'm trying to say, though, is we know where the action is. The action is checking those external exposures and checking these new internal exposures that I just described. The business of the residual period -- I'm sorry, not residual. The D&D period. It sounds like maybe we shouldn't look at that right now. NIOSH is going to be visiting that?

MR. HINNEFELD: Well, actually, no. What we would like is for you to complete your evaluation of the Site Profile, the new Site Profile, and let us go from there. I mean, that would be --

DR. MAURO: Bear in mind, I think our finding regarding this D&D period is going to be what I just told you. There really is no -- now, what we could do, I mean we're certainly going to have that finding, as I described it. What we will do, though, is

when we do our research on the Site Research Database, on the D&D operation, we'll see what kind of data are out there for that '78 and '79 time period and address the degree to which we believe that there are data out there that will allow you to do a more realistic treatment of the problem than the current method in your current Site Profile.

MR. HINNEFELD: Okay. So from our standpoint, it would be most convenient for us if you would complete your review of the new Site Profile, and then we can take it up --

MR. STIVER: That's how we'll go ahead and do it.

DR. MAURO: Very good. That concludes my story.

CHAIRMAN GRIFFON: Okay. Thanks, John.

MEMBER MUNN: And thank you for the White Paper, John. It was very helpful, the individual statements about what's going on with the various findings. Thanks.

DR. MAURO: Thank you.

CHAIRMAN GRIFFON: And I think that brings us to the end of the eighth set. Given the time, I think we should start the ninth set. It's a bit early for breaking. So let's go into -- yes. So the ninth set. Do we have these -- is 179 still open, or is that --

DR. MAURO: Yes.

CHAIRMAN GRIFFON: 179.1 then.

DR. MAURO: Yes. This is my last -- if you're ready to go, I have a quick one for you, and then I'll step out of this. Ashland Oil, right? We're talking Ashland Oil? Yes. A question was raised, I believe, originally. Ashland Oil was a site where Linde sent its residue for storage. It was near the Linde site. And in the original, our original review basically said, you know, that the material was shipped there in 1957 or '56 and that there was actually a survey, a walkover survey performed in 1957 where they came up with some exposure rate. I believe it was --

I forget the exact number. I have it here in my notes somewhere. So, therefore, we have survey data, walkover survey data which allows you to assign an external dose to a worker, this particular worker who was there from 1948 or maybe even earlier, well through '57.

And, Mark, at the time, you said, wait a minute, John, hold the presses. We believe that the material that was sent to Ashland may very well have been much earlier; so, therefore, maybe we got the story wrong. The reality is that the guy who worked there from the 1940s right through the '50s, he might have been exposed, if, in fact, the material was deposited there in an earlier year, let's say 1948, then that '57 survey may not be all that useful because so many years have passed. And, Mark, I believe you're right.

We looked at the Ashland Oil source documents. Not only that, we looked at the Linde documents, so we came at it from two

separate places independent. And both documents confirmed that shipments of sludge from Linde occurred up to and perhaps ended in 1948.

So what we have here is, okay, the shipments went there up through 1948. Then the survey, the walkover survey for this guy was performed in -- that we're using, the data -- in 1957 or '58, that time period. And the question becomes, oh, okay, we were wrong, you know. This time period did pass. Can we use '57/'58 survey data to reconstruct external exposure to a worker that was there in the 1940s when this material was originally deposited? In fact, we believe there were no more deposits after 1948. That was the last shipment.

So I think we still have an open item. That's where I'm coming down on this one. What do we do with that? The fact is, yes, it looks like that survey data, who knows what happened between those time periods?

Material could have been removed. There could have been some cover material laid down, which creates a circumstance where it's possible that that survey performed in 1957-'58 was not representative of the field, radiation field in 1948 when the guy was working there and when there was residue.

CHAIRMAN GRIFFON: And, John, have you shared your basis for that conclusion with NIOSH?

DR. MAURO: I sent in, I believe there is a written response somewhere to that effect that was prepared recently.

CHAIRMAN GRIFFON: Okay.

DR. MAURO: I don't know if the Subcommittee has that. John or Doug, do you know whether that was distributed, that little story I just told?

MR. STIVER: I don't believe it was, but I have it here and I can send it out.

DR. MAURO: Okay.

CHAIRMAN GRIFFON: Because I think

that's important. It seems to contradict what the understanding was earlier. So if you have references and everything with it, I think it's something NIOSH needs to look at.

MR. KATZ: So you have this as a memo, or what is this?

MR. STIVER: We discovered this during the last meeting. This Weinstein report which came out in '58, I believe it was, indicated that the dumping took place and it basically stopped in '48. So there was a bit of a disconnect there, and that's why we followed up and went ahead and produced this additional study.

CHAIRMAN GRIFFON: Well, if you can share that with NIOSH.

MEMBER KOTELCHUCK: That really was 57 microrems?

DR. MAURO: Yes, yes, 57 micro-r per hour. Right. It wasn't very high.

MR. FARVER: But that's based on a 1950s survey, which may not be representative.

CHAIRMAN GRIFFON: Sure.

MR. KATZ: So you're sending this to Nancy or distributing it properly, or how are you doing this?

MR. STIVER: I can certainly do that.

MR. KATZ: Because when we have White Papers and memos, we should distribute those according to formula.

MR. STIVER: I'm seeing whether this qualifies as a White Paper here.

MR. KATZ: If it's just a response to go in the matrix, then just plunk it in the matrix.

MR. STIVER: It's more of a memo really.

MR. KATZ: I mean, if it's too much to work in the matrix, and it deserves to be a memo or a White Paper --

MR. STIVER: Yes, we can go ahead and do it through Nancy. It's just sort of a four-page response, so it is fairly lengthy.

MR. KATZ: Yes. Let's do that.

MR. STIVER: Formalize it.

MR. KATZ: Yes, thanks.

MR. FARVER: We did summarize it in the matrix.

MR. KATZ: Right.

MR. FARVER: More details and references.

MR. KATZ: Okay. So SC&A will be sending a memo and DCAS can respond.

CHAIRMAN GRIFFON: So do we have the next one, John? Is it 179.4? John?

DR. MAURO: Oh, yes, hold on.

MR. FARVER: 179.4. If you read the NIOSH response, it says that we closed this in the February meeting.

MR. SIEBERT: This is Scott. This is wonderful that the transcripts are now becoming more available quickly. I did go back and look through the transcript of the last meeting because I had this one closed in my notes, and I give the reference as to page

and line where we actually did state it was closed in the transcript.

MEMBER MUNN: Thank you, Scott.

CHAIRMAN GRIFFON: That's why SC&A is taking over the task. Alright. So we already closed that. We don't need to re-discuss it.

MEMBER MUNN: No, it's gone.

CHAIRMAN GRIFFON: Alright. Moving on. 180.2. Now, this says the Committee is to review the SC&A report. Did all the Committee Members review the SC&A report? Having heard none --

DR. MAURO: I'm sorry. This is Bridgeport Brass again?

CHAIRMAN GRIFFON: 180.2. I'm not --

MR. SIEBERT: 149.1.

MEMBER MUNN: Is this still Ashland?

MR. HINNEFELD: No.

MR. STIVER: This is the same issue as 149.1 and Bridgeport Brass.

DR. MAURO: Yes, this is -- I'm sorry to interrupt. Yes, this is Bridgeport Brass. It's the 95th percentile question, and I believe we resolved that.

CHAIRMAN GRIFFON: It's the same issue as in 149.

DR. MAURO: Exactly, only it comes in here because it's a real case. You see where I'm going?

CHAIRMAN GRIFFON: Yes, yes, yes.

DR. MAURO: And we resolved the factor of two. If you remember, it had to do with the correlation versus non-correlation.

CHAIRMAN GRIFFON: Yes, that's right. Okay.

DR. MAURO: Right. And we resolved the correlation issue; so therefore, I would suggest that we close this issue.

CHAIRMAN GRIFFON: Yes. And I think I was referencing the report that was given in the other, for your mini Site Profile review or whatever, yes. So I would say, yes, I

agree, I think we can close it. Is that okay?

MEMBER MUNN: Close and reference the 149 finding.

CHAIRMAN GRIFFON: Alright. Moving to the next one, 185.1; is that right?

MR. SIEBERT: And just so everyone is aware, this is the Huntington Pilot Plant.

CHAIRMAN GRIFFON: Okay. Thank you.

MR. FARVER: We reviewed the TBD. The revised TBD presents a new strategy for deriving external penetrating and non-penetrating doses. Because this approach is new, we're still looking into it. And SC&A is currently performing an independent evaluation of the new approaches.

MR. STIVER: So part of our final Site Profile review.

MR. KATZ: When will that be ready? Will that be ready for the next meeting?

MR. STIVER: Yes.

MR. KATZ: Okay.

CHAIRMAN GRIFFON: Great. And does

that apply to the other ones on this case, too, or just that 185.2? Let's just step through them, I guess.

DR. MAURO: I'm looking at -- all of these should be resolved when we finish our review. The Huntington Site Profile is an exposure matrix. And once we deal with the issues in Huntington, all the issues associated with this case probably will, you know, we'll be in a position to address them.

CHAIRMAN GRIFFON: So we can skip past 185, all these -- right, okay.

DR. MAURO: You know, we could get rid of the ones that we closed. For example, there's one here that talks about ingestion. Keep in mind that there were certain issues that I recommended we close, and 185.5 is an ingestion one, and so we probably could close that.

CHAIRMAN GRIFFON: Agreed, yes, yes. So 185.5. Any others, John, that would be closed?

DR. MAURO: I'm looking at it right now. No, all the others are still alive.

CHAIRMAN GRIFFON: Okay, thank you. All right. Yes, down to 191.1.

DR. MAURO: Everyone on the phone, listen, I'm going to break. I think my role on the AWE work is done, so, unless you need me, you can certainly give me a holler, but I'm going to break.

MR. KATZ: Okay. Thank you, John. Have a good day.

MEMBER MUNN: Who is 191? What site are we looking at?

CHAIRMAN GRIFFON: Doug is going to tell us in a second. Or Scott.

MR. SIEBERT: 191 is the Clarksville Pantex claim, and the general issue with this is, in the initial findings, there were positive dosimetry values, I mean, greater than zero, that were not addressed as positive dosimetry readings. In other words, we did not assign them as a measured dose, and SC&A

questioned that. We went back and we looked, and all the ones that were above zero were actually less than the LOD over two, so we assigned those as missed dose, as opposed to measured dose. And I believe the last meeting we had that written up, and SC&A was going to go back and verify that.

MR. FARVER: What did I write? Oh, yes. SC&A agrees with NIOSH response. Doses in question included values that were less than half the LOD and were treated as missed dose. So we recommend closing this.

CHAIRMAN GRIFFON: Okay, alright. So closed, hearing no other issues. Alright. And where is the next? There you go. 195.1. Scott, what site is that?

MR. SIEBERT: Grand Junction/De Soto/Hanford.

CHAIRMAN GRIFFON: Alright. A triple. And I think it, I think the only reason I kept this highlighted, the first one, is that it says something about NIOSH

considering whether a PER is needed for this issue because we sort of decided it was a QA issue, but I think at the last meeting there was some discussion of whether it may be a broad issue and should be a PER. Does anybody recollect that?

MR. STIVER: NIOSH has a response indicating --

CHAIRMAN GRIFFON: Okay. And I'm looking at my old matrix again so --

MEMBER MUNN: Is this also the one where there was a typo on the report with respect to AP/PA?

MR. SIEBERT: This is Scott. If I remember correctly, the issue is, and this is a somewhat generic issue we've run into a few times, those few organs where AP is not the most claimant-favorable in all cases: red bone marrow, lung, there's a few of them. That's outlined in OCAS-IG-1 to deal with the rotational geometry and determine if it's greater, unless it's determined that the AP is

a more appropriate factor for the type of work that the EE was doing.

I believe the typo we discussed on this one was just the fact that we did not put in the report the type of work that the individual was doing. It made more sense to assign AP than rotational. If I remember correctly, that was that issue. But as I said, I looked at a transcript, and we agreed the issue for this claim was closed, but we agreed to look into whether a PER or a clarification on this issue is appropriate.

CHAIRMAN GRIFFON: That's what I have in my notes --

MR. FARVER: IG-1 basically says that, for certain cancers, you should consider these other geometries. And if you don't, you have to put in your DR why you don't. And I have yet to see one that either considers those geometries or puts in there why they don't consider it.

CHAIRMAN GRIFFON: Why they don't.

Right, right, right.

MR. FARVER: So I think that's why the question of the PER came up.

CHAIRMAN GRIFFON: Yes. All right. So that's sort of a standing action on the PER question, right? But for the cases, we agree it's closed. It was a QA item. So I don't know how we track these going forward. That's why I left it highlighted, you know, where we're asking for NIOSH to consider. I mean, I guess if NIOSH came back and said, yes, we are doing a PER on this, then we'd say that on this, and we'd close it. But I didn't want to -- that's why I kept it highlighted, Stu, just to, because I didn't know how to make sure we don't lose track of it.

MR. FARVER: Do you want to look into it for the next meeting and --

CHAIRMAN GRIFFON: Probably.

MR. FARVER: -- see if we can come out closing it?

MR. HINNEFELD: Yes, probably, I

want to look into it for the next meeting. Scott, was the question about AP versus rotational, was that for all three sites the person worked at or that was a generic approach that was used in every case at every site?

MR. SIEBERT: That I don't know off the top of my head. I'm assuming that AP was used across the board, based on the type of work --

MR. FARVER: It's just that IG-1 says that, for certain cancers, you'll consider these other geometries because they have a higher DCF. If you don't do that, then you should put in why you don't do that.

MR. HINNEFELD: Right. And I think part of the reason we decided to close this one was it was a compensable case anyway, right?

MR. FARVER: For this case I don't think it mattered. But it keeps coming up.

CHAIRMAN GRIFFON: That might have

been part of it. I don't think it's an issue for this case. The general question, yes.

MR. HINNEFELD: So that would be like an IG-1 rather than a site-specific.

CHAIRMAN GRIFFON: Yes, yes. Alright. 195.3.

MR. SIEBERT: I'm sorry. I missed the resolution on that.

MR. FARVER: You're going to fix it.

MR. HINNEFELD: We're supposed to come back -- we, NIOSH, is supposed to come back with some idea about PER plans if we think one is required. If we think it's not required, why wouldn't it be? That kind of thing.

MR. SIEBERT: Okay. I just wanted to make sure I had that. Thank you.

CHAIRMAN GRIFFON: And 195.3 then. SC&A, I think this is in --

MR. FARVER: Yes. This is going to also take care of one later on.

MEMBER MUNN: This is another one of

those --

MR. FARVER: This is another ongoing issue, and I did get to review their files, and I do agree with all that they had there. And this goes into the zinc-65, sodium-64 whole body counts. This has been going on for a very long time.

CHAIRMAN GRIFFON: Yes. So you basically did the additional review, and you're okay with --

MR. FARVER: Yes.

CHAIRMAN GRIFFON: I mean, if any of the Subcommittee Members have questions or -- otherwise, I think we, you know, if SC&A is in agreement, I think we can close this.

MEMBER MUNN: Was there any decision, any action on the question of PER?

CHAIRMAN GRIFFON: For the last meeting, you mean?

MR. CALHOUN: I think we're going to respond with --

MR. HINNEFELD: We're going to

respond with something next week.

CHAIRMAN GRIFFON: That was for 195.1. 195.3 I think we can close. And there's nothing more on 195, I don't think. This may be a good --

MR. KATZ: Is there any more on the set?

CHAIRMAN GRIFFON: Well, 197.3. I'm not sure how many more there are in the whole set here.

MEMBER MUNN: There's a bunch.

CHAIRMAN GRIFFON: Oh, okay, yes.

MEMBER MUNN: We're only halfway there.

CHAIRMAN GRIFFON: Yes, there's still several down here. So why don't we --

MR. KATZ: You want to break for lunch?

CHAIRMAN GRIFFON: Yes, I think it makes sense to break before we get into another case.

MR. KATZ: So we're going to start at

197?

CHAIRMAN GRIFFON: 197.3, yes. And break until 1:00; is that okay? Alright.

MR. KATZ: Very good. So we're breaking until one. Thanks, everyone hanging in there on the phone, and we'll pick up then.

(Whereupon, the above-entitled matter went off the record at 11:58 a.m. and resumed at 1:01 p.m.)

MR. KATZ: So good afternoon, everyone. We're back from lunch break, the Subcommittee on Dose Reconstruction Review. And we're still working through set nine. We're on 197.3, I think. Let me just check on the line and see do we have Brad and David? Are you on the line?

MEMBER CLAWSON: I'm on the line, Ted.

MR. KATZ: Hi, Brad. And David, too? Richardson? Okay. Well, we can carry on.

CHAIRMAN GRIFFON: Alright. I think

this is yours, 197.3.

MR. FARVER: Yes. And this is just a carryover from a while back anyway. It has to do with the construction worker doses in OTIB-30 and OTIB-52 and applying the different correction factors. And you can see by the yellow response there that they can differ from 1.1 to 1.4. And so we had a little question about how they are corrected.

So, anyway, I went back and I reviewed OTIB-30 and OTIB-52, and I finally figured it out. They're correcting a little bit differently, depending on the site, depending on the year, and so forth, depending on the doses for that site. So I think we can go ahead and close this one now that I kind of understand it better, which was the whole point behind it. We just didn't understand how they came up with their values.

MEMBER MUNN: They kind of have those responses out of order there.

MEMBER CLAWSON: Help me with this

then, Doug, because my understanding was that when we reviewed OTIB-52, and you can correct me if I'm wrong, but I thought that that OTIB, from what I understood, was not going to be used. We had to show the ability to be able to reconstruct.

MR. FARVER: Now, for OTIB-52, I believe that the -- oh, I forget, the table in the back there for the reconstruction workers, that already is modified by the factors. So you don't take those numbers and multiply them again, if I understand it correctly.

