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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Wednesday
JUNE 24, 2015

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The Subcommittee convened via teleconference at 10:30 a.m., David Kotelchuck, Chairman, presiding.

PRESENT:

DAVID KOTELCHUCK, Chairman
BRADLEY P. CLAWSON, Member
JOSIE BEACH, Member
WANDA I. MUNN, Member
JOHN W. POSTON, SR., Member

ALSO PRESENT:

TED KATZ, Designated Federal Official
BOB ANIGSTEIN, SC&A
BOB BARTON, SC&A
KATHY BEHLING, SC&A
ELIZABETH BRACKETT, ORAU Team
RON BUCHANAN, SC&A
GRADY CALHOUN, DCAS
DOUG FARVER, SC&A
ROSANNA GOGLIOTTI, SC&A
JENNY LIN, HHS
ED MAHER, ORAU Team
JOHN MAURO, SC&A
BETH ROLFES, DCAS
SCOTT SIEBERT, ORAU Team
MATT SMITH, ORAU Team
JOHN STIVER, SC&A

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

(10:31 a.m.)

MR. KATZ: Welcome, everybody. This is the Advisory Board on Radiation and Worker Health, the Subcommittee on Dose Reconstruction Review.

And a few notes on the front end: the agenda for this meeting is posted on the NIOSH website under the Board section for meetings for today's date so you can follow along. There's a sample agenda there. There's also some documents that can be PA-cleared posted there for people to follow along.

And then Board Members should have the non-PA-cleared documents, the full complement of those, by hook or crook. Some people should have had them FedEx'ed to them and others have them available electronically.

So, let's -- we're going to do roll call. I'm going to sort of address, to make things simpler with roll call for Board Members, where we have conflict matters, just by covering their conflicts up-front. And then we'll do roll call

per se for the Board Members.

I wasn't on the line for long, so I'm not sure exactly who -- I know we have a quorum already, but we'll go through that in a second. So let me just -- for conflicts for Board Members who are potentially present today, I think they'll all be present, Ms. Beach has conflicts at Hanford relevant to this. And Mr. Clawson for INL, Idaho National Laboratory. Wanda, Ms. Munn, for Hanford as well. And Dr. Poston for a variety of sites, but those are possibly to be discussed today, I think, [they] would be -- I'm not even sure that any of these are -- but X-10, Los Alamos, Y-12, and Lawrence Livermore National Labs. And I'm almost certain none of the others are going to be addressed today. And we do not expect Dr. Richardson on the call today; he's overseas.

Okay. So, let's begin with roll call with Board Members beginning with -- well, we've heard Dr. Kotelchuck.

CHAIRMAN KOTELCHUCK: Right.

MR. KATZ: And we'll go from there.

(Roll call.)

MR. KATZ: Okay, then. So, for everyone, for audio quality, there are already some issues. Please, when you're not speaking, just go ahead and mute your phone: *6 if you don't have a mute button, and then *6 to take yourself off of mute.

CHAIRMAN KOTELCHUCK: Ted, I've occasionally had trouble later in the day with my cordless. So if I start to break up, please tell me, you or anybody else, and I can replenish it and get back online, okay?

MR. KATZ: Okay. We'll do that. And David, it's your meeting.

CHAIRMAN KOTELCHUCK: Okay. Folks, you all have the agenda. In fact, it is in front of you. And let's -- we had a meeting of the Dose Reconstruction Review Methods Work Group on Monday. I'll talk a little bit about it. Josie is also a Member of the Methods Work Group, and Ted was there. And I will ask for help and supplements from others.

The first, in terms of the findings, we received Excel files on all of the 500 cases that

have been reviewed, not all of which have come before the Subcommittee. And Josie, since you're new, the DR Subcommittee not long ago completed sets 10 through 13, which had 116 cases. And we just started 14 through 21.

Now we also received an Excel file of sets 14 through 21 and associated analyses, one of which I wanted to point out that I think maybe useful to help start on. There are 166 cases for review under sets 14 through 21, the upcoming sets. In fact, SC&A found only 29 findings among these 166 cases. This is a quite dramatic shift from what we had previously. In earlier cases --

MS. GOGLIOTTI: Dave, I think you might be misinterpreting this. We do have a lot more than that in findings for these.

CHAIRMAN KOTELCHUCK: Pardon, could you speak just a little louder?

MS. GOGLIOTTI: I think you're misinterpreting this. We do have more than 29 findings for this subset of cases.

MEMBER MUNN: How many do we have, Beth?

CHAIRMAN KOTELCHUCK: Yes, how many? Because we talked about that the other day, but you were not there. But anyway, do tell us and tell me what's wrong with that, because that, to me, was my reading of 14 through 21.

MR. KATZ: That's Rose, by the way, Rose Gogliotti.

CHAIRMAN KOTELCHUCK: Rose, thank you. Sorry.

MS. GOGLIOTTI: It looks like we have 58 -- hold on one second. We have 307 findings.