MEMBER CLAWSON: We had quite a bit of discussion on --

MR. HINNEFELD: What site are we talking about? What site is this case from?

MR. SIEBERT: The site is Hanford.

MR. HINNEFELD: Okay. That's one of the sites, Brad, where the data set was used from Hanford in the development of OTIB-52, and in those instances what we said was OTIB-52 certainly is used as the default for those

sites.

MR. FARVER: For this, yes, for Hanford.

MR. HINNEFELD: Yes.

MR. FARVER: I'm not too familiar with these other concerns.

MR. HINNEFELD: Well, it came after --

MR. FARVER: Okay, okay.

MR. STIVER: Really, the guidance that's emerged from the review of OTIB-52 is to look at a site-specific basis, and, in this case, it came from Hanford to begin with.

MR. FARVER: Right. So this is a simplified version.

MEMBER CLAWSON: Okay.

MEMBER MUNN: So we're closing that one?

CHAIRMAN GRIFFON: Yes. And I'm not sure what this is, 201, observation one, if something is still there. I'm not sure if we addressed this or not.

MEMBER MUNN: Geometric correction factor.

MR. FARVER: Yes. The observation was just to point out that they did a correction for extremity dose, and right now I believe that the place to do that is the TIB-13, which specifically is for Mallinckrodt workers. That's what it was developed for, but we're starting to see it apply to other instances. And so we just wanted to make a note that this is developed for Mallinckrodt workers, and it may or may not apply to activities at INL.

MR. HINNEFELD: Yes. I think when the finding was written that it applied for Mallinckrodt, but I think that TIB has been replaced now by the TIB that essentially just says geometry --

MR. FARVER: Yes.

MR. HINNEFELD: When this was written, it probably just said Mallinckrodt.

MR. FARVER: Yes, it did.

MR. HINNEFELD: And it's been replaced with another one that's more general. You know, you've got this geometry. It doesn't matter where that geometry is --

MR. FARVER: Correct.

CHAIRMAN GRIFFON: So I think that's the answer, and that closes it, I think.

MEMBER MUNN: I don't believe there's anything else to consider.

CHAIRMAN GRIFFON: Right, right. 205, the next one, observation four.

MR. FARVER: Okay. And this was for, I believe the Medina site.

MEMBER MUNN: Yes, I think so.

MR. FARVER: And we just were a little confused where the 11,500 picocuries per day of tritium came from, where they got that value. And they give an explanation, and the only problem I have, I could not find that version, that revision of the document, you know, TIB 39 from May of 2006. I couldn't find that on the Huntington technical

documents on the website. The only thing they had was rev 0 from November of 2006. And even in that instance, they go through a similar process, except when you get down to the bottom they come up with about 18,000 picocuries per day and they say that it was less than a millirem, so it's a, no, never mind in the rev 0 November of 2006 version.

MEMBER MUNN: So a little over six percent of it.

MR. STIVER: Yes, 6.4 percent was HTO.

MR. FARVER: So, dose-wise, it's not a problem. It was just, you know, we were confused about where they came up with the eleven and a half picocuries or eleven and a half thousand picocuries per day. And like I say, the 2006 November version has a little, comes up with a little different answer. But it also says that the doses are going to be less than a millirem, so it's a, no, never mind. I mean, even when we went through and

wrote this up as an observation, we showed calculations that it was still on the order of a millirem or so, and it really wasn't a big concern. It was just we'd like to know for the future we you get the numbers from.

MEMBER MUNN: And doesn't this June last year entry say that, though?

MR. FARVER: It does.

MEMBER MUNN: It gives you the assumptions.

MR. FARVER: It does, but I could not find the document that they reference, so I could not verify what they wrote. In the November version, it's very similar, and it comes down to the conclusion that it's less than a millirem and, you know, it's not an issue. But I just couldn't come up with their exact wording.

MR. SIEBERT: This is Scott. If we look back at this one, it was done a couple of months before that November rev was on the streets.

MR. FARVER: Yes.

MR. SIEBERT: So as you see in the response, it was assessed, those values came out of the draft version that was in place. It wasn't in place. Let me rephrase that. That was available to the dose reconstructor at the time, even though it was not the official document yet because we knew the update was coming. That was to get that claim out in a timely manner. It's generally not something we do, but, once again, this was something that was done back in 2006.

MR. FARVER: And really all I would say then is, if you're going to do that and use a draft document, you should probably go ahead and put all these assumptions in your dose reconstruction.

MR. SIEBERT: I agree wholeheartedly.

MR. FARVER: Since it's not in an approved document.

MR. CALHOUN: And we are definitely

not in the business of using draft documents.

MR. FARVER: That was all the concern was, how did you come up with the number, and that's been explained.

MEMBER MUNN: That pretty much closes it.

MR. FARVER: That pretty much closes that.

CHAIRMAN GRIFFON: The 206.1 then, page 42 to 43.

MEMBER MUNN: The transcript says we closed it.

MR. SIEBERT: Yes, this is Scott. That's another one I found in the transcript that I believe we closed.

MR. FARVER: We probably did because, even looking at this, I really don't know what to do with it, and I think that's what I said the last time.

MEMBER MUNN: Thank you. It's closed.

MR. FARVER: Well, it comes down to

a judgment call, and you can do this or you can do this, and there's no good answer, which I think is what we came up with the last time: no good answer. So if it's okay, we'll still consider this closed.

CHAIRMAN GRIFFON: Yes, I guess it's okay in this case.

MEMBER MUNN: Yes.

CHAIRMAN GRIFFON: Is everybody okay with that?

MEMBER MUNN: Yes.

MR. FARVER: I think the next one is 207.4. And this goes back to, it's the same response we had for 195.3. There were some files out there to review. It's the same zinc 65, sodium 24 issue. And, you know, I went back and reviewed it, and I have no concerns. So I recommend closing this, like we did the other one.

CHAIRMAN GRIFFON: Okay. Well, let's close it then. 211.1, is that next?

MEMBER KOTELCHUCK: Now, while

you're thinking, I thought prostate was not, prostate cancer was not covered.

MR. HINNEFELD: It's not an SEC cancer but we do dose reconstructions for them.

MEMBER KOTELCHUCK: Actually, the truth is all cancers are dose.

MR. HINNEFELD: Yes, every one.

MEMBER KOTELCHUCK: Okay, good. Thank you.

MR. FARVER: And this has to do with, it looks like the doses were a little bit less or less than we thought they should be, even though it was done with the Monte Carlo calculation.

MEMBER MUNN: It says they're continuing to review it.

MR. SIEBERT: This is Scott. Stu and Grady, we sent you a report over late last week. Would you like me to kind of touch on it really quickly?

MR. HINNEFELD: Sure.

MR. SIEBERT: Okay. I figured that was the answer. This is, we found -- and we've discussed this in the Subcommittee the last couple of times that the best estimate tool for Savannah River used Crystal Ball for the Monte Carlo calculations before we went to the Vose simulator. So one thing we have found over time, and we actually determined this right before we switched over to the Vose software, that it appears that when we ran Crystal Ball remotely through the network on the server, it would sometimes give us values that were lower than to be expected. When it was run remotely on our desktops, on our laptops locally, and when it was run directly on the server from people in the COC, we did not have that issue and we didn't have it every time it was run remotely on the server. But it does appear that, at various times, we never figured out exactly why Crystal Ball was doing this. There were some times where it would bias low, specifically in the 3-250 keV

range.

So we, at that point, we had given dose reconstructors directions on how to check that versus the regular tool to be looking for that. That was late in 2009. And in March of 2010, we switched over the Vose tool. Since that time, we've been looking into the situation, and, as I said, we just sent a report over to DCAS. We went back and pulled all dose reconstructions that used that EDCW tool, and we reran Crystal Ball locally on all those tools and compared it to the original doses that were assigned. And we found approximately, it looks like 15 to 18 cases, that we will likely look at under a PER type scenario or roll it into Savannah River PER. However they do that, that's up to NIOSH. But we did find some cases that were consistently lower that we're going to have to deal with in, apparently, a PER process. That was out of 300 and some cases, so you can see how it was sporadic.

MEMBER MUNN: It's a mystery.

CHAIRMAN GRIFFON: Yes, that is very odd. But I guess that's the -- I mean, I'm not sure what else we can do with this.

MEMBER CLAWSON: Well, Mark, does this fall under a QA issue, you know, to catch something like this? This is Brad.

MEMBER MUNN: Who knows.

MR. FARVER: I think it does, Brad, because, if you're checking your calculations and verifying your software, these things aren't going to happen.

MEMBER CLAWSON: I understand that, and I commend them on their effort for this because this shows a lot of work that they found the problem. They don't know why it was doing that, but, to me, this kind of falls under a QA issue.

CHAIRMAN GRIFFON: Yes, I think you're right. I think the action is the same, right? But I think you're right it should be.

MR. FARVER: I mean, I don't know we

can do anything about it, but I'm just saying --

MR. STIVER: It kind of raises the issue in general, something we probably haven't looked at. And the software V&V is, you know, this issue of running from different --

CHAIRMAN GRIFFON: Yes, different platforms or whatever.

MR. STIVER: -- remotely and network versus -- it shouldn't make a difference. You're possibly accessing an older version or a different version than you thought you were but --

MR. HINNEFELD: I don't have the knowledge base to even offer an opinion.

CHAIRMAN GRIFFON: Right, right.

MEMBER POSTON: So this isn't a Monte Carlo problem, it's a what you're running it on, a platform --

MR. STIVER: Sounds like it.

MEMBER POSTON: I was going to say

if you ran the Monte Carlo problem a hundred times, you'd get a hundred different answers.

MR. FARVER: But I think it was significantly lower than you would expect the differences to be.

MR. STIVER: By chance or by probability.

MEMBER MUNN: Yes, too low.

MR. KATZ: Yes. On average, you'd get the same results with the Monte Carlo site.

MR. STIVER: Offset if they were using that access to one platform versus the other, so it's kind of strange.

CHAIRMAN GRIFFON: Yes, I think we, I don't think there's any further action here, except the follow-up on the PER question, right? I think that's the main --

MEMBER CLAWSON: What I was trying to mean by this, Mark, is I know that we've, that they've been taking corrective actions to do this, but I was just thinking, under our QA

program, this is something that we may want to just kind of follow up with to make sure that these, you know, have been functioning well. That's all I was trying to say.

CHAIRMAN GRIFFON: Yes, and I agree. I think it should still be categorized as a QA finding. But the action, I don't think there's any effect on this case, it looks like, right? So the action would be the action that NIOSH is taking, which is to look to see the impact, the broader impact.

MR. FARVER: No, it wouldn't impact this case because you're only looking at a PoC of about 39 percent.

CHAIRMAN GRIFFON: Right. That's in the green there, right, or somewhere they address the -- right above the green, yes. So I think it's closed for this case and the PER follow up, but I think it should be labeled as a QA. So, you know, when we pull these together and do a wrap-up report, we'll have that information as a QA finding, right?

MR. FARVER: And we wrote it up because it was approximately, our doses that we determined were about 50 percent. Well, about twice what the NIOSH dose was, and that's why that would be a difference we didn't attribute to just the Monte Carlo calculation.

CHAIRMAN GRIFFON: Right.

MR. KATZ: It's a little bit weird to call it a QA issue because this is not a problem we expect to catch even in -- we wouldn't normally be doing QA for this kind of -- you don't expect this to happen.

MR. FARVER: You do from now on.

MR. KATZ: No, I know. No, I know, going forward. But I'm saying, in other words, we've categorized a lot of problems as QA because QA should have been, should have caught it. And all I'm saying here is the distinction here is you really wouldn't expect this problem to occur. We don't even understand why it's occurring.

CHAIRMAN GRIFFON: Yes, yes.

MR. KATZ: So it's not something you have a QA program that should have caught and then ultimately did, because they did catch it, but, I mean --

CHAIRMAN GRIFFON: Even if they're testing the software, they're not likely to look at different servers and --

MR. KATZ: Yes, exactly. Right. So that's all I'm saying is it's not really a criticism of the QA program in this case.

MR. FARVER: Well, I mean, I'm going to have to take issue with that because, I mean, we caught it. We're looking to compare their doses to what we think the doses should be.

MR. KATZ: No, but you caught it because you're reviewing these cases. I mean, they're not reviewing all their cases this way to --

MR. FARVER: Well, they're doing peer review on all their cases. You should

have some idea what the doses should be, and if you're running about half of what it should be, that should send up a flag.

MR. STIVER: This is Stiver. I'd say this is something that would kind of come out of the blue. I mean, I don't see, in any V&V system I've ever been involved in, we wouldn't have really looked at running the, you know, how the particular code was accessed in a run. It's just not something you would expect to cause a problem. But they did discover it, and so I guess there is some issue, at least with that cell-based programs maybe. So I don't know if it's really something you can describe to a deficiency in the QA process.

MEMBER MUNN: So what do you do?

CHAIRMAN GRIFFON: How would you describe it?

MEMBER CLAWSON: Well, this is Brad again. And let's step back to the program if it's not a QA issue. I guess we just blew

that one out of the water. This is why I'm saying I understand that with this case it isn't an issue, but when we're doing our blind reviews, to be able to look to make sure these programs are doing what they're supposed to be doing, I agree with Doug on this that this was caught but maybe a periodic check or whatever to be able to make sure that -- because my understanding is that a lot of these are being done remotely from other areas, accessing these programs, and just to kind of make a quality to be able to make sure that everything is running as it should be for this.

MR. STIVER: Call this a lesson learned and, in the future, you know, look at that aspect.

MR. FARVER: But, I mean, in this specific instance, you know, for what we were looking at, that we came up with twice of what NIOSH did, for that year there were 25 zero cycles for a missed dose. So now you've got

25 times 20 millirem, so you're looking at -- what's that? Five hundred millirem. So right there is 500 millirem that you kind of look at and say, okay, that's 500 millirem, we're going to have some modified factors, but I came up with 120 millirem and I didn't even add in my shielded dose yet, my deep dose.

I mean, you kind of have to get a feel for what you're doing and be able to look at these doses and see if they're reasonable. That's my opinion. I mean, I think that, especially if you're working on these doses and you're specifically working on a site, you should have an idea on what those doses should turn out to be.

MS. LIN: Doug, do you have an idea of what the dose is going to turn out to be before you actually run the dose or look at the dose value?

MR. FARVER: Just by putting the doses together that you've got 25 missed doses at 20 millirem a piece? Right there is 500

millirem. So if I'm coming up five with 120 millirem, then I'm thinking something might be off.

MS. LIN: Is that how you caught this issue?

MR. FARVER: Well, I didn't necessarily do this case.

MS. LIN: Okay.

MR. FARVER: No, we caught this issue because we picked a year, we went back and looked at it, and did a dose, you know, manually. We compared it to their doses, realizing that they used a Monte Carlo calculation, and we understand there's going to be 10 - 15 percent differences, but this was over 50 percent, so we wrote it up as a finding.

MS. LIN: Okay.

MR. FARVER: But I'm just saying, if you're working with this spreadsheet all the time at the same site, you're going to have an idea on what those doses should be based on

the parameters that are input.

MEMBER MUNN: Missed doses are so problematical. They really are. You know, you're making a claimant-favorable assumption that a dose actually was somehow overlooked, and the reality is that may be the case, but it may not be the case. It may be that there was no dose during that particular time, and it's always been problematical. But I see what you're saying, Doug, you know. You're right. You ought to have a, if you've done a half dozen of those cases for that area, you generally have some feel.

MR. FARVER: I mean, granted, it's not an easy thing to catch.

MEMBER MUNN: Yes. But --

MR. FARVER: But I'm not going to rule it out and say, oh, no, there's no way, someone would have caught that.

MEMBER MUNN: No, it's a puzzle. And added to the difficulty of the puzzle is so what do you do about it now? Can you do

anything about it?

MR. FARVER: All you would do about it now is make sure that your Vose system works on all different, you know, whether it's remotely or --

MR. HINNEFELD: Because you're using @Risk --

MR. FARVER: You better do a lot of testing.

MR. CALHOUN: Well, we use @Risk. I think ORAU still uses the Vose Monte Carlo method for all their stuff. I think Doug's point, yes, when you have a tool, you know, what kind of configurations are you going to run in the end? And it should run the same in all those configurations. I mean, that's --

MR. FARVER: I mean, that's what we've learned from that.

MR. HINNEFELD: That's what we've learned from that. Yes, I think that, if you're the dose reconstructor, when you push the button and run the tool, it seems to make

some sense to say, well, maybe spot check and see did it come out about where it should? You know, that's what you're saying.

MR. FARVER: Right.

MR. HINNEFELD: Yes, I guess I'd have to talk to some people who do dose reconstructions to see what they say about that.

MR. CALHOUN: You don't know because if there was more dose, more actual dose, your missed dose is going to go down, you know? So --

MR. HINNEFELD: Well, I mean, you'd have to know which line you're talking about and how many zeros were in there. So it would take a little looking. It's not an easy, particularly straightforward --

MR. CALHOUN: I still don't even know how it really happened. Scott, do you have anything on that? Did you guys dig any deeper? Do you know what actually happened? Is it just a function of the different,

running from different machines or different starting points?

MR. SIEBERT: Like I said, we dug into it about as much as we could, and that was our best guess as to what was happening. But as I said, it wasn't even, if I remember correctly, and, like I said, we did this, you know, three or four years ago, the values that were coming out, it didn't happen every time. It was not necessarily replicable. The error was not occurring every time, even if you were doing it remotely.

MEMBER MUNN: And that's what really and truly hits you in the back of the knees. What do you do after that?

MR. FARVER: Well, I don't know because now you don't know if you're running into outliers on your bell curve. We brought it up because it was just that large difference. That's why we brought it up.

MEMBER MUNN: Well, it's worth knowing about. Whether there's something

constructive one can do about it is a different question. I don't see any clear path for construction there.

MR. FARVER: Other than you might want to just, you know, check for --

MEMBER MUNN: Just check it once in a while, yes.

MR. HINNEFELD: Hey, Scott, when you said it wasn't replicable, did you mean that if you ran the same case in the same configuration more than one time that it would be different or that sometimes if you ran a case with the, you know -- remote running on a server, that's the issue, right? On some cases, when you did that, it came out okay, and on different cases when you ran in that configuration you got this error?

MR. SIEBERT: I can't say for sure, but I seem to recall the same person could run it and get the same low values, but another remote person could take the same input deck and get the, you know, what should be the

correct values. And I believe that is how we actually tracked it out back in 2009 because a peer reviewer had run it again and actually gotten something slightly different, actually significantly different, and then started investigating into the issue.

MR. HINNEFELD: Holy cow. I don't have the knowledge base to offer -- I'm going back to my earlier comment.

MEMBER MUNN: Well, and that's the kind of thing that drives mathematicians or anybody that mathematics routinely nuts. There's no -- repeatability is our stock in trade, and it's --

MR. FARVER: See, that's the way it should be --

MEMBER MUNN: Exactly, exactly. So when you run across something that's an item for the journal of very producible results, then you don't know how to address it.

MR. FARVER: But that was good a peer reviewer did have a different result.

MEMBER MUNN: Yes.

CHAIRMAN GRIFFON: Yes, yes.

MR. STIVER: The system worked in this case, and it was captured.

MEMBER MUNN: It's good to know. I just don't know what to do about it.

MEMBER KOTELCHUCK: This is absolutely required for the calculations. They're not several -- you discussed alternative ways of getting this result. Is there only one way in Monte Carlo?

MR. FARVER: Well, they have a spreadsheet they use with their Monte Carlo calculations. We didn't do that. We did hand calculation, but ours was quite a bit different. That's what flagged it for us. I mean, I don't think there's anything that we can do about this.

MEMBER KOTELCHUCK: You can't let it lie. You can't close it. We cannot close it.

MEMBER MUNN: We can suggest that the folks who do this type of calculation in

frequent intervals check their, run through a process that tells them whether they're having this difficulty routinely. But I don't know what else you can do, other than --

MEMBER KOTELCHUCK: Well, we can go back to other cases before where we used the Monte Carlo and see about whether the people are going to, whether we can reproduce the difference or whether the difference disappears.

MR. FARVER: They looked at over 300 and they found 15 cases or so that --

MEMBER KOTELCHUCK: Oh, okay. I missed that. I missed that.

CHAIRMAN GRIFFON: Oh, yes.

MR. SIEBERT: Well, and another thing -- this is Scott. Another thing to remember, this is Crystal Ball, which we retired, you know, four years ago or three years ago.

CHAIRMAN GRIFFON: And we hope it's not happening on the new system, right?

MEMBER CLAWSON: That's the key -- this is Brad -- that it's not happening with the other ones. I guess I'll just throw my two cents' worth into this is, Scott, I think that you guys did a marvelous job and I appreciate looking at what the corrections are that you guys did when you did see an issue like this. I think the only thing that we could do is to suggest to the quality assurance people that are spot-checking some of these, to tell them to keep this in the back of their mind. That's all we're going to be able to do. But if we do see problems with these programs like that, we do just as you have done, and that is run through the programs, try to make the corrections that we have, and go on for it.

I really think, to tell you the truth, this also shows us that the QA program that has been starting into the process is doing what it should, too, because you saw an issue, you addressed it. I guess what I'm

just looking at, there's no clear cut, we've got to check what we're going to be able to do with this, but to be able to just make sure that people are aware that this glitch has been seen in other programs and to keep an eye out. And maybe if there's a spot-check you can do, check to make sure that they're doing it. That's, I think, all that we can do.

CHAIRMAN GRIFFON: Well, let me ask the broader question because you said you reviewed 300 cases and have 15 instances. But Crystal Ball, I assume, would have been used for more than 300 cases; is that wrong? You're just talking about this one --

MR. SIEBERT: Actually, it would not have been because it's only used in the best estimates.

CHAIRMAN GRIFFON: So it's only -- okay, okay. All right. So that was the universe of the cases.

MR. SIEBERT: Correct. We pulled every Crystal Ball, every EDCW tool that used

Crystal Ball.

CHAIRMAN GRIFFON: Okay. I just wanted to make sure of that. I thought there would have been a bigger population. Well, I don't know if we can take this any further.

MEMBER MUNN: Just ask that remote users be made aware of the potential.

CHAIRMAN GRIFFON: Yes.

MEMBER CLAWSON: Well, this is one of the things that the people that spot-check this, when they're seeing that, you know, it's being done remotely or something like this, it just may be to double check that we don't have another glitch in one of these systems.

CHAIRMAN GRIFFON: Okay. I think we can move on to the next one, 212.1.

MEMBER RICHARDSON: Just for the record, this is David. I've been here for a while listening and shaking my head.

MEMBER CLAWSON: I thought I heard that, David.

CHAIRMAN GRIFFON: Any comments on

that last topic, David?

MEMBER RICHARDSON: None that are productive.

CHAIRMAN GRIFFON: Okay. All right. 212.1.

MR. FARVER: Okay. 212.1, NIOSH did not consider the employee may have been exposed to other things that were reported in the CATI report. This goes back to -- let's see. The CATI report has section -- let's see what section it is. I forget what it is. Section 3 where they go through and they can check off the different chemicals and radionuclides they have been exposed to. Do you remember that block section, Mark, and then the CATI report where people just go through and check it off.

Apparently, this employee also checked off uranium, plutonium, and iodine. And the finding came because they were not considered in the DR.

Anyway, I looked at the case files,

I looked at the CATI, and that's the only place it was mentioned was just in, you know, those three check blocks. So I'm, I have a hard time criticizing NIOSH too much for that because it really wasn't based of the work activities as much as just the checking off of the blocks.

MEMBER MUNN: All it really says is it was at present --

MR. FARVER: Yes. So I would just go ahead and suggest closing this.

CHAIRMAN GRIFFON: Okay. I think we've got agreement on that, right?

MEMBER MUNN: Yes.

CHAIRMAN GRIFFON: Okay. Is 215.1 the next one?

MEMBER KOTELCHUCK: Yes, it looks like it.

MEMBER MUNN: It looks like. Let's see the response.

MR. FARVER: Okay. Let me see what I wrote. Okay. For this specific case, we

went back and looked at NIOSH's response and all the employees' data and the TBD. And for this case, for the time period of '61 to '74, we do agree with not assigning missed neutron dose based on where the employee worked, not so much based on the report which was report 33 which I think has a new number. But, anyway, not so much based on their report but based on just where the employee worked for this case.

I just want to point out that we reviewed the Y12 TBD back in 2005 and identified ten findings, which I don't believe have been resolved, and finding five of that report had concerns about the neutron dosimetry. It would have dealt with this finding.

But in this case, I don't see anything more we can do. But I just want to let you know that those other TBD findings are still hanging out there.

CHAIRMAN GRIFFON: Okay. Yes, and I

don't see it here, but I know, at some point, we talked about Y12 Work Group, which I think is non-existent right now. We don't have one, but we have these outstanding findings. So I think that comes up later in one of our comments, but this one is, you're right --

MR. FARVER: I will go ahead and close it. I just don't, I want everyone to remember those findings are still out there.

CHAIRMAN GRIFFON: Right.

MR. SIEBERT: Mark, your discussion on that is in the very next one, the observation number one.

CHAIRMAN GRIFFON: Yes, I thought it might be coming up. Okay. Thanks, Scott.

MR. KATZ: No, no, no, your findings, when --

MR. FARVER: 2005.

MR. KATZ: 2005. Okay. So there haven't been revisions since 2005?

MR. FARVER: I don't know if there have been revisions or not. I don't believe

there has.

MR. STIVER: Those findings came out of the review in 2005.

MR. KATZ: Yes, that seems like a long time ago.

CHAIRMAN GRIFFON: Alright. So, yes, observation 215, observation one actually does say that about the refer to Y12 Work Group, which I think we should mention to the Chair we need a Y12 Work Group. I don't know if there's anything else on this --

MEMBER CLAWSON: Yes, Mark? I brought this up to Jim, and he was willing to set up a Work Group. Just one of the things on this was we didn't want to miss this when the Work Group does come up.

CHAIRMAN GRIFFON: Sure, all right. So he's on top of it. Alright. And observation one then, is there anything else with that? I think that was the main thing, right? --

MR. FARVER: Yes. Really,

observation one just went back and cited some findings, one and two, from that Site Profile review.

CHAIRMAN GRIFFON: From the matrix. Yes, yes, okay.

MR. FARVER: Should we just keep that open, or what do we want to do?

CHAIRMAN GRIFFON: I think if we are referring it, you know, we're going to set up a Work Group and it will be handled in the Work Group. So we don't have to keep it yellow.

MR. FARVER: Okay.

CHAIRMAN GRIFFON: It will be handled in the Work Group.

MR. FARVER: I didn't make it yellow.

CHAIRMAN GRIFFON: Somebody did, though. It can be closed for our purposes and referred to the non-existent Y12 Work Group but soon to be established. The Work Group formerly known as Y12. We won't get into

that. Okay. Alright. I don't see -- there we go. 218, observation one, is that the next? Oops, all right. I missed one.

MEMBER MUNN: Observation four, where we turned polonium into lead.

CHAIRMAN GRIFFON: Oh, yes.

MR. SIEBERT: Don, if you'd like, I'll cover that one for you, if it's all right.

MR. FARVER: Sure.

MR. SIEBERT: The initial issue was that when we ran CADW, the polonium doses, when we initially ran them in the dose reconstruction, were higher than when SC&A went to replicate them in their assessments. And the question was what was the difference in CADW, why was it giving us different values? And we've addressed that before, the fact that between those time periods we determined that this is a non-metabolic cancer, so you used the highest non-metabolic organ. We determined that bone surface was

initially in the list of non-metabolic organs, and it should not have been. It's a metabolic organ. So it was actually giving us larger doses in that list of non-metabolic organs. It was always the highest non-metabolic organ.

So once we removed that out, because it is not a non-metabolic, the doses obviously dropped for all the highest non-metabolic organs. Wow. I just used the metabolic a whole heck of a lot.

MEMBER KOTELCHUCK: And you said it quite well.

CHAIRMAN GRIFFON: In one long sentence, yes, yes.

MR. SIEBERT: So that's the generic issue that's been addressed here. The additional question that came out last time, which I wanted to address, is because of the second bullet that we had there, there was a question about what happens when the doses go up instead of down in CADW. Unfortunately, when I looked back at this, it was just an

over-exuberance of cutting and pasting on my part. That second bullet should never have been there because it actually refers to lead 210, as opposed to polonium 210. The polonium 210, at the very beginning of it, is a misprint.

I pulled this from the document that we keep of updates to CADW, so we keep a list of what's been updated in CADW. Unfortunately, that said polonium at the beginning, and it really is lead-210, which makes sense because it's talking about progeny and independent and mixed kinetics.

So that second bullet should have never been in there. But since it was there, it brought up the question at the end what are we doing in cases where CADW has increased doses? And the bottom line is we are looking into the point -- we have never had a PER on that process so far, but we are looking into the possibility of doing that, along with DCAS.

MR. FARVER: Okay. A little bit of background how this came about. When we were reviewing this case, we went and used the parameters for the intake and solubility, put it into the CADW program, and it came out with a dose that was about six times lower than the dose that NIOSH had listed in their dose reconstruction, which makes you go hmm.

And so we started looking and we found out that we were using the version 5.04, and NIOSH was using 6.02. And then we wondered, well, why is there a difference between versions, and that's what brought up the whole issue because it was just, you know, being off by a factor of five or six was more than we would expect. But that's how that came about.

CHAIRMAN GRIFFON: And, Scott, you say you are checking old cases?

MR. SIEBERT: Well, we presently are not because our client has not asked us to do --

CHAIRMAN GRIFFON: Oh, right, right, right. I mean, it says in here --

MR. FARVER: NIOSH is reviewing a need for a PER for this issue.

MR. HINNEFELD: Expect me to say something intelligent about this. Everybody is saying when have you ever said anything intelligent?

CHAIRMAN GRIFFON: This is in cases where you're overestimating the doses? --

MR. CALHOUN: I think what I heard him say is this is when cases go up, and we've never done a PER for that, you know. We're not going to pull money away.

CHAIRMAN GRIFFON: Exactly.

MR. HINNEFELD: How about Scott, Grady, and I talk about this some time, and maybe it will make some sense to me because right now it doesn't make sense to me.

MR. FARVER: Okay, that's fair.

MEMBER MUNN: All right. So you'll continue to review --

CHAIRMAN GRIFFON: Yes, fair enough. Okay. 218, observation one. And, again, if we set up a Y12 Work Group, these will go to the Y12 Work Group. So we can just, there's no further action. I think it's a referral, and that's it, right?

MR. FARVER: What one was that? I missed --

CHAIRMAN GRIFFON: 218. The same thing with --

MR. FARVER: So we're just writing those as no further action?

CHAIRMAN GRIFFON: Yes. The same thing with two, observation two. And then four, this one says SC&A will follow up on this issue, so that's a little different, I think.

MR. FARVER: Yes. I think I have something in here, as soon as my computer comes back to me.

MEMBER KOTELCHUCK: We still have 10 through 13 on the agenda.

MR. KATZ: Oh, yes, then you can go.

MR. CALHOUN: We've still got three hours, guys.

MEMBER KOTELCHUCK: I have a 6:00 appointment.

MR. STIVER: Technetium-99, coworker data used. Monitored employees may not be appropriate or claimant favorable through 1988, a period that includes this EE's work period. And we were to follow up on that issue. Doug's computer is hung up at this point.

MR. FARVER: It's spinning.

MR. CALHOUN: So are we looking at 218, observation four?

MR. KATZ: Is it online, or is this just on your hard drive?

MR. FARVER: It's just on the hard drive.

MEMBER CLAWSON: So which one are we looking at now?

MEMBER MUNN: The very last one, the

bottom of the barrel.

CHAIRMAN GRIFFON: Two-eighteen, observation four.

MR. KATZ: Observation four.

MEMBER CLAWSON: Two-eighteen, observation four. Thank you.

CHAIRMAN GRIFFON: Yes, yes. We're not disconnected, just a little radio silence here.

MR. FARVER: It's a good thing I sent this back and had it fixed. Yes, the blue screen of death.

CHAIRMAN GRIFFON: Doug, do you want a few minutes? We can take our break now.

MR. FARVER: Sure.

CHAIRMAN GRIFFON: I was trying to finish the matrix and then take a break.

MEMBER KOTELCHUCK: Well, this is the last one.

CHAIRMAN GRIFFON: Let's take ten minutes, and everybody go get some caffeine and come back.

MR. KATZ: Okay. Ten-minute break.

(Whereupon, the above-entitled matter went off the record at 1:57 p.m. and resumed at 2:07 p.m.)

MR. KATZ: We're back from a short break. Brad and David, are you still with us?

MEMBER RICHARDSON: Yes.

MEMBER CLAWSON: This is Brad. I'm back.

MR. KATZ: Great. Okay, then.

CHAIRMAN GRIFFON: All right.

MR. FARVER: Okay.

CHAIRMAN GRIFFON: Is your computer working again?

MR. FARVER: Yes, and it's kind of like a, no, never mind. That observation is not necessarily applicable even to this case because you can see that, in NIOSH's response at the bottom there, it did not have any appreciable dose while at K-25. This person worked at several sites.

The observation refers to K-25, and

it is part of our review from the Site Profile. So it's basically number six from the Site Profile review that makes this statement about the coworker data up through 1998, we had some concerns about it. We can go ahead and close this.

CHAIRMAN GRIFFON: You can close this case, picked up in the Site Profile review.

MR. FARVER: Yes.

CHAIRMAN GRIFFON: Alright. That's great. Now we're on to the other matrices, right? And I guess we should start off with the Savannah River one? it's on the agenda. I may need some help here because I don't know if I have the newest matrix that I sent out to everyone because I had it on my other work computer and I don't think I sent it to myself. So if someone can just tell where we're starting?

MR. CALHOUN: Do you need it?

CHAIRMAN GRIFFON: Yes. Can someone

--

MR. CALHOUN: Could I email it to you?

CHAIRMAN GRIFFON: Yes.

MR. CALHOUN: Is this the one that says NIOSH update, March 2013; is that the end of this name? That's the one I got. I don't know how I got it but --

CHAIRMAN GRIFFON: I should have one named as the last meeting date, the February --

MR. SIEBERT: Grady, yes, that is the last one.

MR. CALHOUN: Is it?

MR. SIEBERT: The one that Mark sent out with an addition of March 2013.

CHAIRMAN GRIFFON: Yes. So if you can --

MR. CALHOUN: Which email address should I send it to you?

CHAIRMAN GRIFFON: The csb.gov.

MR. CALHOUN: Okay.

MR. FARVER: According to my notes, the last time we dealt with the Savannah River was back in August of 2012. And we ended at 277.4.

CHAIRMAN GRIFFON: No, no, no, we dealt with them in February. We discussed a few of them in February. Not many.

MR. FARVER: Did we?

CHAIRMAN GRIFFON: Yes, and that's what --

MR. FARVER: Okay. Maybe that's pre-February notes.

MEMBER KOTELCHUCK: 321 I got.

MR. CALHOUN: I'll send it to --

MR. KATZ: He doesn't have access to it.

MR. HINNEFELD: What's the date when we got this?

CHAIRMAN GRIFFON: What time do you have to go, John?

MEMBER POSTON: They moved it up an hour, so I probably should leave about 3:15.

MR. FARVER: Three-oh-two is where we ended in February.

MR. CALHOUN: Is this something I can't send to a non-government thing? Let's see. Okay. Well, then John is out of luck.

MR. STIVER: That's fine.

CHAIRMAN GRIFFON: We'll read them out loud the best we can.