CHAIRMAN KOTELCHUCK: Pardon?

MS. GOGLIOTTI: Three hundred and seven findings.

CHAIRMAN KOTELCHUCK: Three hundred and seven findings. We're distinguishing findings and observations. Do we have 14 through 21 up in front of us?

MS. GOGLIOTTI: Yes.

CHAIRMAN KOTELCHUCK: Okay. I do not -- okay. I'm having -- oh, okay, fine. Can we scroll up to 14 for a moment? Okay, getting to the top of the screen, I just counted total findings

in that column "K." I just went down that. And I don't understand --

MS. GOGLIOTTI: It's possible you were only looking at the 21st set.

CHAIRMAN KOTELCHUCK: Is that possible, for goodness sake, that I was not reading -- because that did inform a significant part of the discussion, that this seemed to be quite different than the past.

MEMBER MUNN: Do we have a total in that column?

CHAIRMAN KOTELCHUCK: Yeah, 307 it says, findings for 166 cases, which is in the ballpark of what we had previously in earlier sets.

MS. GOGLIOTTI: You know, there is a trend of less findings.

CHAIRMAN KOTELCHUCK: Pardon me?

MS. GOGLIOTTI: There is a trend that we've seen of less findings per case.

CHAIRMAN KOTELCHUCK: Aha. We did not have in that discussion details about 10 through 13 and the number of findings in that. Do you happen to have that? Or it may be that you weren't

tasked for that yet. But I thought you may just happen to have it.

MS. GOGLIOTTI: I do not have trending on the 10 through 13.

CHAIRMAN KOTELCHUCK: So there are 307 findings for -- my goodness. And I --

MEMBER MUNN: I'm trying to look at the numbers quickly as they were scrolled down there. I did not see any large number of significant findings on any single --

CHAIRMAN KOTELCHUCK: Right. I think the largest so far have been six. There's one 13. One of them is 13. And I wonder if I -- let us go down -- that's great. The number of 2-A findings, is it possible I looked down a wrong column? No.

Well, I'm -- if you will, I'm bothered, not just simply because I may have made a mistake -- I did, obviously -- but it did inform some of the discussion that we had that things were looking quite good. But there were and there still are many cases in which there are no findings.

And let's go on to that and just -- we may, as the Methods Work Group, reconsider some of

the discussion that we had. Nevertheless, in the findings, there are quite a few cases that had zero findings. And the question is, could we in some way identify a priori, or with initial observation, that there was some pattern to which ones are zero and that they maybe would not have to be gone over by the Subcommittee, or maybe would not have to be gone over by the Subcommittee in any detail, in other words. And there was a pretty lengthy discussion about how different things that might help us identify where the zeros are.

Ted, I believe SC&A was tasked, and if you have notes on that, for one or two reviews of 14 through 21?

MR. KATZ: Sure. SC&A was tasked. And we actually just went over this, Rose and I, this morning by email. But, two things: One, to have a look at sort of breaking out the cases for which there were no findings, what distinguishes them from cases with findings? But also sort of a little bit more text here to just look at where findings are concentrating by facility. And we had hoped also to maybe do it by procedure, where

findings may be concentrating by particular procedures, but as Rose noted today with me, we don't have these spreadsheets sorted that way. That's not a category. So cases haven't been classified that way, so we can't really do that easily. It could be done, but it would be laborious and we don't want to do that.

But down the road we talked about adding that, so that down the road we just track that by procedure as well. And that way we could look at any kind of trends or concentrations of findings in terms of particular procedures.

CHAIRMAN KOTELCHUCK: Okay. So that's something for us in the Subcommittee to keep our eye on now.

MR. KATZ: For the future. So, that will not be in a report from SC&A, which I think she expects. O

therwise the reporting that was requested could be done in about a week or so.

And related to that, I think Dr. Melius was indicating he'd like to reconvene the Work Group once we have that information prior to the

July Board meeting to prepare for the July Board meeting.

CHAIRMAN KOTELCHUCK: Okay. Josie?

MEMBER MUNN: Dave?

CHAIRMAN KOTELCHUCK: Yeah?

MEMBER BEACH: Sorry about that. Do we have the specific spreadsheet that we're looking at on the screen in our document review file? What's the title of it, if we have it?

CHAIRMAN KOTELCHUCK: It is 14 through -- Additional Detail, Sets 14 through 21, in an Excel file.

MR. KATZ: And Wanda, you received it multiple ways. You received it, I think, in association with this meeting, but also previously in advance of the last full Board meeting I sent that material out that SC&A supplied.

MEMBER MUNN: Okay.

MR. KATZ: So you should be able to find it in two places.

MEMBER MUNN: I was just looking at the document review file.

MR. KATZ: Yeah.

CHAIRMAN KOTELCHUCK: Okay. And there were other -- I mean, other issues and concerns came up. I raised issues about was there any correlation with -- or was there any association of those zeroes with -- or association with findings from situations where the claimant was deceased, as opposed to being able to give us a CATI, whether the CATI was really from the claimant or whether it's from the claimant's survivors.