MR. CALHOUN: I don't know if I got that from Beth or if I got that from --

MR. HINNEFELD: It came from Beth.

MR. CALHOUN: Did you find it for you, Stu?

MR. HINNEFELD: Beth sent it on March 21st it looks like.

MR. CALHOUN: Do you need it, too?

MR. HINNEFELD: I've got it.

MR. CALHOUN: You got it?

CHAIRMAN GRIFFON: Well, now SC&A is going to update these things. So I used to do it all, and that was ridiculous. I mean, I got a memory stick, if you want to --

MR. SIEBERT: Just so everyone knows, the only change from when Mark sent out what's in the one that has NIOSH update in March is one single response. So if we want to talk around that, that's not a huge problem.

MR. FARVER: Okay, sounds good.

CHAIRMAN GRIFFON: Did you send that, Grady? Oh, great, yes, I got it.

MR. FARVER: I don't think there was much difference.

CHAIRMAN GRIFFON: Yes, probably not much difference.

MR. FARVER: I think it was just one or two responses.

CHAIRMAN GRIFFON: Yes, we didn't get very far, but we did do a little.

MR. FARVER: Oh, I mean, that we stopped at 302 in February, but the new matrix that Beth sent out only has one change to it.

CHAIRMAN GRIFFON: Okay. So where

did we leave off, though?

MR. FARVER: Three-oh-two is what I had in my notes. We finished that.

MR. STIVER: March 2013 update from DCAS, 280.2.

MR. FARVER: Correct. They did an update on 284.2.

CHAIRMAN GRIFFON: Okay. So should we start there, 280.2, and describe it as best we can so John has a sense? This is a shallow dose question.

MR. SIEBERT: Doug, if you'd like me to, I can probably --

MR. FARVER: Yes, I think this is the 30, 20 keV issue or something like that.

MR. SIEBERT: That's exactly what it is.

MR. FARVER: Go ahead, Scott, if you've got a --

MR. SIEBERT: Okay. This came down to the values that were in the TBD that were less than the 30 keV photon energy bin were

not the values that were used in the dose reconstruction because the individual was in the plutonium areas. And when we have shallow dose, when the individual is in the plutonium areas, we use actually the 20 keV photon DCFs. And there was just a lot of discussion back and forth that it wasn't well referenced in the dose reconstruction report when we said less than 30 keV, whether we were really talking about the less than 30 keV out of the TBD or the plutonium special less than 30 keVs that are in OCAS-IG-1.

So as you can see from the response that I added this week or last week, we are just going to, rather than wait for a TBD update, we're going to put in the Savannah River template clarifying language that states that when we're using, when an individual is in the plutonium areas, the less than 30 keV photon DCFs are actually the 20 keV photons that are coming out of OCAS-IG-1. Just clarification documentation is all it is.

MEMBER MUNN: Okay.

MR. STIVER: Eventually, this will go into the TBD, as well?

MEMBER MUNN: Eventually.

MR. SIEBERT: Well, I would assume that there will be a statement in the TBD to reference back to OCAS-IG-1 for the plutonium areas. That would be my understanding.

MR. CALHOUN: But just to be clear, Scott, it's not changing anything we're doing?

MR. SIEBERT: Correct. It's what we've been doing for quite a while.

MEMBER MUNN: The last NIOSH comment we had was that they'd consider revising the TBD. So I guess --

MR. CALHOUN: This is SRS the TBDs.

MR. FARVER: It was just a matter of linking up the two. That was all.

MR. KATZ: Closed?

CHAIRMAN GRIFFON: I think closed, yes, yes. What are we on?

MR. FARVER: I think we stopped at

302.

MEMBER KOTELCHUCK: I don't think this was marked all the way through then.

CHAIRMAN GRIFFON: Well, I have nothing for 280, observation one, actually. To be precise, right? And then 302.1. So do we have anything to say for 280, observation one?

MEMBER MUNN: That's what we just did.

CHAIRMAN GRIFFON: Did we do that? I didn't think we did observation one. I thought we did 280.1.

MEMBER MUNN: Oh, 280.1, that's closed.

CHAIRMAN GRIFFON: Yes. Now observation one --

MEMBER MUNN: Oh, you're saying 281?

CHAIRMAN GRIFFON: Observation one. Sorry. So NIOSH says they were looking into this, right? I'm not sure when that was but --

MR. CALHOUN: I can't add anything to what's in there. I don't know.

CHAIRMAN GRIFFON: We can hold it open. I just want to make sure we're clear of what the action is, if we have it in a --

MR. FARVER: Okay. For observation one, the DOE record for this case included a PER for the individual case Evaluation Report. This report indicates that the case may be affected by the PER related to OTIB-49 and exposure to highly-insoluble Super S plutonium. In the DR review, there's a statement that there's no substantial change in the previously reconstructed dose because the plutonium 239 intake method used for this case, i.e. your analysis, is not affected by the presence of highly-insoluble forms of plutonium.

We reviewed the guidelines for OCAS PER 12 and revealed that the DR may not be affected by the presence of Super S, but not for the reasons given in the PER letter. In

this case, the cancer was cancer of the prostate, and the internal doses were determined using a hypothetical method, rather than the bioassay data. Therefore, this case is not affected by the guidelines concerning exposure to highly-insoluble plutonium. So it still was not affected, but it was not for the reasons that the letter that was in the case file said.

MEMBER KOTELCHUCK: Explain why you were using hypothetical rather than --

MR. FARVER: I wasn't using hypothetical. The dose reconstructor was.

MEMBER KOTELCHUCK: Okay. Rather than --

MR. CALHOUN: I don't have a case number in front of me, so I don't know what kind of cancer it was.

MR. FARVER: Prostate.

MR. CALHOUN: Okay.

MR. FARVER: But that's what that finding and observation involves, just that

the letter that was in the file did not seem to be consistent with the OCAS, the PER 12 criteria. Well, I'll go back and look at it.

MR. CALHOUN: Yes. I'm trying to write that on here but my Microsoft Word is not being very good to me right now.

MR. HINNEFELD: I think the HP marked it wrong. I mean, the Evaluation Report gives several reasons why, several possible reasons why that PER wouldn't affect this case outcome. One of those is that it used a bioassay, urine bioassay, and since it would measure what's circulating in the blood stream, and this is an internal that was circulating there. So it wouldn't need to be changed. Presumably, it was diagnosed during his employment, you know. So that's one reason why you wouldn't, why it wouldn't change --

MR. FARVER: They would mark a box on the form, and then that would generate a letter or something like that.

MR. HINNEFELD: Yes.

MR. FARVER: Probably something like that, the wrong letter, got generated.

MR. HINNEFELD: Another one is that we didn't use any bioassay. What we used was this hypothetical overestimating, or that was an early tool that we used for Savannah River when we were just trying to get some claims moving and we had this overestimating Savannah River intake that we don't use anymore but we used for a while. And that's what was used for this case is what I'm saying. So the documentation of the PER then is marked the wrong reason why it wasn't applicable. Okay.

MR. FARVER: A long time ago, August 2004.

MR. HINNEFELD: I don't know if we'll ever know why the HP --

MR. FARVER: Oh, you know, we can make that a finding. We just wanted to bring it to your attention that it just kind of looked a little odd to us.

CHAIRMAN GRIFFON: So recommending to -- yes. Alright.

MR. KATZ: Now we're on 302?

MEMBER MUNN: This is just to be incorporated in the new revision. The guidance is, reference guidance in TIB-6. Provide anticipated revision date, December 31st, 2013. I'm getting no response.

MR. FARVER: Oh, okay. All this to say is to, that the fractions that are in the Savannah River TBD were not the same fractions that they used. They used fractions from TIB-6, energy fractions. And all we're saying is link those two together in your guidance so that you're consistent and don't have two separate distributions.

MR. CALHOUN: Like I said, I know all of the SRS TBD sections are either very close to done or done, so I'd have to go back to look to see what they've done. I mean, I think we're going to have to, I can't say close or I can't tell you exactly what we've

done on this one. And, unfortunately, that's going to be a lot of the answers on these, I think.

MR. HINNEFELD: Yes. We're going to have, not only on this question but on the one we just talked about with the DCS for the less than 30 keV. That's another issue that should be clarified in the Site Profile, so we need to make sure that anything in here that speaks about ambiguity in Site Profile, we need to --

MR. FARVER: Needs to be incorporated.

MR. HINNEFELD: -- in this round of revision for the Site Profile.

MR. FARVER: But that's one and two are about here, just relating these energy fractions since they're consistent. And we're going to give that to NIOSH to look into?

MEMBER KOTELCHUCK: The 100 percent is for 30 to 250. I understand the 25/75 split, but I don't see what the 100 percent is

used for.

MR. HINNEFELD: Let's see if I can cover this a little bit. The early badge had a filter over what we would consider the open window, right? Isn't this where this came from? So that if you had a low energy photon exposure, chances are the open window was actually shielded and it really wasn't open. So you don't really have a way to measure anything in that. I don't know how we arrived at 100.

MR. CALHOUN: I don't think that, I don't think that, I don't know if that's a typo or not. That would be doubling the dose.

MEMBER KOTELCHUCK: Yes, that's why I was asking. I couldn't figure out what the 100 percent --

MR. CALHOUN: Yes, I don't get that right there. I think maybe that we used 100 percent of the less than 30 for the beta dose. What we would typically call the open window dose, we just assume that it's 100 percent

less than 30 keV photons, but we wouldn't double it and assume twice. But, Scott, chime in here if you're smarter than me on this one.

MR. SMITH: This is Matt Smith with ORAU Team. This is a portion of non-penetrating dose. In other words, open window minus shielded quantity. That quantity we're calling low-energy photons.

MR. CALHOUN: But I don't know if you can see the response there. It looks like it says use 100 percent for less than 30 and 30 to 250.

MR. SMITH: I suppose the clarification could be 100 percent of the non-penetrating quantity would be attributed to less than 30 keV photons.

MR. CALHOUN: Right. Yes, that's what I thought.

MR. FARVER: Oh, okay.

MR. SMITH: And then the deep dose, in other words the shielded portion would be, again, 100 percent. That's where they did the

30 to 250 keV.

MR. CALHOUN: Right. Okay, got you, got you, got you.

MR. FARVER: Okay. As opposed to what the TBD says is to take 25 percent --

MR. SMITH: Right.

MR. FARVER: -- deep dose --

CHAIRMAN GRIFFON: Of your photon dose.

MR. SMITH: The TBD is saying, in general, you know, the criteria of what you would measure if you came in with a gamma spectrometer would be kind of a 25/75 split. But when it comes to using the dosimetry data, that OCAS-TIB-6 is what we follow.

MR. FARVER: I just want it all to match up because just like you reading that there, 100 percent less than 30 and --

CHAIRMAN GRIFFON: Okay. So --

MR. CALHOUN: Well, one and two are both definitely not --

CHAIRMAN GRIFFON: All right. So

can we move to 302.3?

MR. FARVER: 302.3.

CHAIRMAN GRIFFON: I guess we can.

MR. FARVER: Fission products. Fail to assign this dose from all potential fission products. I believe we covered this several times before, and, in our response, I say I believe we have covered this several times before. No. SC&A recommends closing this finding, as it's previously been resolved. So it's one of these ongoing ones we've had for quite a while having to do with the radionuclide chooser and so forth.

CHAIRMAN GRIFFON: Right, right. And what's the -- we've closed -- yes.

MR. FARVER: We've closed it before, so we'll close it again.

CHAIRMAN GRIFFON: We'll close it again. All right. 302, observation one.

MR. FARVER: Why does this look familiar?

MEMBER MUNN: Well, it says no

action.

CHAIRMAN GRIFFON: These are SC&A's proposals, right? Is that that column?

MR. FARVER: Yes, that's for our proposal. We like to say that for a lot of them.

CHAIRMAN GRIFFON: That's the way we did this matrix. Remember? We asked the SC&A and NIOSH to get the other, make a recommendation to the Subcommittee.

MEMBER MUNN: These are not records of our actions. Okay.

CHAIRMAN GRIFFON: The final column would be records of NIOSH. So you're reviewing, Doug?

MR. FARVER: I was trying to figure out what the observation was.

CHAIRMAN GRIFFON: That's a good starting point.

MR. FARVER: Yes.

MEMBER MUNN: Since it wasn't applied in this dose reconstruction, it should

have been removed from the draft to more accurately reflect what was done.

MR. STIVER: It looks like observations one, two, and three are all related to these ongoing changes in the TBD.

MEMBER MUNN: All related to incorporating TIB-6 into the TBD, except for number three. Number three says the finding was captured in the Site Profile review, and no response is necessary. So we can close that one.

CHAIRMAN GRIFFON: So it's been moved to the TBD review or the Site Profile review.

MR. STIVER: Yes, Site Profile review for three and four, observations three and four, so those two can be --

CHAIRMAN GRIFFON: Observations three and four we can put referred to SRS Work Group, right?

MR. STIVER: Right.

CHAIRMAN GRIFFON: Yes, that's what

we've done before. And one and two, you're saying no action because NIOSH is doing an update, right? Within six months or eight months, six months?

MEMBER MUNN: It says six.

CHAIRMAN GRIFFON: Six months. Sorry.

MR. CALHOUN: I'm going to check, I'm going to check our plan to find out where we actually stand on the external. But right now we're hinging a lot of this on the SEC that's been processed.

CHAIRMAN GRIFFON: Right.

MR. HINNEFELD: Yes, there are discussions coming on.

MR. STIVER: So are we up to date on the --

CHAIRMAN GRIFFON: Well, I'm just trying to figure out, so what are we doing with observations one and two? Are we going to follow them on this Subcommittee? I mean, I think NIOSH is going to do the revisions.

It's just a matter of timing, right? Yes. I just don't know where we should, where it's best to file it, with this case or with the -- I mean, it might be even better for SRS Work Group -- yes, because they're going to revise the profile, right? So, yes, I think it's easier to keep it all together.

MR. STIVER: A place to track it.

CHAIRMAN GRIFFON: Yes. And then we can ultimately close this case, right? So I say refer to SRS Work Group for one and two and three and four, right?

MEMBER MUNN: Well, three and four is --

CHAIRMAN GRIFFON: It might have already been referred to the Work Group, I think, right? It says finding is captured in the SC&A profile review. It's on the, it's still in the Site Profile review.

MR. STIVER: So it would still be on the purview of the Work Group.

CHAIRMAN GRIFFON: And I don't think

those were closed out yet because we're looking at SEC --

MR. STIVER: I don't believe they are.

CHAIRMAN GRIFFON: Right. Yes, we can close it here but referral to the Work Group, right? That's all, yes. Okay --

MR. STIVER: I'm just frantically typing here.

CHAIRMAN GRIFFON: -- 303.1?

MR. HINNEFELD: Yes, I should probably mention that I don't know that we're going to have to be that --

MR. SIEBERT: But, Mark, this is Scott. For 303, I just want to point out, if you remember, we had a grouping A for the 10 through 13 set --

CHAIRMAN GRIFFON: I see that.

MR. SIEBERT: -- before we went to site specific. It was actually handled in that grouping A under that matrix, and it was all, I just checked to verify, all of them

were marked as no further action, so 303 is actually complete.

MR. STIVER: Yes, Scott is right. That was the one SRS case that was in the group A the first time we tried to look at them and the different types of groupings before we went to a site specific --

CHAIRMAN GRIFFON: Right. And the Subcommittee closed those out, too; is that what you're saying?

MR. STIVER: Yes, we --

CHAIRMAN GRIFFON: Okay, alright. So maybe just refresh the thing to show that, right?

MR. FARVER: Where are we at?

MR. STIVER: 303. We're on page 18 of 41, 12 set, 303. This was the only SRS case that was in the group A review.

MR. FARVER: What happened to 303 one and 303 two?

CHAIRMAN GRIFFON: Well, he's saying that all of 303 was closed.

MR. STIVER: Remember, we --

MR. FARVER: Oh, oh, okay. I see --

MR. STIVER: Yes, so those have all been closed out, all the findings in 303.

CHAIRMAN GRIFFON: So we should just update it to reflect that the Subcommittee closed them. Yes.

MR. STIVER: Just make a note that all the findings and observations associated with 303 have been --

CHAIRMAN GRIFFON: Taking Scott's word for that, yes.

MR. STIVER: -- addressed.

CHAIRMAN GRIFFON: Okay. Then we go up to 304.1?

MEMBER CLAWSON: I'm sorry. This is Brad. I was having a hard time following everything. So what did we do with these? Are they closed or --

MR. KATZ: Closed. So, Brad, all of 303 is closed.

MEMBER CLAWSON: Okay. I just,

everybody was kind of talking over each other, and I heard closed, and I just wanted to make sure. Thanks.

MR. KATZ: Thanks.

CHAIRMAN GRIFFON: So we're up to 304.1 then. And SC&A's recommendation then is this is a Dose Reconstruction Subcommittee issue. You're deferring.

MR. STIVER: These were the ones that we felt we could not address just by, you know, conversing one on one, but it really warranted discussion within the Subcommittee.

CHAIRMAN GRIFFON: Sure, sure.

MEMBER KOTELCHUCK: Cycle data.

CHAIRMAN GRIFFON: Can you go through the explanation of the cycle data and --

MR. FARVER: I'm trying, but I'm trying to find 304.

CHAIRMAN GRIFFON: I heard David is asking about it.

MEMBER KOTELCHUCK: Right.

MR. FARVER: Yes. Okay. Over in the fifth column where it says from OCAS-TIB-6, when cycle data which is like a dosimeter cycle, quarterly or --

MEMBER KOTELCHUCK: Okay. Okay.

MR. FARVER: -- we'll put in as a zero -- or year information is missing from the SLHP3 form, the dose reconstructor should evaluate the following criteria, and that's taken from TIB-6.

MEMBER KOTELCHUCK: Thank you.

MR. FARVER: And then down there you can see in bold where it says discussion of the method used for the missed dose and the rationale for why it was included or excluded shall be included in the dose reconstruction in the report. So we believe the method used by NIOSH for this case was not claimant favorable and is not consistent with the method used to assign dose for unmonitored employment period.

Okay. The assignment of missed dose

for unmonitored periods of employment, which include 1976 and 1983 to '85, is not claimant favorable and inconsistent with the method used to assign dose for other unmonitored employment periods. NIOSH assigned a coworker dose for '52 through '54 and '71 to '72 when the records indicate the employee was not monitored. Since the employee worked as an instrument mechanic from '55 until the end of his career, SC&A believes that the employee should have been assigned a coworker or unmonitored dose for '76 and '83 through '85.

In other words, we're saying the job didn't change, so if you do it for one period you should do something similar for the other periods. This would have resulted of an additional dose of 186 millirem using the 50th percentile coworker model or a 1.358 rem using a more likely 95th percentile model, which we then discuss in the next finding, 304.2.

So there's still issues. One, we think they should have assigned a coworker or

a monitored dose for other periods than what they did. And, second, we believe it probably should have been a 95th percentile instead of a 50th percentile, and that goes into 304 that they did not know if they used the appropriate coworker model.

MR. STIVER: Yes. So 304.1 and 304.2 are related to each other, or should they have used a coworker model for missed dose and then one percentile for distribution to select.

MR. FARVER: And the reason I kind of kicked it back to the Subcommittee was, you know, I'm not sure I'm going to get anywhere talking to Scott about this because, you know, it's pretty clear how they look at this, and I read TIB-6 that they should have, if you're going to do that then you better include your justification. Now, we just didn't understand why they treated the two instances separately, and, you know, they give an explanation.

CHAIRMAN GRIFFON: Scott, do you

have anything to add in on this?

MR. SIEBERT: Well, I will say the reason they were handled differently is because the records are different during those time frames. OCAS-TIB-6 was specifically written to deal with the time frame of '73 through '88, knowing that their records, they did not record zeros, they just left them as blanks during that specific time frame. So when you look at this individual's records, there are years that show up in his annual dose report that clearly they show as blank instead of zeros during the '73 to '88 time frame. And then specifically '76, '83, '84, and '85, the years are there in the annual report. There's no numbers listed, no zero, no number, no nothing. The lines are there, but there's just not an entry. And based on the way that Savannah River was doing their records, they were not reporting those zeros. So OCAS-TIB-6 was written to cover that time frame that if you see that that likely the

individual was being monitored, and there was nothing greater than detectable, so we fill that time frame as if they were fully monitored with dosimeters and give them missed dose for those missing time frames. That's the whole point of OCAS-TIB-6.

The reason different years, the years outside of that were handled differently were because they're outside of that time frame, and OCAS-TIB-6 is written specifically for '73 through '88. So that's why they're handled differently.

CHAIRMAN GRIFFON: So in other words, you know that you have documentation saying that the practice during that time period was to leave blank when they were were monitored and below detectable?

MR. SIEBERT: Correct.

CHAIRMAN GRIFFON: Okay.

MR. HINNEFELD: This is Stu. Scott, what other years, besides the years that you mentioned in the '73 to '88 period, were there

other years when the individual's record did not include any zeros?

MR. SIEBERT: Yes, there were, '52 through '54 and '71 through '72, there were no values listed for those years either.

MR. FARVER: And those were treated as unmonitored.

MR. HINNEFELD: So he was an instrument mechanic from '54 forward; is that what we said?

MR. FARVER: I believe so. His whole career. His job, I do not believe, changed.

MR. HINNEFELD: Okay. So the thought process here is from '54 through '70 he was an instrument mechanic and he was monitored because we got --

MR. SIEBERT: Well, let me back up a second. I'm sorry. I'm looking at the dose reconstruction report. And, actually, for '53 and '54, he was working for a painting subcontractor. So we assigned coworker doses,

along with the CTW construction worker values.

MR. HINNEFELD: Okay. So then '55 he became an instrument mechanic?

MR. SIEBERT: That's what I see, yes.

MR. HINNEFELD: Okay. And he was monitored?

MR. STIVER: Presumably monitored.

MR. HINNEFELD: Well, apparently he was. We've got a record, right? From '55 forward?

MR. SIEBERT: Right. '54 through '70 we have values for every year.

MR. HINNEFELD: Okay. So he was monitored during those years. '71 and '72, based on what we see here, he was not monitored because that's outside of the TIB-6 period, so we don't have anything in this record.

MR. SIEBERT: Correct.

MR. FARVER: So we've got coworker dose.

MR. HINNEFELD: So what we've established now is a pattern of an instrument mechanic who some years is monitored and then other times, because of assignment, is taken off the monitoring list.

MR. FARVER: And you assign coworker.

MR. HINNEFELD: And you assign coworker. I know. I'm just trying to figure out how they --

MR. FARVER: Okay.

MR. HINNEFELD: Okay. So now we enter the '73 through '88 period when, for most of those years, he's monitored because he have his records, but there are those handful of years when there is nothing in his record which can be interpreted as either he wasn't monitored or he had all zeros.

MR. FARVER: Yes.

MR. HINNEFELD: Okay.

MEMBER KOTELCHUCK: Now, am I interrupting? Sorry.

MR. HINNEFELD: So what I'm getting at, and I think this is probably where Doug is coming from, is that we have a pattern of an instrument mechanic who some years is monitored and some years is not.

MR. FARVER: Yes.

MR. HINNEFELD: And so when you go to the TIB-6 criteria of looking at this guy's work history and decide what was, you know, what were the possible things that were going on during '73 to '88 when we don't know if he was monitored or had all zeros. We have already established that, at least for a few years before that, Savannah River would have instrument mechanics who were not monitored. So you would say that a coworker dose, if they were not monitored at all, then you would want to use a coworker dose, not a missed dose.

MR. FARVER: Yes.

MR. HINNEFELD: Okay. So that's where you're coming from.

MR. FARVER: Yes.

MR. HINNEFELD: So is there other information? I mean, does the external or does the bioassay record give indication of whether his work activity would allow you to determine, well, he probably was monitored and had all zeros because he was leaving bioassay samples or he was leaving bioassay samples when we got records and then he was leaving bioassay samples when it's blank, so he probably wasn't monitored. Is there anything else to go with it, in addition to what OTIB-6 -- see, OTIB-6 is a sort of permissive. You are permitted to interpret a blank dosimetry record as monitored with all zeros, but it's not instructive to say that that's definitely what it means. There's other things that you're supposed to consider. So, Scott, are there other things, other pieces of information that may prove to us the conclusion that he was monitored, he was likely monitored?

MR. SIEBERT: I'm flipping through

his bioassay as we speak.

MR. HINNEFELD: Okay.

MR. CALHOUN: Well, they make reference to a relatively low dose, so without knowing the case number I can't look through it.

MR. HINNEFELD: Yes.

MS. LIN: I think we're talking about this person's employment history --

MR. HINNEFELD: I'm sorry. I'm normally better than that.

MS. LIN: I know you are.

MR. HINNEFELD: Yes.

MR. SIEBERT: No, his bioassay monitoring ends in 1960.

MR. HINNEFELD: Okay. So for many years when he was monitored, when he was externally monitored he didn't have bioassay data also. So that's not going to be helpful.

MR. FARVER: It looks like tritium was assigned for quite a few years, from '54 on it looks like. Well, it says he was not

monitored for tritium. Oh, but based on maximum internal dose estimate for Savannah River, they count that in his tritium dose. Okay. That's not helpful either.

MR. HINNEFELD: Okay. Well, let's just go on to the second part of this question because I think it might be relevant to a resolution. The second part of your question was you suggested this person have a 95th percentile coworker dose, rather than the 50th percentile.

MR. FARVER: Yes.

MR. HINNEFELD: Okay. Now, that one I don't follow because we have a person who's an instrument mechanic who is monitored for some years and not monitored for others. And, presumably, there was a decision made that, because of his assignment as instrument mechanic this year, we're not going to monitor him anymore. So why would he fit the 95th percentile profile of someone who works and is routinely exposed? It seems like that would

be an occasionally exposed person who'd be a 50th percentile coworker type.

See, in order for him to be an instrument mechanic, monitored some years, not monitored others, somebody at Savannah River decided we don't have to monitor this guy this year. Well, typically, you don't make that decision about the people who are most highly exposed. You make that decision about people who are not very highly exposed, and so they would be a 50 percenter, not a 95 percenter.

MR. STIVER: Yes, I see where you're coming from, Stu. In our response here, it seems to be kind of predicated on the notion that in '53 and '54 he was a clerk and patrolman, which would probably have less exposure potential, and then went to an instrument mechanic slot or designation later. It's sort of an implied higher exposure potential going along with that secondary job position later on and that he might have, therefore, be given the higher, the 95th

percentile because he may have been in a more highly-exposed group. But what you're saying is that, based on the monitoring record, it would appear that the --

MR. HINNEFELD: I would assume that he would not be a highly-exposed person.

MEMBER MUNN: He's still in the lower exposed group.

MR. SIEBERT: This is Scott. I also looked at his actual monitoring records when he was being monitored, and they were low exposures, much more in line with the 50th percentile in the coworker study than if you're looking at the 95th percentile. It would have been much higher than anything he got while he was being monitored.

MEMBER MUNN: So why would you put in there when he wasn't being monitored --

MEMBER KOTELCHUCK: I was wondering about what the dosimetry record was telling us about the period '73 through '82, except for '76. I mean, is there a consistency from

before '71 on the exposure data, the dosimetry data, consistency from before '71 to the '70s and actually '85 to '89 because the person worked for 35 years, so he worked up through '89 or '90. Just to get an idea, even though what you've said about the bioassays also makes sense. It kind of goes off and on, and that's what, when he goes back on is he about the same as he was before, before '70 or '71?

MR. SIEBERT: Yes. He would generally run zeros, except for he had a couple of years that were approximately 60 millirem. Then we have a '71 - '72 time frame where we don't have anything. And then '73 he goes to 50. In '74, he jumps up to 300, but from that point on, when we have data, it's around 5, 10, 20 millirem or zeros.

MEMBER MUNN: Still talking about low exposure.

MEMBER KOTELCHUCK: We are talking about, except we're talking about low exposures in that period which suggests a job

change from instrument mechanic. A lesser --

MR. HINNEFELD: A lot of instruments you can repair without --

MR. SIEBERT: And to give an example, in '74, even when he was monitored and went up to 325 millirem, the 95th percentile for 1974 is almost one and a half rem, so it still does not, it does not line up with, even when he pops up.

MEMBER KOTELCHUCK: Okay. That's helpful. So it does sound like there was change or low exposure in that period.

MR. CALHOUN: A change, but still in a low-exposure range.

MEMBER KOTELCHUCK: Yes, which would lead to coworker model.

MR. CALHOUN: At the 50th percentile.

MEMBER MUNN: Yes. He didn't go into an operator's job or anything.

MR. FARVER: The other thing I'll add to that is, if you want to do something

like that, it says a discussion of a method used for missed dose and the rationale for why it was used, included or excluded, shall be included in a dose reconstruction report.

MR. SIEBERT: Well, the dose reconstruction report does say in the missed dose section, it gives the number of missed dose badges, and it says this number was based upon the reported badge exchanges with additional cycles assigned where it appeared that zero readings were not reported and is maximized to ensure all possible instances of zero badge readings were accounted for in this dose reconstruction. But they did call out what they were doing. They may not have clearly called out exactly why they were doing it, but they did call out what they were doing.

MR. FARVER: They did call out what they were doing, yes.

MR. STIVER: I'm willing to accept that.

MEMBER KOTELCHUCK: Could I ask the lawyer? I mean, there was a remark here that we're near HIPAA, and I don't understand. You can talk to me afterward or tell us all but --

MS. LIN: I can just put you in Privacy Act violation jail.

MEMBER KOTELCHUCK: Pardon? But what was it that we were moving toward that was personal and should have been protected?

MS. LIN: So what we're talking about here -- maybe I should talk to you offline.

MEMBER KOTELCHUCK: Fine. That is fine. I didn't know how to handle it, but I want to understand.

MS. LIN: Yes. I mean, we have an obligation under the Privacy Act statute, so under the common law rubric where you protect someone's privacy -- that's not specifically, you know, included in the Privacy Act.

MEMBER KOTELCHUCK: And you'll talk to me afterward about it.--

MR. SIEBERT: We can barely hear them on the phone.

MR. HINNEFELD: It will be an offline conversation when it actually occurs.

MEMBER KOTELCHUCK: Right, okay. Thank you.

MR. KATZ: Okay. So are we closing this?

CHAIRMAN GRIFFON: Yes, 304.1 and 2. Alright. And then we have an observation for 304.

MR. FARVER: The case was reworked, and it looks like they added a year to the employment period and recalculated the PoC. And the PoC changed. The dose went from, it went up about a rem, and the PoC went from 42 to 40 percent. The PoC went down. So the dose went up, and the PoC went down. That was the observation.

MR. CALHOUN: You just need to know a lot more, like when the dose was assigned, was it changed from a later day, was it

changed closer to the time that the diagnosis was made?

MR. STIVER: You'd have to get into the innards of the IREP.

MR. CALHOUN: Oh, yes. I mean, those kind of things are relatively easy to explain as far as where the dose falls relative to the time of diagnosis because if it's within five years it basically doesn't count towards the PoC to any significant amount. But without knowing the --

MR. STIVER: The only time it's for proportionality is we're looking at a dose in a particular period of time for the same organ.

MR. CALHOUN: Yes, and what increased? Was it photon dose, beta dose, neutron dose?

MR. FARVER: We just made it as an observation to make you aware that these things happen.

MR. KATZ: Closed?

MEMBER MUNN: Closed.

CHAIRMAN GRIFFON: 329. Are we okay to move on? 329.1. So 329.1, are you looking through --

MR. FARVER: I'm trying to find it.

MR. STIVER: While Doug is looking for the details, we can at least get into it a bit. This is that NIOSH failed to assign a monitored photon dose for the years 1962 to 1966. And NIOSH responds it was a professional judgment based on the EE's occupation. It was assumed his risk for occupational exposure was likely limited to on-site ambient dose, as applied in the dose reconstruction.

And we replied that the EE was monitored from '63 to '65 and we didn't find any evidence of a change in work assignment for the years on the outside of that range for '62 and '66, so it was reasonable to assume that the exposure potential was similar during working conditions and in the entire time

period. And even if the EE would have been assigned a coworker dose, it would have resulted in, approximately, an additional 0.85 rem to the thyroid. We believe that an ambient dose is not appropriate for those two years on either end of the monitored period, 1962 and 1965. Take it from here, Doug?

MR. FARVER: That's pretty much what the finding says.

MR. STIVER: So it becomes a matter of judgment. There's no basis for assuming there was any difference in exposure potential. Why not just assign him the coworker dose?

MR. FARVER: Instead of ambient dose.

MR. CALHOUN: Scott, I'm going to have to rely on you on some of these because I haven't looked into them, so I don't know if you have anything else or not or if we need to go back and come back --

MR. SIEBERT: That's fine. I'm

digging as we speak here. In the dose reconstruction report, specifically in this one, we state that the EE's monitoring record -- let me make sure I'm talking toward the phone. Sorry. The EE's monitoring record reflects that they were only monitored continuously during the time frame in which she worked in the reactor facilities, 1963 through 1965. That indicates, to me, that we have a reason to believe that that's the only time that she was working in the reactor facility. I'm digging on that as we speak.

I believe it's based on the fact that those three years are the only years the individual was monitored and clearly working in the reactor areas. So the assumption made was when they were not monitored they were doing the rest of their duties, which were typist, paymaster, clerk, etcetera.

MR. STIVER: So is there any positive indication that they were not working in the reactor areas in those years or just

there's no evidence that they were? I mean, it seems like, in this situation, you want to be claimant favorable and go ahead and give them the benefit of the doubt, the higher dose assignment.

MR. FARVER: I mean, that's what I would think. If you don't have anything that says they weren't in the area, we go ahead and choose the higher of ambient or coworker.

MR. CALHOUN: I think we're probably going to have to look back at this one. I don't think we're going to make a decision right now. We can look back at medical records or something.

MR. FARVER: It's not going to swing the case one way or another for this, but it's just a matter of what do you do in situations like this?

MR. KATZ: Scott, were you going to say something else?

MR. SIEBERT: Yes, I'm looking. This individual worked three separate

employment periods: '55 through '59; well, mid '62 through mid '66; and then '80 through '95. Those middle three years are right in the center of that middle employment period. So, realistically, I can understand going either way for 1962 and 1966. The fact that there's no monitoring records, it appeared they had a reason to monitor her for those three years and did not have a reason to for the other years. I can understand that reasoning. I can also see the reasoning of saying, well, that middle period going through '62 and '66, doing coworker. I can see an argument for either one.

MR. FARVER: And so can I, and that's why I would look at, you know, which was more claimant favorable and choose the higher of the doses.

MEMBER KOTELCHUCK: But, Doug, in the SC&A response, I would prefer that you not discuss what the results would be that, well, it would add an additional 0.85 rems. That

shouldn't influence us. What should influence us is the decision that you're talking about about what we should do with those two years and that whatever happens happens. We shouldn't let ourselves be influenced by how much it will or will not be. Implicitly, the suggestion is it won't add much, and I don't want to have any implication that either it is what you say, that we should be claimant favorable and add them, or there's reason to believe that there were other job responsibilities in '62 and '66. I just, I'm urging not to put something like that in --

MR. FARVER: We have had Board Members request that we include something about how this would impact the case in our findings.

MEMBER KOTELCHUCK: One might argue a priori sometimes, that for certain instances, there's something that is trivial, whether you decide one way or the other, trivial. But 0.85 rems is not a trivial

number. I mean, I could see with medical doses or some kind --

MR. FARVER: So you would prefer if we didn't comment on how we believe it would impact --

MEMBER KOTELCHUCK: I would prefer that, yes.