We were reassured by Grady, at that point, that a lot of care is taken to make sure that if the case looks as if it will be terminal within a short period of time, there is a major effort made to speak to the claimant while he or she is still able to speak to us. Although that was raised, I don't think there was really any follow-up needed. We get all the CATIs we can from those who are alive. And also we get a second CATI, if the person passes, we get a second CATI from the family. So I doubt that that's going to be a source of findings in terms of that that will characterize where we have more findings as opposed to less.

Are there other -- I mean, this is not, if you will, a complete report. And there were some discussions that we have [had] and decided that it didn't appear that there were things that we should be doing that we're not doing now. It ended with Dr. Melius, as you heard, saying that he will do an early draft of the recommendations for the July Board meeting.

Josie, is there anything -- or Ted, are there things that you might want to add?

MR. KATZ: Sure. I can add some, and then Josie can follow me if I leave anything out.

CHAIRMAN KOTELCHUCK: Sure.

MR. KATZ: But several other things. One, I think DCAS is going to supply the Work Group with a list of the sites that lack TBDs, because there was some discussion about whether there's a correlation or an issue with sites that don't have any standing TBD but are done to other kinds of procedures, basically, for very small sites. But that's one deliverable that will be coming from Grady.

Another point of discussion, I think,

which was kind of important to the Subcommittee, which you raised, Dave, was the question of whether we couldn't forego or abbreviate the discussion of observations versus findings.

CHAIRMAN KOTELCHUCK: Yes.

MR. KATZ: Because, as you noted, we can spend quite a bit of time on observations even when we're trying to move through them quickly, and the question is whether that's really worth the time that's spent on that.

CHAIRMAN KOTELCHUCK: Right. And as I recall, we were told that there were, in sets 10 through 13, either Rose or Kathy reported that there were five observations that after discussion were turned into findings. And if we were not to discuss the observations and just have them internally discussed between SC&A and NIOSH or ORAU, that we would miss those. And that's a concern. And I'm not putting words in your mouth; I'm remembering, Josie, what you said, and I think that's an important point.

So dropping observations, we would miss perhaps -- well, I don't know what percent, but a

small percentage of the observations that turned into findings.

MR. KATZ: Right. And perhaps we can just get from SC&A exactly what that percentage is, because your question was, well, it may be a small percentage and is it worth it still just the same?

CHAIRMAN KOTELCHUCK: Right.

MR. KATZ: I think that's a valid question. The other thing I just left out that SC&A was planning to provide was they had done, and mentioned that they had previously done, an analysis of findings for four sites that SC&A thought might be sort of more efficiently closed, and they were going to share that with the Work Group. This is an analysis, I think, that they perhaps had already provided to the Subcommittee in the past. But in any event, Dr. Melius had asked to look at that analysis, too.

CHAIRMAN KOTELCHUCK: Okay. Good. Josie?

MEMBER BEACH: Yeah -- no, I'm here. I think you guys have covered everything. I can't think of anything that anybody missed.

CHAIRMAN KOTELCHUCK: Okay.

MR. MAURO: David, this is John Mauro.

CHAIRMAN KOTELCHUCK: Yes.

MR. MAURO: May I speak for a moment on something? I listened in to the conversation on Monday carefully, and in respect for the meeting, of course, I just listened.

CHAIRMAN KOTELCHUCK: Yeah.

DR. MAURO: But there was a subject that did not come up, and I think this might be a good opportunity for me to raise it, because it has been on my mind and you folks may want to consider it.

CHAIRMAN KOTELCHUCK: Okay.

DR. MAURO: When we do our dose reconstruction reviews, one of the subjects in our scorecard, we call it table 2, is "to be determined." What that means is that there's an issue before us on this particular case that we really cannot make a statement regarding whether or not there's a problem or not because it is currently being discussed by a Site Profile work group.

A great example, I think, that everyone's familiar with are things like neutron-to-photon ratios at Hanford, would be a very nice example. And because of that, we leave that as something to be discussed. And this is has always troubled me. What this means is that, I haven't done the count, but if we were to go over the 400 or so cases that we reviewed, I would not be surprised if there's a very significant fraction of those reviews that contain with them an item that says, "to be determined." Which means, in a way, it puts the Board in a difficult position because you're really not yet in a position to say that we've completed our review of that case because there are still certain unresolved issues related to the Site Profile.

CHAIRMAN KOTELCHUCK: You're absolutely right.

DR. MAURO: Now, I have a suggestion, with all due respect. I think that we have the tail wagging the dog. Let me explain what I mean. I believe that, besides the SECs, the single most important mission of the Board is to evaluate the

quality of the dose reconstructions.

Now, the whole idea of the Procedures, under Wanda, and the Work Groups, the Site Profile Work Groups, under a variety of Work Groups, they're there and they exist because they are a construct that is not required by the statute or by regulation, but they were created by NIOSH with very good intentions to develop the best science, to streamline and make consistent the process.

Now let me say where I'm going with this. But I do not think the fact that these issues which are being addressed under separate venues from the Dose Reconstruction Subcommittee should in fact prevent the Dose Reconstruction Subcommittee from completing their reviews.

Now where does that leave us? It leaves us in a position where it almost makes it impossible to report back to the Secretary regarding the status of the dose reconstruction reviews because so many of them are, what I would call, in a state of limbo.

Now that being the case -- get ready for this -- and this I'll often do this sort of throw

something on the table that could be quite controversial. I believe that the Procedures Subcommittee and all the Site Profile Work Groups, for all intents and purposes, are there for two reasons: to either support SEC decision-making or support the review of dose reconstructions.

I believe that, as we move through the process of issues resolution on a particular case, as we will be doing today, if there is an item, let's say it has to do with Hanford and it has to do with some issue that's undergoing debate as a Site Profile issue at Hanford. I believe that the Dose Reconstruction Subcommittee should give direction to the Site Profile [group] to resolve that issue immediately. And if it cannot be resolved immediately -- and this is where it may get a little controversial -- and where an answer cannot be provided such that you could close the issue out, it has to be determined that there is a failing here. That is, we have a subject that we are incapable of addressing without a great deal of research and resources and time to the extent that it's impeding the ability of the Board to fulfill

its mission.

I realize I just made a very controversial statement, but I feel it's essential that it be put on the table for discussion by this Subcommittee.

CHAIRMAN KOTELCHUCK: Okay. The question is whether that's more appropriate to be raised before the Methods Work Group. We will try to have a meeting before the July meeting in Idaho. But I don't think it's appropriate for our Subcommittee to discuss that now. That's my first thought.

DR. MAURO: I agree completely. I only bring it up now because I was sort of in a position where it really was not appropriate at that time, Monday's meeting, for me or anyone from SC&A to bring this issue up. We realized it was not our meeting.

CHAIRMAN KOTELCHUCK: Yeah, that's right.

DR. MAURO: But I see this as an opportunity, as an opening, quite frankly, for me to sort of voice my thoughts on these matters, and

certainly for it to be brought now, to hand it off to you folks to deal with it as you see fit.

CHAIRMAN KOTELCHUCK: Okay. Procedurally, I'm not sure how -- I understand, at the beginning of the Methods Work Group, it was said that this is a Board activity and that the other groups were there to answer questions, that is, ORAU and SC&A, so that you would feel hesitant to raise it. This is an issue that is important. I'm not sure procedurally how to move ahead. And, Ted, you may be able to help us.

MR. KATZ: Yeah, I'm glad to. Let me just raise this with Dr. Melius. I mean, first of all, I mean, I just have to say on the record, John Mauro, John, your interpretation of the statute is peculiar, I think, to start with, okay, in my perspective. And so I will raise this with Dr. Melius following this meeting and let him sort of think about what John has raised.

But, again, I'm not sure I concur with John Mauro's reading of the statute in the first place, and it's sort of a little bit odd for our contractor to be doing statutory interpretation as

part of a meeting, but we can -- I'll address this with Dr. Melius, I'll copy the Subcommittee on this so you can see what he's doing.

CHAIRMAN KOTELCHUCK: Good. I appreciate that. Also, I will be having to get in touch with Dr. Melius to correct my error from that meeting about having only 29 findings when we had 300. So I will also be talking with him, although I would appreciate, given that these are policy questions about how to proceed, that, Ted, you go ahead and raise this issue with Dr. Melius.

I will also be in touch with him regarding the analyses of the Excel file for 14 through 21. I'm embarrassed that I made the mistake. I must also say there were other people on the line with me and you had all looked at those files. If you catch me doing something that wrong, please say something [about] making an error. Just bring it to my attention, please, I don't care what the committee is, because that -- Jim is writing up a report for that.

Okay. Before we begin looking at some of the blind reviews, I would like to have a word

of personal suggestion. And that relates to the issue that we raised at the Methods Work Group about observations. I said I believed, over the past meetings, that we have ended up spending lots of time on discussions of observations. On occasion, they have been moved over to findings, and we have to think about that issue.

However, if I could just say, as Chair of the DR Subcommittee, I would appreciate as we move ahead that we try to keep our committee discussions on the observations limited to what needs to be said. As Chair, I've always felt it is not my role to -- you are all experts, you are all appointment Members of the Board. I have always found it difficult to say, "Gee, I think you're going on a little long," or this is an interesting discussion, because often the discussion of observations lead us into some either intellectually or scientifically interesting discussion. And we have a good discussion. And they may be satisfying to us -- they are -- but if we internally think about the discussion of the observations as a slight sideline to our main goal,

which is to do the dose reconstruction reviews, we might save some time.

And I will continue not to take the liberty of the Chair to say, "Gee, I think somebody is going on a little too long, at too great a length." But if I say this now I'm hoping that that will help us as we go ahead, to when we're doing our regular dose reconstructions, it will help us move a little more quickly and save a little time so we can go through more cases.