MR. FARVER: Okay.

MEMBER KOTELCHUCK: Let's just say that's one Board Member preferring it. Others have asked otherwise. I just feel like we're not trying to make a decision based on what the answer will be, however it will be. We're trying to make a decision on what is based on their employment, in this case on their employment record.

MR. STIVER: And based on the process without being unduly influenced by the potential of the outcome on the probability --

MR. FARVER: My personal choice is we just write up the finding, and we tell you what we feel is wrong. We don't interpret.

Like you say, we're not going to predict what could happen or things like that. That's my personal choice, and that's what we used to do. And we had input saying that they would like us to -- I mean, we want to go through these one-on-one questions and say, well, how is this going to affect the case? And Board Members want to know how is this going to impact the case?

MEMBER MUNN: That's a very common question.

MR. FARVER: It is. And that's why we started putting something like this in here, and I'm not sure how to handle it.

MEMBER KOTELCHUCK: Well, okay. Let's just say, in this case, I would, but I'm open to trying to understand why we should put something in, but, to the extent that this is a public record. Okay. Still, we don't want to -- this seems like it might influence a decision, and I don't want it to. The employment record should. But I can't give

you guidance because, obviously, other people have asked in other situations, so let's just, let's leave it. I would not have put it in and I'll learn and we'll talk more in other cases about --

MR. FARVER: And if this comes up in cases that we go over it in our one-on-ones on the phone, mention it.

MEMBER KOTELCHUCK: Okay, okay, fine. In general, I haven't found this to be a problem. But in this one, it looked to me like --

CHAIRMAN GRIFFON: Yes. I mean, I guess the other instance where it comes up is if it's close to where they should have used the best estimate technique or something like that, so people ask, you know --

MEMBER KOTELCHUCK: Right, right. That's correct.

MR. STIVER: And in the context of the one-on-one discussions, it could very well come up.

CHAIRMAN GRIFFON: Right, right.

MEMBER KOTELCHUCK: Yes. Okay.

CHAIRMAN GRIFFON: So where are we?

MEMBER KOTELCHUCK: Well, DCAS folks will look at it again with the employment record. So really we've decided it.

CHAIRMAN GRIFFON: And that was okay.

MR. FARVER: Okay. 329.2 has to do with the medical doses. There were a couple of extra x-rays that were included in the file. And because they were outside of the covered employment period, they were not included as employment x-rays, even though the form that came along with the x-ray says that this includes a listing of all x-rays required as a condition of employment. So we kind of felt that they should have added those x-rays because their records state that they were completed as a condition of employment.

I understand NIOSH's situation. It is outside their DOL employment period. The

employment period was --

MR. SIEBERT: '55 is when it started.

MR. FARVER: Yes. I think it was '55 through '95.

MR. SIEBERT: Right. I mean, three periods, but yes.

MR. FARVER: During three periods. And then you have these outside, which were, it looks like a year before and a year after, and I don't have the exact dates to know if it was, how late in the year or how early in the year.

CHAIRMAN GRIFFON: So they were done -- do we know why they were done? Were they closeout physicals on the one hand and, coming into the facility, they wanted to do them before? Were they working somewhere else where they might have preliminary scans?

MR. FARVER: Let's see if I can find that real quick. I will try.

MEMBER MUNN: Seven months away or

one year away?

MR. FARVER: No, it doesn't say why. It says it was --

CHAIRMAN GRIFFON: I'm curious if this is something that you guys run across a lot? I mean, I would imagine, you know --

MR. CALHOUN: I know that, in the past, we've had kind of a guideline that if it's more, if a pre-employment is more than a year away, a year from the --

CHAIRMAN GRIFFON: Oh, yes.

MR. CALHOUN: -- verified employment, it doesn't count because there's probably thousands and thousands of people who got pre-employment x-rays who were never employees.

MR. FARVER: And is that in the guidance document somewhere?

MR. CALHOUN: I don't know that. I'm not sure.

MR. FARVER: Because that I don't remember reading. And if that's what you want

to do, that's okay because that would probably explain these.

MR. CALHOUN: I don't know about the past one, the one at the end of the employment period, though. I don't know that.

MR. FARVER: It looks like it was a year later.

MEMBER MUNN: One was seven months. You can understand the seven days before employment. I can see that as being a condition of employment. But I can't imagine seven months beforehand having anything to do with the requirement. That seems really out of the --

MR. FARVER: I don't even understand why it would be done at all.

MEMBER KOTELCHUCK: Oh, I mean, a general medical exam. I mean just an ordinary worker's medical exam would include an x-ray to make sure they --

MR. FARVER: A year before you employ them?

MEMBER KOTELCHUCK: I was going to say in the seven-month period before, I wonder whether there were periods in which a person would apply and then there was no job opening, and they waited until there was a job opening. And then seven months later seems a perfectly reasonable amount of time.

MR. STIVER: Conditional employment.

MR. KATZ: Grady was nodding yes.

MR. CALHOUN: Well, I think that that makes sense, that they may apply for a job and didn't get it. And then, you know, another job came open, and they got it.

MR. HINNEFELD: Maybe they were waiting for their security clearance. But, you know, we don't know what their hiring process was.

MR. CALHOUN: Outside of a verified employment by labor --

MR. KATZ: Yes, it doesn't count. So if they applied for a job and they didn't get it, that would not be a covered exposure

anyway because they would have never been a covered employee.

MEMBER KOTELCHUCK: If they applied for a job and they waited and the opening that they applied for was filled, and so they waited until the next employment, then that actually fits what you say.

CHAIRMAN GRIFFON: But you didn't, it just said that --

MEMBER KOTELCHUCK: It's not covered employment.

CHAIRMAN GRIFFON: You weren't sure if it was written policy, but you said that sometimes a year before --

MR. CALHOUN: Yes, yes --

CHAIRMAN GRIFFON: Isn't that outside of the employment period? So you were violating -- what I mean, I think it's a policy call, right? And you're not going to know exactly, but if you said one year, that would seem reasonable, I think, to most people.

MS. LIN: And isn't that the employment period determined by DOL? So if you know their starting dates or employment is this date, then that's when we start timing the exposure.

CHAIRMAN GRIFFON: Yes, but it sounds like --

MR. CALHOUN: But we have, in the past, included pre-employment --

CHAIRMAN GRIFFON: Right. That's what -- if you're doing it by policy, and you have some cut off, I think that's reasonable to have in a document, you know.

MR. FARVER: Just put it in a document somewhere that that's what you're going to do.

MEMBER KOTELCHUCK: The one a year after doesn't seem to me reasonable because the employment is over.

MR. FARVER: Well, I'm not sure why they would take one a year later.

MEMBER KOTELCHUCK: Me neither,

except a bad x-ray, if they can't read it or something. But it doesn't sound like it would relate to employment, whereas the first one does. And then claimant favorability. We've done it before and just make it a consistent policy.

MR. FARVER: Okay. And dose-wise, it's pretty insignificant.

MR. KATZ: So the resolution here is --

MR. SIEBERT: I'm sorry. One additional point on that. Doug's comment in the resolution was pointing out that Savannah River, when they gave us the data, said these are the x-rays that are a condition of employment. Their definition may not be the same as ours, so just using anything that's on that sheet may not necessarily be appropriate. For example, they do put medical x-rays that were for injuries, and those are clearly not a condition of employment. So it can be slightly different, even though Savannah River

reports it.

MEMBER KOTELCHUCK: Although the injuries would occur during the work periods, and we'd see extra x-rays. Rather than annual, we'd see a couple, you know, let's say in the summer months or something.

MR. FARVER: They were still done under a condition of employment. It was just that is not the policy that you follow for dose reconstruction because of related injuries.

CHAIRMAN GRIFFON: So is there any action on this item? That is the question.

MEMBER KOTELCHUCK: It sounds like it.

MR. FARVER: I would just ask NIOSH to check and see if it's --

MR. CALHOUN: I'm checking it.

CHAIRMAN GRIFFON: And consider whether they should codify the policy, if there is --

MEMBER KOTELCHUCK: Which is to say

that if you've given it sometimes for a year before, one should make this consistent. And I would argue that a year before is reasonable, not a year after.

MEMBER MUNN: I can't even imagine a year before as being reasonable.

MEMBER KOTELCHUCK: It's unusual. I mean, I will not deny it. But it was a good job and well paying, and I could easily understand the person really wanted to get that job and, you know, applying and calling up every couple of weeks, anything open, anything open?

MR. STIVER: Let's say a consistent policy on inclusion.

MR. FARVER: NIOSH will consider including a written policy on pre-employment exams. And then you can look into it and --

MEMBER KOTELCHUCK: Right. And you'll make a policy.

MR. FARVER: And next meeting, you'll come back and we'll probably be able to

close it.

CHAIRMAN GRIFFON: Sounds good. 330.1. It's almost 3:30 on the clock. 330.1.

MR. SIEBERT: This is Scott. I'm sorry. I want to pop back to that x-ray one we were just talking about. After a little bit more digging, that one-year requirement information is in Procedure 60 for best estimates.

CHAIRMAN GRIFFON: How does it read, Scott? I'm just curious.

MR. SIEBERT: In Procedure 60, Section 5.2, best estimates, the general philosophy for a best estimate approach is to assign dose from all eligible x-ray procedures. However, some x-rays should be excluded from a best estimate approach. For example, pre-hire and re-hire procedures more than one year before DOL verified employment should not be included.

CHAIRMAN GRIFFON: More than one year. Okay. So within one year is included.

Okay, all right.

MR. CALHOUN: So was that one more than one year outside of the employment, do you know?

MR. SIEBERT: It was seven months.

MR. CALHOUN: Okay.

MR. SIEBERT: But I just wanted to point that out because I think that clears up that, I think that closes that one thing, and we probably should have done that first one and not the last one.

CHAIRMAN GRIFFON: Perfect.

MR. SIEBERT: That's Procedure 61.

CHAIRMAN GRIFFON: You captured that, Doug, that --

MR. FARVER: Procedure 61.

CHAIRMAN GRIFFON: You guys are both taking notes? I'm just pointing out. I used to do this all by myself. Doug, are you catching up?

MR. FARVER: I'm not sure.

CHAIRMAN GRIFFON: Thanks, Scott,

for doing that research.

MR. STIVER: I missed that exchange. It's codified in PROC-60? PROC-61. Okay.

MR. SIEBERT: Actually, we do refer to it in the response. We just didn't clearly line out the, we didn't quote the section.

MR. CALHOUN: And it may be assigned, but if it's a best estimate it's got to be assigned within a year, correct? That's what it sounds like.

MR. SIEBERT: That's pretty much the way we read it, yes.

MR. CALHOUN: So that's a little bit different than how our response is written. The response almost sounds like we may do it if we want to but --

MR. HINNEFELD: The response makes it sound discretionary.

MR. CALHOUN: And it may be discretionary, unless it's a best estimate or an overestimate.

MR. FARVER: Yes. Okay. I'm at a

loss for this first one.

MS. BEHLING: Excuse me, Doug. This is Kathy Behling.

MR. FARVER: Thank you, Kathy.

MS. BEHLING: I believe that this particular -- I assume we're on 330.1.

MR. FARVER: Yes.

MS. BEHLING: Okay. I believe this goes back to the discussion of the IG-1 and the exposure geometry table that has been added. And I know we talked about this earlier and that NIOSH was going to look into whether there should be a PER associated with that change. But I believe that that's perhaps the starting point of this particular finding.

MR. FARVER: So this is the rotational geometry?

MS. BEHLING: Yes, and it's for a lung cancer.

MR. FARVER: Yes, cancer and one is a lung. That makes sense. That probably is

what it's for. Okay. Let me go back and look more on this. And NIOSH can do the same thing, but it has to do with the, similar to the other finding.

MS. BEHLING: I think it has to do with whether there should have been a correction factor applied to this particular case that's listed, I believe it's Table 4.1A in the latest version of IG-1.

MR. FARVER: Okay. There is some discrepancy whether AP or maybe it's a mixture of AP and ISO or something like that.

MR. STIVER: Okay. So now we're going to pin that and look into it in more detail at a future time?

MR. FARVER: Yes.

MR. KATZ: So this is SC&A is following up on this?

MR. FARVER: Yes.

CHAIRMAN GRIFFON: 330.2.

MEMBER MUNN: Well, the question of whether or not there had been contact with the

coworker, that question we didn't discuss at all. I guess that would be a NIOSH --

MR. FARVER: From the previous response.

CHAIRMAN GRIFFON: Yes.

MEMBER MUNN: It's just a question to be answered. It's either yes or no.

CHAIRMAN GRIFFON: Right. Is that a NIOSH part of the action; is that what we're saying?

MEMBER MUNN: It would appear so.

MR. HINNEFELD: It would seem to me there's some NIOSH --

CHAIRMAN GRIFFON: Yes.

MR. HINNEFELD: SC&A's response to it is written after the NIOSH.

MR. FARVER: We're going to put that SC&A and NIOSH will follow up on this finding. How's that?

CHAIRMAN GRIFFON: All right.

MEMBER MUNN: That will cover it.

CHAIRMAN GRIFFON: 330.2.

MR. FARVER: Okay. It looks like NIOSH began assigning missed and measured dose in '65. We did not find anything, any change in the work location or job description prior to '65, so we contend that they should apply a coworker dose from the earlier time period of '53 through '65. So that was the beginning.

Okay. And then you go through the NIOSH explanation, which we did. And SC&A agrees with NIOSH's response and recommends closing the finding because they give a better explanation.

CHAIRMAN GRIFFON: I think that looks okay. Do others have any comments? It looks like an explanation is fine.

MR. FARVER: Yes.

CHAIRMAN GRIFFON: Okay. I think we agree. Closed. Point three.

MR. FARVER: Okay. On to neutron dose. It goes back to the wording in TIB-7. It's rather lengthy to go down and look at the attachment at the end. It has some sections

from TIB-7.

MR. STIVER: It's down on page three.

MR. FARVER: Yes.

CHAIRMAN GRIFFON: Does everybody follow that? Page 38 there's an attachment here, or there's a finding, 330.3. It's the back of the matrix.

MR. FARVER: Section 2 talks about potential neutron exposure prior to '71 when the work area is known and also when the work area is unknown or not clear.

MR. STIVER: It looks like Section 2.2 is really what applies here. Work area is not known or is not clear, health physicist should use the criteria outlined below to determine whether neutron exposure should be included. No single definitive source document could be used to determine whether energy employees -- okay.

MEMBER MUNN: What section was that?

MR. STIVER: This is in Section 2.2

of the --

MEMBER MUNN: Oh, 2.2. All right.

MR. STIVER: Page 38.

MR. SIEBERT: This is Scott. I would submit that it's not an unknown location. We have the individual in the 300 areas, based on the CATI and the records.

MEMBER MUNN: Yes.

MR. STIVER: Under Section 2.1, when the work area is known, it's pretty straightforward. The work history records are sufficient to indicate they worked in any of the following areas, neutron dose should be included in the reconstruction. That includes area 300 right there under Section 2.1. More detail in the reconstruction.

MR. FARVER: An employee working 321M, 300 area, so it's got potential for neutrons.

MEMBER MUNN: It talks about the plutonium aluminum targets.

CHAIRMAN GRIFFON: Can someone

summarize? I mean, the position is that, since there was no plutonium monitoring, they likely weren't working where the targets were and, therefore, no neutron doses, even though they were in these buildings or areas, right?

MR. HINNEFELD: Scott, is that the position here that --

MR. SIEBERT: Yes. We know the individual, we believe the individual was in the 300 areas. That does not tie them to 321M. Our working is that if they were in 321M and working with the plutonium, the targets, they would have been monitored for plutonium. There would have been bioassay. What was likely there would have been neutron monitoring, but there's neither one. So it did not seem indicative this person was working in that small area of 300 where neutron exposures would be likely.

MR. FARVER: I thought it was mentioned in the initial claim and interview: building 321, which was reported by a

survivor. So it would be in the CATI report.

MR. STIVER: It's becoming a weight of evidence again. Presence of dosimetry data or monitoring data would indicate that this person was involved in fuel fabrication in 321M because the information --

CHAIRMAN GRIFFON: Do we know that the CATI said that the person --

MR. SIEBERT: The CATI does specifically state building 321, but it says he made rods for the reactor. It did not say anything about the target. So it's not 321M specific. The target work is being in 321. Once again, since there's no plutonium monitoring, it did not seem indicated that he was working on that specific type of work.

MR. SMITH: This is Matt Smith of ORAU Team. The other indicator is that 17 keV calibration curve in the film era. That was used when somebody was in an environment that involved plutonium work, as well.

MEMBER KOTELCHUCK: And those measurements were not --

CHAIRMAN GRIFFON: Were not done. By job title, it wouldn't be obvious that the person was working on this kind of work. Probably not, I'm guessing. Right?

MEMBER MUNN: This isn't very much in-depth information.

MR. STIVER: And that prompted them to include the completeness and the adequacy of the bioassay monitoring program. It would always have captured it, should you err on the side of claimant favorability and conservatism. So it becomes a judgment call, and there has to be a weight of evidence argument in favor one way or the other, I would think.

MR. FARVER: If you go down to page 37, the bottom of 37, it talks about the non-routine workers from '71 to '89.

CHAIRMAN GRIFFON: TIB-7?

MR. FARVER: Yes. And you would

base it on work location, job description, CATI, and photon exposure history. And the very last statement, these estimates will tend to overestimate the neutron dose, especially considering the ratios based on routine workers that are considered reasonable but claimant favorable. Which way do you lean?

CHAIRMAN GRIFFON: Well, is this a best estimate case?

MR. FARVER: Oh, yes, this is your --

CHAIRMAN GRIFFON: Best estimate.

MR. FARVER: -- you're running 48 percent or so.

CHAIRMAN GRIFFON: Right, right.

MR. FARVER: So something like this could make a difference.

CHAIRMAN GRIFFON: Yes, that's what I was trying to get at. Right.