So obviously this is not an order, this is a personal feeling, as Chair, of what I'd like to do. And I hope it's taken in the spirit of suggestion. And, again, in no way do I intend in the future to cut people off because I don't find that part of the conversation useful.

Are there comments or suggestions? And I'm most open to including people saying, "Dave, you're wrong," if you feel that way.

MEMBER CLAWSON: Dave, this is Brad. I want to get a better understanding what you're saying about these observations, because to me these observations were not really a finding but

it was to give us a better quality product at the end.

CHAIRMAN KOTELCHUCK: Right.

MEMBER CLAWSON: Personally, I'll tell you, I feel that this group right here is where the rubber meets the road. We are the last of all this whole process and we're taking the opportunity to review all this. And I can personally tell you I think there's a lot of times these observations were just a clarification, they weren't really a finding or anything else like that, but they brought light to each one of these sites, because every one of these sites are so unique and so different, I think it's monumental task of what they have performed in this process to be able to make these things work out.

But it's not condemning nor excusing, but it's an observation and do we need to be able to look at this, because I feel that this committee is one that is set up to make sure that we ultimately are doing the best product out there that we can.

And my question to you is, so, what do you want to do with the observations if there is

the least bit of a thought that it is just either make it a finding or not?

CHAIRMAN KOTELCHUCK: My own feeling is, and is that what I'm really trying to -- what I'm concerned about are digressions in the discussion of observations, and lengthy digressions. And I certainly don't -- I mean, we have to -- at this point, and until there is some change in policy, we have to discuss observations, and we should. And for those limited number of cases where in fact we change an observation to a finding, that's important, and that may have some, you know, impact on the final decision.

So, I'm not saying we shouldn't talk about it, absolutely not. But what I am saying is, if we can try not to digress as we discuss those issues. The issues that are raised for observations, as I say, we will continue to discuss. It's just that I felt, over many meetings, a lot of times we spend a lot of time on them that, in my mind at least, in this case as one Member, don't move our discussion on very much. And I'm saying that I will not, as Chair, stop

anybody. I will absolutely not, I never have said to people, hey, this is -- if it's totally off the point, sure, I'll say something. But generally that's not the case. You know, they're interesting discussions.

And I'm just suggesting that if we can keep the discussion of observations on point and crisp it will save us a fair amount of time.

MEMBER CLAWSON: Yes, and I understand what you're saying. One of the things that's kind of interesting to me, and I'm sitting here and looking and listening to this that is coming through this, that the Procedure Review Committee or whatever the other one is called --

CHAIRMAN KOTELCHUCK: Methods.

MEMBER CLAWSON: -- Methods. So are they dictating to us of how to perform this?

CHAIRMAN KOTELCHUCK: No. Because whatever the Methods Work Group comes up with will go to the Board, and it is the Board, all of us, that will make decisions on changes. And that's why I'm saying whatever we discuss the methods will be brought before the Board. And at that point --

and by the way, this statement that I just made, or this concern that I just expressed about observations, is my personal, my concern as Chair of the Subcommittee. It's not, unless further discussion in the Methods Committee, it's not going to be part of recommendations.

We're still thinking about how to handle observations. And if we can speed things up without losing quality and being fair to all the claimants.

MEMBER CLAWSON: Well, because, you know, we've tried to make this a cookie cutter program that, you know, each one of these sites, this is how we've learned to do it. But I just want you to always remember that each one of these sites have their most unique little twists to them.

CHAIRMAN KOTELCHUCK: Right.

MEMBER CLAWSON: And I just don't want to lose that, because it is important.

CHAIRMAN KOTELCHUCK: Okay. I accept that. I agree and I'll try to be aware of this. Again, I'm not saying I'm going to cut people off, but I'm just asking as a suggestion.

MEMBER CLAWSON: Right.

MR. KATZ: Dave, and I don't want to prolong this discussion anymore because I know you've got other --

CHAIRMAN KOTELCHUCK: Right.

MR. KATZ: -- you want to get to the blinds. Brad, just to remind you, I mean, some context here why this review has come about. Right now, if we stopped -- if SC&A did no more dose reconstruction claims reviews, just the pile that's sitting on the shelf right now would take the Subcommittee about three years to get through.

MEMBER CLAWSON: And I understand that, Ted. I've been worried about this, too. But, you know, what I said earlier really is my bottom feeling of what this whole committee is for, because we're ultimately the one that looks at the final product at the very end of it. And I just want to make sure that we do -- I know that we're having trouble getting through these, and I wish I had a magic way that we could do it.

But also on the other sense, too, of the number that you came up with, Dave. One of the

things that I've seen, and I believe me and Wanda's been on this for quite a while, the product that has been coming out, in my eyes, I see as being so much better. NIOSH and ORAU have been producing a much better product because of a lot of this discussion and stuff like that. You know, we're still having them, but through the years, holy cow, I've watched so many changes.

And I think that we've got to give ourselves credit, too, that everybody is doing a much better job and it's a more focused task. It might sound like a lot of numbers, but you know what? I can tell you I've watched such a better product coming out.

CHAIRMAN KOTELCHUCK: Yeah. And I haven't been on the Board for so long, but certainly folks in the Methods Work Group echoed your feelings that things are improving significantly in the overall process of doing the dose reconstruction and for claimants.

So, with that --

MEMBER MUNN: Dave, this is Wanda. At the risk of falling prey to the 8515 rule, I'll try

to make my comments very brief.

I think sometimes the lack of institutional memory, and especially in critical Subcommittees like this one, make it a big impact on us and is sometimes telling. I think recognizing the amount of discussion and the amount of concern that was placed on the identification of the difference between an observation and a finding up-front could be very helpful for us. The decision was made fairly early on, and those of you in SC&A who have been through the entire process, if I'm incorrect in any of this, please stop me.

But those of us who went through that entire process were very clear that the purpose of an observation was an illumination for the reviewers and for us so that we would have just a slightly better understanding of what transpired in the completion of that particular report, of that dose reconstruction report. It was never intended to be an overlooking or a shortcut for some issue.

It might be illuminating for us, in that light, if we are going to be concerned about this

differentiation and how it has progressed through the years, it might be illuminating for us to take a look at those very few cases where a decision has been made by this Subcommittee to change the observation to a finding. That might tell us more than anything, any other type of discussion, if we look at those very few where that has occurred and identify whether that did in fact have a major difference, or even a significant difference that could be measured at all, in the outcome of what we were doing while we were actually doing the identification itself. That might be more beneficial to the discussion than another rehash of what we did many years ago when we established the original --

CHAIRMAN KOTELCHUCK: That sounds like a good idea to me. That is to say, to look at the five cases in sets 10 through 13 and see where they occurred. Actually, initially, it would mean getting a summary of those five cases.

MEMBER MUNN: Yes, it would. And identifying any difference in the PoC as calculated.

CHAIRMAN KOTELCHUCK: Yes. I think that's a good idea. Ted, is that something that is reasonable to task SC&A with?

MR. KATZ: Sure. I mean, I think Rose had already identified the five cases --

CHAIRMAN KOTELCHUCK: Right.

MR. KATZ: But, yeah, I'm not sure the point is whether the PoC changed. I don't think that was really necessarily the pertinent matter there. But, sure, she can supply the five cases if you want to look at those.

CHAIRMAN KOTELCHUCK: I think perhaps we could just distribute it to Members of this Subcommittee to look at, and then briefly, if it is brief, just go over that at the next meeting.

MS. GOGLIOTTI: Yes, absolutely. We can do that for you.

CHAIRMAN KOTELCHUCK: Oh, that would be very nice.

MEMBER MUNN: Even the makeup of this current Subcommittee may see that change differently than the Subcommittee did at that time.

CHAIRMAN KOTELCHUCK: It could well

be. Good suggestion, thank you.

MEMBER MUNN: Thank you.

CHAIRMAN KOTELCHUCK: So, we will do that. Let's go now to the blind reviews. And particularly, can we scroll into -- would either Kathy or Rose, could you put up the original comparison -- there we go -- of the blind DR reports and differences.

And the first two were -- maybe one of you would like to just comment again. We have a new Subcommittee Member, so I think it's worth reviewing, and all of us can gain from that, briefly, what the table says and where we are at.

MS. BEHLING: This is Kathy Behling. And if you'd like, I can make some comments.

CHAIRMAN KOTELCHUCK: I appreciate it.

MS. BEHLING: Okay. First of all, what I'd like to ask you is, during the last meeting we discussed three of the blinds and they were all from the 17th set, because we looked at those that perhaps were going to be somewhat controversial. And so we looked at Allied Chemical, as you see there, the first one under the 17th set.

CHAIRMAN KOTELCHUCK: Right.

MS. BEHLING: We also looked at the Fernald case and the Rocky Flats case, beneath the Hanford there on the 17th set.

CHAIRMAN KOTELCHUCK: Right.

MS. BEHLING: Now, as a result of that discussion, I believe the Subcommittee Members had some questions and had asked us to prepare a memo to maybe provide you with a little bit more detail on some of the topics that we covered on those three cases. And we have done that. Now, do you want to start this meeting by discussing, trying to finalize the discussion of those three, or would you prefer that we discuss new cases?

CHAIRMAN KOTELCHUCK: Now, I think that's for our Subcommittee to decide. My own feeling was that I would like to dispose, I believe, of two of them. I'm not sure we're prepared for all three. But to dispose of those that we could, and make a decision as to whether there was agreement between SC&A and ORAU on that.

What do other Committee Members think? Would you like to go complete the cases as best we

can from the last time?

MEMBER CLAWSON: This is Brad. I'd like to complete them and get them out of our hair, actually.

CHAIRMAN KOTELCHUCK: Good. That's my feeling.