MEMBER MUNN: The rationale sounds reasonable. No, he wasn't routinely monitored for PU intakes, which the implication then was

that the target period probably wasn't his cup of tea.

MR. FARVER: You're reading under Section 2.2.2, right?

MEMBER MUNN: No, no, I was back on the, I was back reading the original commentary --

MR. FARVER: Okay.

MEMBER MUNN: -- on the matrix.

MR. FARVER: Okay. Because part of that is the top half under Section 2 is for prior to '71, and then you go down to Section 3 and that's for '71 to '89. So there's two different time periods that they have criteria for.

MEMBER KOTELCHUCK: The person didn't have photon monitoring, did they? For non-routine workers with photon monitoring.

MR. FARVER: We'll find out. He did for some period.

MEMBER KOTELCHUCK: Okay.

MR. FARVER: I don't know exact time

period.

MEMBER KOTELCHUCK: But no neutron monitoring. Evaluation of work location, if people have evaluated it. Job description, CATI.

MR. FARVER: This goes back to what we talked about earlier, which was TIB-6. You have your time period of '70s through the '80s where you've got blanks and zeros, or blanks. In this case, they were interpreted as missed doses, missed photon doses. So now if we have missed photon doses, that would imply that there were photons.

MEMBER KOTELCHUCK: That's right. Okay.

MR. FARVER: I mean, granted, this is a judgment call.

MEMBER KOTELCHUCK: But that's, that's reasonable to say that they were missed doses. But there was no neutron monitoring, and the work location and job description do not fit.

MR. FARVER: Well, the work location does. I mean, he is --

MEMBER KOTELCHUCK: Said they worked in the nearby building. They worked in that building.

CHAIRMAN GRIFFON: The CATI says 341M.

MR. FARVER: It says 321.

CHAIRMAN GRIFFON: Yes, sorry, 321.

MR. STIVER: 321M was just a subsection. So it wasn't indicated that he did work there, but there's certainly no indication that he wasn't, other than the evidence of the lack of monitoring for neutrons or plutonium.

MEMBER MUNN: That's where the target work was done, but it says the target work was carried out sporadically and not a continual thing.

MR. FARVER: I mean, if you look under 3.1, bullet number one, work location. If the work location is any of the areas noted

in Section 2.1, which it says A area, 300 and 700 areas. And it says fuel fabrication 300 area.

CHAIRMAN GRIFFON: But NIOSH notes this, at the bottom of their response they say that SC&A finding paraphrases '71 through '89. Oh, this is pre '71, though, right?

MEMBER MUNN: Pre, prior to '71.

CHAIRMAN GRIFFON: Anyway, without the part that states that the work location limitation set forth in the earlier section must still be met.

MR. FARVER: I just mentioned that.

MEMBER KOTELCHUCK: If you were going through work location one to job description, either the job description or the CATI indicate it could result in. Did the CATI -- what did you say about the CATI --

MR. FARVER: That's where we get to 321, though.

MR. STIVER: So you have, at least we've met criteria two, job description or

CATI and neutron monitoring happened in the area, building 321.

MEMBER KOTELCHUCK: And has a measured photon dose, not missed dose. Well, there were some missed doses, but they have measured photon doses for a number of --

MR. FARVER: And even the DR report specifies that, it says he worked in the 300M area.

MR. HINNEFELD: Now, wait a minute. The criterion two, this section you're reading, 3.1, is for non-routine worker. I hate that because I don't know what that means.

MR. FARVER: I don't either.

MR. HINNEFELD: So the first criterion is if they worked in the work location and the other criteria, the second one, has to do with the job description. If the job description describes someone who would be a non-routine worker, only intermittent exposure. So the CATI describes

someone who manufactured fuel rods. That's not someone who's non-routine. That's someone whose routine job -- now, the CATI, on the other side of the coin, the CATI was completed by a survivor. And so, you know, how much do they know about the entirety of the person's employment or how much they remember about the entirety -- who knows?

MEMBER MUNN: Well, the probability of their being aware of the target campaign is fairly small.

MR. FARVER: I mean, there are a lot of unknowns.

MEMBER MUNN: There are, as is often the case.

MR. FARVER: As is often the case.

MR. HINNEFELD: Well, I think, as a step to move this along, we're not going to --

MR. FARVER: No, no, no.

MR. HINNEFELD: As a step to move this along, why don't we, from our side, say, you know, based on, here are the TIB -- what

TIB are we talking about here? Seven? Here are the TIB-7 criteria that we used to reach the decision we reached, and just lay that out carefully. And then we can see where are the issues with that decision process or, better yet, from this TIB-7 criteria, why did we feel like these things that we discussed here today, why do we feel like those possible avenues in don't apply in this case.

CHAIRMAN GRIFFON: That's better. Yes, yes.

MR. HINNEFELD: You know, we've talked about some avenues along here. That would lead you to conclude that neutrons should be included. We should come back and say why do we think that those avenues don't get you to where neutrons should be --

MR. FARVER: And for future work, is there some way you could come up with like a checklist or, you know, that these are the items that were considered. I'm not sure where to put it --

MR. HINNEFELD: Now that we have a couple of years' worth of or a few years' worth of experience with TIB-7, is there a way we can phrase it better?

MR. FARVER: Yes.

MR. HINNEFELD: Right.

MEMBER KOTELCHUCK: The only thing is, if I was being totally neutral about the decision, I mean, then I would ask for both sides. Implicit in that is that this committee is leaning toward saying, on claimant favorability, to including the data, right? And you're saying you're going to see, correctly, you're going to look to see what are the counter-arguments. When we next discuss it, we're going to discuss the negative, but we would have to recreate this discussion, or would there be a way that SC&A could present, could put together what we talked about here so that we could compare?

MR. KATZ: We'll have the transcript, and you can synopsize what we said

here.

MR. FARVER: Do you guys want to put together something, and then, if you send it to us, we'll put together an exact same --

MEMBER KOTELCHUCK: But, in fact, somehow one has to come back to this conversation, or else we're just discussing the negative, which loads us in a certain direction.

MR. STIVER: I certainly would like to see the decision process that Stu is going to provide. We can look at that.

MR. FARVER: I think we can come up with a way to make the OTIB clearer and more straightforward.

MEMBER KOTELCHUCK: Stu, would that be okay? You would prepare and that we would have the record of this with SC&A's comments summarized in the discussion. And then we'll talk about it again.

MR. HINNEFELD: Okay. So we were just discussing 330.3; is that correct?

MEMBER KOTELCHUCK: Yes.

CHAIRMAN GRIFFON: And I'm going to, I was trying to get through item 330 before a comfort break, but we didn't quite make it. So I'm going to ask for a comfort break now, maybe like ten minutes. And then we'll do another hour, I think, and then we'll, you know --

MEMBER KOTELCHUCK: I have to leave in 15 or 20 minutes.

CHAIRMAN GRIFFON: All right.

MR. KATZ: We need David and Brad to keep going.

CHAIRMAN GRIFFON: Yes. We'll make sure they're on the line. But let's take ten minutes and come back and reassess.

(Whereupon, the above-entitled matter went off the record at 3:58 p.m. andresumed at 4:09 p.m.)

MR. KATZ: We're going to break right now from what we were doing and try to schedule the next meeting because we're about

to lose Dave, who we need.

CHAIRMAN GRIFFON: David Richardson and Brad, are you on the line?

MEMBER CLAWSON: Yes, I'm back on, even though Ted hung up on us.

MR. KATZ: Yes, just briefly. If you noticed, I reconnected in about a minute.

CHAIRMAN GRIFFON: David, are you there?

MEMBER RICHARDSON: Yes.

CHAIRMAN GRIFFON: Good. We just want to select a date for the next meeting.

MR. KATZ: And we're talking about, we're at the end of March, so we're talking about middle to late May. Is that sort of right --

MEMBER KOTELCHUCK: Right. And our next Board meeting?

MR. KATZ: But that's not until July.

CHAIRMAN GRIFFON: Not until July, yes. So any --

MR. KATZ: There's plenty of work to do that's going to be left on our plate, so there's no question we could do it sort of, we should do it sooner than later.

MEMBER KOTELCHUCK: Do people like Mondays or Fridays or --

MR. KATZ: Probably Mondays. If we're going to be in person, it means traveling on Sundays. I do it all the time, but I still resent it, losing my Sunday afternoon and evening.

MEMBER KOTELCHUCK: So that's why I was asking. Maybe people want Tuesday and Thursday. What do people think?

MR. KATZ: Tuesday through Friday, any of those days is fine with me.

MEMBER MUNN: My preference would be very early May because I'm going to have to --

MR. KATZ: Well, it can't be very early. We need 30 days for a Federal Register notice, so we're at the end of March already.

MEMBER KOTELCHUCK: So Friday is

good for you, as far as you're personally concerned?

MR. KATZ: I'm fine any day, but I don't like Monday.

MEMBER KOTELCHUCK: But it seems to me Friday, for people like me, Monday or Friday doesn't matter. But the notion of our keeping Sundays for our families, given that probably many people are working six days a week in reality, is right?

MEMBER MUNN: Tuesday the 7th would be too early?

MEMBER KOTELCHUCK: How about the 10th, Friday the 10th?

MR. KATZ: Plus Monday is a federal holiday, I think. Isn't that Memorial Day? Well, I can look. I have it highlighted for something.

MEMBER KOTELCHUCK: I'm out the entire week of the 13th.

MR. HINNEFELD: When is Memorial Day, the 27th?

CHAIRMAN GRIFFON: How about the week of the 20th for people?

MR. HINNEFELD: I'm out on Wednesday, but I'm here the rest of the week.

MR. KATZ: So the 21st? That Tuesday?

MEMBER KOTELCHUCK: Wait a minute. Let me get there, if I may.

MEMBER CLAWSON: Are we talking May?

MEMBER KOTELCHUCK: And we're talking about May, which date? The 21st is a Tuesday.

CHAIRMAN GRIFFON: Wanda can't make it.

MEMBER MUNN: That's okay. I'll probably do it by phone. I'm going to try to schedule [identifying information redacted].

MEMBER KOTELCHUCK: Oh, my goodness. Tuesday the 21st sounds good.

MR. KATZ: Does that work for you? Does that work for you, David, on the phone, and Brad?

MEMBER CLAWSON: The 21st of May?

MR. KATZ: Yes.

MEMBER CLAWSON: Yes, that would be okay.

MR. KATZ: How about you, David?

MEMBER RICHARDSON: I think that should be okay.

MEMBER KOTELCHUCK: Then that sounds like we have a date.

MR. KATZ: And, Wanda, that works for you by phone, at least?

MEMBER MUNN: By phone.

MR. KATZ: Okay. May 21st.

CHAIRMAN GRIFFON: And we'll check with John, but I think we got a --

MR. KATZ: We need a quorum is the main thing.

MR. HINNEFELD: What time we're going to start if Wanda is going to be on by phone?

MR. KATZ: Oh, yes, that's an issue --

MEMBER MUNN: Still 9:00 because nobody is going to get here earlier than that if they're traveling --

MR. KATZ: No, but 9:00 here means it's 6 a.m. your time.

MEMBER MUNN: I know.

MR. KATZ: You can do that?

MEMBER MUNN: I don't know. It really will depend on my physical condition.

MR. KATZ: Okay, 9 a.m., May 21st.

MEMBER KOTELCHUCK: I remember my first phone call on this Board. I was [identifying information redacted]. That's why I didn't hardly say a word all day.

CHAIRMAN GRIFFON: I thought you meant because of the --

MEMBER KOTELCHUCK: I didn't want to miss the first meeting.

CHAIRMAN GRIFFON: And then the other item I thought we should take up before we start to lose any more people because we still have a quorum, I believe -- yes, we do,

we do -- is the blind reviews and the case selection. And someone has got to refresh my memory of how we're going to go about this case selection process.

MR. KATZ: So what Stu has suggested at the last meeting was that we just select them out of already selected cases from set 16. Now, SC&A has finished half of those. Well, not finished, but they've chewed through, at least partially, half of those cases. There are 22 cases, and 11 cases they've already been doing work on. So that almost, that disqualifies them by --

MR. STIVER: As I recall, we were going to try to pick some cases that were close to the actual PoC, 45 and 50, the adjudicated cases and also by trying to select them by the type of cancer. We've already got skin, and we're looking at some others. David brought this up.

MR. KATZ: But they've got to be blind.

MR. STIVER: It also can't be something that we have in the queue because we're going to know which ones are which.

CHAIRMAN GRIFFON: Right, right.

MR. STIVER: So set 16 might be off the table.

MR. KATZ: Oh, okay. You're saying that doesn't work. Okay, fine. So we need six cases.

MR. HINNEFELD: How would you like us to go about this?

CHAIRMAN GRIFFON: Yes, that's what I'm asking.

MR. HINNEFELD: I mean, we can generate a list for the Subcommittee to select from. We can generate the list however you would like. You said what kind of a range you want on PoC. We've only looked for adjudicated cases.

CHAIRMAN GRIFFON: I think we should probably get a larger list than six. Maybe a dozen or so because there's only so many

within the 45 to 50 range. Any other criteria, David? I mean, we -- or David on the phone. Ideally, within 45 to 50, or do we want to limit it to that?

MR. FARVER: Well, what's your best estimate range? Is it 45 or --

MR. CALHOUN: Forty-five to fifty-two.

MR. HINNEFELD: Forty-five to fifty-two is when we run the best estimate.

MR. STIVER: It's only about three percent of the claims. It's going to be limited.

MS. LIN: Maybe also look at claims earlier in time or later in time.

MR. HINNEFELD: Why would they want to do earlier in time?

MR. KATZ: She meant the opposite. Yes, and I think that's a good idea.

CHAIRMAN GRIFFON: So then if you have to loosen, I'd say go down to 40 percent if you need a larger group.

MR. HINNEFELD: Okay. Let me get some notes here. I'll forget all this before I --

CHAIRMAN GRIFFON: I think that's -- David R., any other criteria that you can think of for these blind cases?

MEMBER RICHARDSON: It sounds fine.

CHAIRMAN GRIFFON: Okay.

MEMBER MUNN: Why are we eliminating the full scope of the best estimates that we did? Why aren't we looking at 45 to 52?

MEMBER KOTELCHUCK: That's what we are looking at.

MEMBER MUNN: Oh, I thought you said 50.

MEMBER KOTELCHUCK: No, we said if you have to relax go to 40. It's 45 to 50.

MR. KATZ: As long as they're best estimates, actually, right? Isn't it --

MR. FARVER: If you get down to 40, you're not going to have best estimates. You're going to have the hybrids and --

CHAIRMAN GRIFFON: Well, that's what I say. Extend it down to 40 only if you need more cases. You're looking at a limited pool, right?

MR. HINNEFELD: Well, if you recall, when we generate these, normally we have the date of the DR completion as one of the pieces of data, and we have the PoC as one of the pieces of data. So we can provide a list down to 40, but we'll sort it. We'll give you like the ones at 45 and 52 at first, and then you can see how far back that goes. And if that goes back farther than you want, then you can look at the 40s, you know, 40s or something, 40s to 50s.

CHAIRMAN GRIFFON: I was going to say how do we want to -- I mean, I think you should think about do we want to do this in two steps like we've done before where we get a --

MR. HINNEFELD: They will be best estimates, and so all that additional

information stuff is somewhat less relevant to the --

CHAIRMAN GRIFFON: Right.

MR. HINNEFELD: -- selection. If we're 45 to 52, they'll be best estimates, so the additional information is not important.

MEMBER KOTELCHUCK: Good. Is there any issue about thinking about male and female breakup in that there may be organ issues or other that may be different for males and females?

MR. HINNEFELD: We can put that on the selection. That's --

MEMBER KOTELCHUCK: I'm not saying 50/50 because that's not --

MR. HINNEFELD: I think that's what it --

MEMBER KOTELCHUCK: -- but there is a certain percentage of female cases we look at.

MEMBER MUNN: But we've done that, we've ignored that in the past. There's no,

you know --

MEMBER KOTELCHUCK: In terms of the radiation --

MEMBER MUNN: -- cancer is an equal opportunity employer. So it's not, it doesn't seem pertinent.

MR. HINNEFELD: There are gender-specific models.

MEMBER MUNN: But the whole point is we have such a small limited body to deal with to begin with. If we were dealing with hundreds of thousands, perhaps. But we're dealing with dozens here.

MEMBER KOTELCHUCK: What is implicit is that the percentage of females among those cases that we consider is fairly small.

MEMBER MUNN: Small. Very small.

MR. HINNEFELD: I don't think it costs us anything to put gender on the selection.

CHAIRMAN GRIFFON: Yes, you can add it on. Right.

MR. STIVER: It depends on how deep the selection goes, and if you have that kind of leeway to pick within --

MEMBER KOTELCHUCK: Right, yes.

MR. STIVER: -- pick a female type cancer.

MEMBER KOTELCHUCK: Exactly. It's a type of cancer.

CHAIRMAN GRIFFON: Sure.

MR. HINNEFELD: Okay. What I'm envisioning is picking a date, a fairly recent date where we might, where we have some reason to believe it's adjudicated. So it won't be like claims that were done last week. The claims may be up two to three months ago, go back from then until we get, say, 20 in the 45 to 52 range and get those cases. And there you are, and we'll give all the selection criteria, plus gender, that we normally give. And then we'll provide -- we don't need to wait for a meeting. When we have them, we'll make them available to everybody in the

Subcommittee.

CHAIRMAN GRIFFON: How do we pick the six?

MR. KATZ: Well, if you want to select from these, you're going to have to meet.

CHAIRMAN GRIFFON: Or we could do it by phone.

MR. KATZ: Right. By phone. I'm saying you don't have to meet in person, well, except that, as a Subcommittee, we still have to do a Federal Register on this, so you're sort of stuck.

MS. LIN: Well, I mean, for the case selection, we can call it administrative work in preparation for a meeting, and that would be very much within that --

MR. KATZ: That's true. Okay.