MEMBER CLAWSON: Because [we] spent a lot of time coming back and refreshing ourselves with these, so I'd like to be able to get them finished up and out of the way. That's my take.

CHAIRMAN KOTELCHUCK: Okay. And any other thoughts?

MEMBER POSTON: This is John --

MEMBER MUNN: This is Wanda. I certainly agree, the more fresh the last discussion is in our minds, the easier it is for us to proceed, for me in any case.

CHAIRMAN KOTELCHUCK: Good.

MEMBER POSTON: I agree with Brad. John Poston.

CHAIRMAN KOTELCHUCK: Very good. And I think then -- Josie?

MEMBER BEACH: No, I agree.

CHAIRMAN KOTELCHUCK: Good. Then we're agreed. So the first one that we discussed, if I'm not mistaken, was Allied Chemical. And we received some material from Grady, so let's go to it.

MS. BEHLING: And there was also a memo that was sent out by SC&A -- let me see, what was the date of that memo?

DR. MAURO: April 29th.

MS. BEHLING: Okay. John Mauro sent that memo, so I think John's also prepared to discuss this.

CHAIRMAN KOTELCHUCK: Good. Now we will have to briefly review -- I mean, if that is the situation -- or maybe John should talk about -- well, I'm trying to think on my feet about how to start this part of the discussion on Allied.

MR. CALHOUN: Dave, this is Grady. And what I provided you is not going to have any impact on the case, given John's comments. So to me, you know, what we've got, what I think is the most relevant thing here is, you know, we based our case on actual information that we had on the

facility. We know that they processed a few pounds of uranium over about 20 years. Our methodology that I gave you used ten percent of the radon values typically seen in phosphate plants.

CHAIRMAN KOTELCHUCK: Right.

MR. CALHOUN: John's approach was to use the regulatory standard and basically just say, "Well, it had to be higher than what you said." So, I hate to be terse here, but unless we can come up with an actual basis with numbers and math on where that dose he thinks came from, I don't know where we can go with this. It's almost like saying, you know, let's base it on the DAC for uranium, and if you can't prove they didn't get it then let's assign it. It just doesn't work for me to base something on the EPA standard when we have at least some information.

Physically, it may not even be possible to come up with those kind of levels given the distribution of uranium that was used over a 20-year period. It just seems unlikely. And it would be, in my mind, a better discussion if we had a little bit more based on some numbers and some

dose calculations rather than just saying it just doesn't seem likely that it would be that low.

CHAIRMAN KOTELCHUCK: Maybe, in a sense, you're saying your position, and maybe we should let John or Rose or whomever, but John's here on the line. Maybe, John, would you like to respond? And that will refresh our memories also of the discussion that we had the last time.

DR. MAURO: Yeah, I would. And I believe that we have -- I referred to the problem we have as a conundrum. And we haven't seen this problem before, and it's a very interesting problem.

Now Grady is correct that there's an OTIB-43 that says, well, when you're going to do a dose reconstruction for workers who were at AWE facilities that were phosphate processing plants that were asked by the Atomic Energy Commission or the MED to do some work for them related to the uranium, and that happened quite a bit, they said, what do we do? Especially when those facilities were -- the work was done very early on, the early days of the weapons program. And here we have

people who were working at a phosphate plant and are asked to do some uranium work. And they're working with the phosphate itself to extract, as best they can, and do some experimental work, some uranium, because as we know uranium is elevated in phosphate rock.

Now here's the dilemma. Basically, NIOSH has adopted a surrogate approach to dealing with this, because measurements were not made, for example, at this facility, Allied Chemical & Dye Corporation in North Claymont, Delaware. So they used a surrogate approach, which is, "well, we do have data, lots of data, from Florida, and let's use that data."

Now, my problem -- and that data, when you look at it, the concentration -- first of all, the concentrations you observe of radon, we're talking of a radon problem in the air in the buildings that were processing phosphate rock in Florida were very low. They were often less than one picocurie per liter. And there's a reason for that, which was surprising. The reason is those buildings did not have walls. They were not

buildings; they were opened up to the general air flow of the atmosphere. So they serve as a very, very poor surrogate for a building in Delaware or in Illinois or in Idaho where phosphate rock is being processed but it's within a completely enclosed building where the radon is allowed to accumulate, the radon progeny is allowed to grow in.

So my concern is we have a dilemma. We really can't use the data from the phosphate rock industry in Florida, where they process the rock, because the measurements apply really to outdoor concentrations because of the way in which the buildings were structured and how the work was done. And along comes this facility in Delaware where very small amounts of uranium were produced. I agree with that completely. But there is a dilemma. The dilemma is we don't really know how much phosphate rock was processed in the research process, even though only a little bit of uranium came out of the process. And we agree completely with that.

That doesn't mean that there wasn't a

substantial amount of phosphate rock that was being worked on, experimented with, handled, et cetera, to get to the point where they got to the point they said, "Well, listen, we did everything we could but we really only could generate a few pounds of uranium." So the experiment failed.