MS. LIN: -- and if you just want to do an email communication.

MEMBER KOTELCHUCK: If we're looking at types of cancer, then it would be valuable

if we choose to note the types of cancer that we're already looking at in the cases that you've done, the blind cases, right?

MR. KATZ: Well, they've done so few, it doesn't really matter. So let's just do this. They'll select 20 or so, in that ballpark, whatever they can come up with in a reasonable time frame, in the next few weeks maybe. And then we'll send those around to the Members, and then we'll have a teleconference. It won't be a Subcommittee teleconference. It will be a technical call. And you guys can then make the cut as to what six go forward. We'll try to get this done, I would say, let's try to get this done within a month because they need all the time they can get to get it done by the end of the year.

CHAIRMAN GRIFFON: Right.

MR. FARVER: And then we just have to work out the logistics of going over to ORAU and getting a terminal set up.

MR. KATZ: It's all good, and we'll

work that out.

MR. FARVER: That way, I can bring all six cases and all the workbooks I need at one time and go back, figure out I forgot one, come back.

MR. STIVER: Plan on at least two trips.

MR. FARVER: It will probably be two trips because I probably will forget something.

CHAIRMAN GRIFFON: Okay. So do we go back to the matrices and plug away a little more?

MR. KATZ: I encourage it.

MEMBER CLAWSON: So does this take care of the upcoming dose reconstructions, or are we just --

MR. KATZ: So this takes care of the blinds.

MEMBER CLAWSON: These are the blind reviews, but I thought at the last meeting that we got that, I just don't want us to lose

track that we still have, we still have to be getting ready to pick the next ones coming up, too. I thought SC&A was running out of --

MR. KATZ: Well, no, they have half of the 16th set. The last set took them more than a year to do.

MR. STIVER: We've got about ten that aren't finished yet.

MR. KATZ: Yes.

MR. STIVER: My only concern is that it usually takes three or four months when we start to, where we actually have cases in hand.

MR. KATZ: Yes, we'll have to talk about this. This is a difficult issue because this is the end of the year, and everything you need to get done needs to be done within the year. So it would have to be a very small set to get it done and delivered in time. So I'm going to talk to you folks offline, and we need to figure out what you can handle in reality, and then we'll handle it. We can do

it just like we did this, like we're going to do this. We'll do it that way.

CHAIRMAN GRIFFON: So Doug was suggesting that we -- 330, the rest of the findings on 330. You want to have time to talk more with NIOSH, right?

MR. FARVER: Well, we're going to be looking at the other three findings from that case, we might as well look at all five findings while we're looking at it. I mean, I think number four we can probably close. Yes, number four we could probably close, and number five looks pretty easy. It looks like a TBD revision or wording type issue.

CHAIRMAN GRIFFON: Then let's just go through them then.

MR. FARVER: Okay.

CHAIRMAN GRIFFON: Yes, 330.4 you're saying you're recommending close.

MR. FARVER: Right. Which one are you looking at, Mark?

CHAIRMAN GRIFFON: 330.4.

MR. FARVER: Okay.

CHAIRMAN GRIFFON: I think that's, I see the explanation, and it looks like you're agreeing with NIOSH.

MR. FARVER: Yes.

CHAIRMAN GRIFFON: Yes.

MEMBER MUNN: That one is closed.

CHAIRMAN GRIFFON: So, I mean, I'm comfortable with that explanation.

MR. FARVER: Okay.

CHAIRMAN GRIFFON: Yes. And, Brad or David, if you have comments on these, you know, please speak up.

MEMBER CLAWSON: Okay, appreciate it.

CHAIRMAN GRIFFON: All right. 330.5, this is the TBD one that Wanda was saying.

MR. FARVER: Yes.

CHAIRMAN GRIFFON: I mean, I think it's a pretty straightforward suggestion. Does NIOSH agree with that?

MR. CALHOUN: We're in the process of doing it.

CHAIRMAN GRIFFON: Okay. I guess you agree.

MR. CALHOUN: Sure, we'll do that.

CHAIRMAN GRIFFON: Alright. And then --

MEMBER MUNN: For our purposes, it should be closed.

CHAIRMAN GRIFFON: Yes, I think we can close it then. Yes, so 331.

MEMBER MUNN: I think it's more of the same.

CHAIRMAN GRIFFON: So this is a QA issue. I think it should be acknowledged that it's a QA issue, but I don't think there's any further action, right? And then we can close it?

MEMBER MUNN: There doesn't appear to be.

MR. FARVER: Correct.

CHAIRMAN GRIFFON: Wasn't my phone.

Okay, 331.2. Another QA, yes.

MEMBER MUNN: Yes, close.

CHAIRMAN GRIFFON: Yes, it seems reasonable just to close that, but note that it's a QA finding. Everybody in agreement?

MEMBER MUNN: Yes.

CHAIRMAN GRIFFON: 331.3. Look how productive we are at the end of the day. So you're saying this is just a TBD revision really, right?

MEMBER MUNN: Yes. Since we were unsuccessful earlier in getting a date commitment, I doubt we can get that done.

MR. CALHOUN: Well, I can tell you what's on our plan, if you'd like that. But it's a plan. You got to remember that.

MEMBER MUNN: And we know what happens to plans, best laid plans.

MR. SIEBERT: Are we talking about 331.3?

MEMBER MUNN: Yes.

MR. SIEBERT: Okay. Just one thing

that I will throw in while Dave is looking that up. The information is already updated in the Savannah River dose reconstructor guidance document, so we have that information already written and documented. Then it will go into the TBD.

MEMBER MUNN: Oh, that's good to know. Thank you.

CHAIRMAN GRIFFON: And the guidance documents are added to the cases now, right?

MR. SIEBERT: Correct. Those are automatically submitted along with the case.

CHAIRMAN GRIFFON: I love that. That's one of the best things we ever recommended. 331.4. So I think we don't need that specific plan on the schedule.

MR. FARVER: So we're closing that one.

CHAIRMAN GRIFFON: Yes. And going on to 331.4.

MEMBER MUNN: QA issue.

CHAIRMAN GRIFFON: And I note your

second sentence, this is the third QA issue identified for this case.

MEMBER MUNN: Yes, that's painful.

CHAIRMAN GRIFFON: Yes, yes. Okay. I don't think there's anything more to say about it, right? So it's closed. We'll accept it as a QA finding. And then an observation, 331, observation one. Okay.

MEMBER MUNN: Nothing can be done with that.

CHAIRMAN GRIFFON: I think there's no real action. It's just an observation, right?

MR. FARVER: Yes.

CHAIRMAN GRIFFON: So no action, closed, if we're closing observations. Alright. So we're on to 332.1.

MR. FARVER: Yes, this speaks to two items that have been previously addressed in Savannah River, that do with the Savannah River case is what it looks like.

CHAIRMAN GRIFFON: Yes.

MR. FARVER: And the EDCW tool has been updated.

MR. SIEBERT: And, Doug, I do have to point out since we're on the Savannah River grouping, yes, it's a Savannah River case.

MR. FARVER: That's good. Thanks. Keep me on my toes.

CHAIRMAN GRIFFON: A wise guy on the phone. And this is the idea of these clusters. I mean, these are repeating, so I think we discussed this already. We can close one and two, right?

MR. FARVER: 332.3 is the standard Savannah River site LOD over two issues that have been corrected.

CHAIRMAN GRIFFON: Yes. So we can close one, two, and three, as before, right?

MEMBER MUNN: Yes.

CHAIRMAN GRIFFON: And then we're on to 333.1.

MEMBER MUNN: Correct.

MR. FARVER: The recommendation is

that you include your rationale in the dose reconstruction report.

CHAIRMAN GRIFFON: Yes, okay. Another showing your work again, right?

MR. FARVER: Yes.

CHAIRMAN GRIFFON: And we'll close it.

MEMBER MUNN: Close it.

CHAIRMAN GRIFFON: All right. I think, again, it's a QA, right?

MEMBER MUNN: Yes.

CHAIRMAN GRIFFON: We can close it. 333.3, another QA issue, right?

MEMBER MUNN: Yes.

MR. FARVER: That's correct.

CHAIRMAN GRIFFON: Incorrectly entered. Alright. And, again, just note it as a QA and closed. 333.4. So this is a matter of the DR report, the wording, right?

MR. FARVER: Yes.

MEMBER MUNN: Yes.

CHAIRMAN GRIFFON: Okay. And we

agree to close. Wow, this really is going quick, huh? 333, observation one, no SC&A response is necessary, has been updated to address the assignment of tritium doses with the latest information. So no action, right? Yes. Yes, to be incorporated in the TBD. Observation two.

MEMBER MUNN: Water under the bridge.

CHAIRMAN GRIFFON: Tritiated water under the bridge.

MEMBER MUNN: Yes, tritiated water.

CHAIRMAN GRIFFON: Okay. I guess that's, yes, there's no further action, right? So I think we agree. Closed. 334.1.

MEMBER MUNN: That needs to be addressed in the morning.

MR. KATZ: We're okay.

MEMBER MUNN: Well, if the Subcommittee is actually going to talk about tools and verification tools.

MR. KATZ: Yes, that's great. It's

a good afternoon topic.

MR. SIEBERT: I do want to just point out this is the EDCW tool, which we've already discussed from the QA point of view with that PER.

MEMBER MUNN: Oh, it's the same --

CHAIRMAN GRIFFON: Yes.

MR. SIEBERT: So we've actually covered this issue already.

MEMBER MUNN: I missed that. Okay. I see that now. Sorry. Thank you.

CHAIRMAN GRIFFON: And this is the one where you looked at the 300 cases, right? And you --

MR. SIEBERT: Correct.

MEMBER MUNN: Yes. In my mind, when I glanced through that earlier, I was envisioning --

CHAIRMAN GRIFFON: Remind me where did we leave that one? Was there any action following that? Anybody? It's a test if we remember what we did this morning.

MR. STIVER: We came to the conclusion there really wasn't much we could do.

CHAIRMAN GRIFFON: Yes, that's what I --

MR. SIEBERT: For the individual case, that's how it was. NIOSH, we're going to be looking into the PER situation for that issue.

CHAIRMAN GRIFFON: Okay, okay. Thank you, Scott. You win the prize. I'm not sure what that is but --

MR. SIEBERT: I'm sure I'll love it.

CHAIRMAN GRIFFON: You get to hang up in 20 minutes.

MR. SIEBERT: Thanks.

MR. KATZ: So 334.1 is closed?

MEMBER MUNN: Yes, closed.

CHAIRMAN GRIFFON: All right. And 334.2 is the same, yes, so that's also closed. Okay. 334.3. Oh, this looks like a question of PER here, possible. Has NIOSH investigated

to identify other cases, that's the question hanging out there, I guess.

MEMBER MUNN: Yes, it looks like it.

CHAIRMAN GRIFFON: Yes. That might be just a carry forward. Scott, do you have anything on this one?

MR. SIEBERT: I'm just reading through it real quick.

CHAIRMAN GRIFFON: Oh, okay, yes.

MR. SIEBERT: I recommend we look at this one next meeting because I think this is going to take a little bit more time.

CHAIRMAN GRIFFON: Sure.

MEMBER MUNN: I agree.

MR. KATZ: DCAS response next meeting?

CHAIRMAN GRIFFON: 334.4. Is this the same tool?

MEMBER MUNN: I believe so. This is another one of those Subcommittee review verification and validation process. It sounds like it was covered in the earlier

finding.

MR. STIVER: Yes, when we first got to 334.1, it gets back to the Crystal Ball issue.

CHAIRMAN GRIFFON: I think we've closed this one, and NIOSH has the other action on that. Okay. 334.5. So they give a better explanation of the internal dose methodology, I guess. So can you summarize on where that --

MR. FARVER: No. Not off the top of my head.

CHAIRMAN GRIFFON: Okay.

MR. FARVER: I did look at it because I actually wrote that closing thing, so I knew it at one time.

CHAIRMAN GRIFFON: Well, I ask that we carry this one forward only because I don't want to skim over it. It looks like a pretty detailed --

MR. KATZ: SC&A will discuss this.

CHAIRMAN GRIFFON: Discuss it at the

next -- yes, yes. And if we have a lot more like this, then maybe we should close the meeting. No, we've got a couple more I think we can close out. 334.6. It looks like this was a pretty clear clarification of the dates, right?

MR. STIVER: Yes, assignment of exposure period.

MEMBER MUNN: Yes. There wasn't really any error there. What was appropriate given the policy and process.

CHAIRMAN GRIFFON: You guys are comfortable with it, right? SC&A? Is that accurate?

MS. BEHLING: It's just an indication of the CADW tool. That's all it is.

CHAIRMAN GRIFFON: It's an entire year instead of partials; is that what --

MR. STIVER: I believe so.

MR. FARVER: Number six.

CHAIRMAN GRIFFON: Okay? All right.

Then 334 -- yes, close on six, seven. We've already seen this.

MR. FARVER: Yes, it's just a matter of making the two documents match up.

CHAIRMAN GRIFFON: The tritium guidance, right? And I think we already had something on that.

MR. FARVER: I don't know. Was there a --

MR. SIEBERT: This is Scott. This is a slightly different --

MR. FARVER: Yes.

MR. SIEBERT: But, yes, it's being incorporated in the TBD. The TBD previously had been released with the environmental numbers, and it did not account for absorption through the skin of tritium, just for the intake through inhalation. So the correction that has been made is you add 50 percent, and that has been done and implemented in the tools for the environmental, and the TBD will catch up reflecting that when we have the new

TBD.

CHAIRMAN GRIFFON: Okay.

MR. FARVER: So how do we want to write that?

CHAIRMAN GRIFFON: Well, I'm just saying correction has been incorporated in the tool, and TBD will be updated in the next revision cycle, right?

MR. FARVER: It is currently in the tools?

CHAIRMAN GRIFFON: That's what he's saying.

MR. FARVER: Okay.

CHAIRMAN GRIFFON: So it's closed, based on that. Okay.

MR. FARVER: Oh, number eight. I couldn't find the file they referenced --

MR. CALHOUN: That's not in here?

MR. FARVER: -- in the files that were sent to us. We found the file that I mentioned, the CATI summary draft.

CHAIRMAN GRIFFON: Oh, okay. We're

on to 334.8.

MR. FARVER: Yes. Sorry.

CHAIRMAN GRIFFON: Sorry. I didn't know you were caught up.

MR. FARVER: I've caught up.

CHAIRMAN GRIFFON: All right.

MR. FARVER: But we didn't find the one that they referenced, the V-1.

CHAIRMAN GRIFFON: Okay. Maybe NIOSH can just check on that.

MR. SIEBERT: Well, that version, the CATI was conducted after the dose reconstruction was completed.

MEMBER MUNN: Really? How would that --

MR. CALHOUN: It might have been that the survivor decided to get involved afterwards because these are done by survivors.

MR. SIEBERT: Yes, it's not unusual for us to get an additional CATI after the fact, and we review it for additional

information.

MEMBER MUNN: So all we're saying, actually, is that there is no additional, well, nothing new about this incident, about this specific incident anyway. The one thing we're focused on wasn't further illuminated by the second CATI; is that correct?

MR. CALHOUN: I can't find that in there, actually. It's not in NOCTS, Scott.

MEMBER MUNN: The second CATI may have said something, but it wasn't about this incident.

MR. CALHOUN: Oh, wait a second. Yes, it is. Here it is.

MR. FARVER: What prompted it is that the DR states that the CATI interview identified an incident in '79, and we went back and reviewed the CATI and couldn't find it. So that was one thing that flagged it.

MEMBER MUNN: But the new CATI still doesn't tell you anything about --

MR. FARVER: Well, I don't have

their new CATI. I don't have it.

MEMBER MUNN: So it's the second one you don't have?

MR. FARVER: Correct.

MEMBER MUNN: You had one, but not this one.

MR. FARVER: Correct.

MEMBER MUNN: Okay.

CHAIRMAN GRIFFON: But do you have it now, Grady; is that what you're saying?

MR. CALHOUN: I'm looking.

CHAIRMAN GRIFFON: Oh, I thought you said --

MR. CALHOUN: I thought I had it, but I don't see that --

MR. FARVER: He'll send it to me when he finds it.

MR. CALHOUN: I will.

CHAIRMAN GRIFFON: Yes. Why don't we do it that way? Then we'll have all the facts and can discuss it more clearly, right?

MR. CALHOUN: Yes, I can put it in

the transcript folder once we find it. But I don't, I don't see it in here.

CHAIRMAN GRIFFON: Scott?

MR. SIEBERT: Yes.

CHAIRMAN GRIFFON: See that? I lied.

MR. SIEBERT: Wait a second here.

CHAIRMAN GRIFFON: I'm going to give you an extra ten minutes.

MR. SIEBERT: Wait a second. I may be able to fill that ten minutes up now.

CHAIRMAN GRIFFON: Oh, okay.

MR. CALHOUN: Scott, unless that thing is labeled incorrectly, it's not in NOCTS.

MR. SIEBERT: No, give me a second here. I think, yes, I think -- no, I thought I had an answer quick. We're going to have to look at it.

CHAIRMAN GRIFFON: Okay. Well, since we have an extra ten minutes, can you explain why Crystal Ball was making mistakes on different -- forget it.

MR. CALHOUN: Look into your crystal ball, Scott, and tell us.

CHAIRMAN GRIFFON: Yes, look into your crystal ball. Look at that. I'm glad we continued to plug away because it's good to get through this one batch anyway. I feel like we achieved something. I don't know. Can we cover the LANL matrix in ten minutes? We got until 8 p.m.

MR. KATZ: There's a Greyhound bus.

CHAIRMAN GRIFFON: No.

MR. KATZ: So are we adjourning?

CHAIRMAN GRIFFON: Yes, I think we're adjourning. Thanks on the phone. I think we're good, and that's the end of the meeting. Meeting adjourned.

(Whereupon, the above-entitled matter was concluded at 4:52 p.m.)