Okay. So in one respect, one could argue that, well, they could have been -- even though there was only a very little bit of uranium produced, that doesn't mean they didn't play around with a considerable amount of phosphate rock. I don't know if that's true or not, but that's part of the play of the dimensions of the problem. So we're left with this circumstance, okay?

The next circumstance we're left with is, as it turns out, I went ahead and in sort of almost an innocent way said, let's just -- remember, the method I'm using we call Method B, which is called a common sense approach. I said, listen, let me see if I can just get through this thing in 15 minutes. I'm going to simply assume that the concentration of radon inside this building is on the levels that are not uncommon in

any building, never mind a building that might have handled some phosphate rock. And the number I picked was four picocuries per liter. I could have picked three, I could have picked two. In other words, the concentration that's in the room you're in right now is probably one or two, on that order. So I picked a very low number, and I happened to pick four because it was the regulatory guidance number.

And lo and behold, what happens? I end up getting a PoC of 64 percent. I said what do I do with this? I don't know -- we don't know what the concentration of radon is inside that building, but we do know two things: whatever it is, it's due to two factors. One, the radon that's there naturally, which could be a few picocuries per liter; and the radon that's there because phosphate rock was being processed. It's a combination of both, and we don't know how much is from -- you know, even if we had a number, some measurement, we wouldn't be able to discern how much of it was from phosphate rock, how much of it was from natural. It would be one of those situations where you can't

separate the two. And that has regulatory implications, by the way, when you can't separate the two.

Okay. So my case is one that's quite provocative and creates a conundrum. One, I don't think you could use the phosphate industry experience where they had open walls, open areas, where the concentrations of radon in the buildings were less than one picocurie, well below, often, one picocurie per liter indoors, a situation that actually does not even exist in people's homes. My basement right now is higher than one picocurie per liter, where I'm working right now.

So I'm stuck with a certain -- I'm not saying NIOSH is wrong. Don't get me wrong here. What I'm saying is we have a conundrum. It's impossible to deny this man his compensation, in my opinion, because we have -- we know that he may very well have experienced a few picocuries per liter of radon airborne for chronic, long periods of time while he worked at the Delaware facility. And that few picocuries per liter was no doubt due to some combination that came from

naturally-occurring radon in the building and from any phosphate that was handled in the building. And we don't know what that number is.

But what I can say, even if it was a relatively low number, it was enough to bring him over 50 percent. What do you do in that circumstance? NIOSH is not incorrect, but neither am I, in terms of what they're saying. And I'm not saying that I am correct. I'm saying that it's -- I, for one, will find it very difficult to deny this man compensation under these circumstances. And therein lies our dilemma.

So, really, it goes to the heart of, can you really use the phosphate industry experience as a surrogate for buildings in the north where the buildings are closed and where phosphate was handled? I don't think you can.

CHAIRMAN KOTELCHUCK: Before we start the discussion from the Subcommittee Members, could we have the first graph on, the one that gave the results for ORAU, NIOSH, A and B? There we are. So, there was a Method A -- let's see. I can't read it too well. That's good. Thank you.

So Method A gave 85 percent. And SC&A, using Method B, which you were talking about, John, right? That is to say, you were just using the four picocuries per liter.

DR. MAURO: Right.

CHAIRMAN KOTELCHUCK: You got 64 percent and NIOSH got 45.9. We're looking, in this case, I mean, we're looking at blind reviews. So for the Subcommittee, it seems to me we have to -- what we need to decide is, is there a disagreement between the NIOSH and the SC&A results? And then, if there is a disagreement, was ORAU wrong or is ORAU's choice not the better one?

Now, to be sure, just before we start, we chose this as the -- we started with the worst cases, right? We started with the cases where there seem to be some disagreement. And as folks looked at the rest of the table last time, I mean, there was agreement in quite a few of the cases, pretty good agreement. But this one, there wasn't. And this was, if you will, the worst case.

What I would like to ask is for Subcommittee Members to express their feelings

about what -- neither approach is wrong, but which is the better approach? And would folks have thoughts or opinions about that?

MEMBER MUNN: Dave, this is Wanda. Since I'm going to have to leave you, and since this is a battle which I have fought and lost repeatedly, I'm going to make my comments very quickly.

CHAIRMAN KOTELCHUCK: Okay.

MEMBER MUNN: What is not under discussion here, and which needs to be taken into consideration very, very carefully, is this is not an operation that took place out in the boneyard where rock is being crushed and there was particulate as well as radon flying around everywhere. This was a wet laboratory process. And, yes, it was an enclosed building, but what is also not being taken into consideration is the fact that none of these closed buildings were closed buildings in the way that we like to think of them. Of course, they were ventilated; they had to be ventilated for more than one reason. And the ventilation is, again, an unknown, but we know that it existed.

And without taking credit for the fact that this is a wet process, and therefore it does not have the kind of extrusion that one gets in the crushing process and the handling of other materials like phosphate, but also the fact that there is a very high probability that there was a high level of air motion through whatever rooms these things were occurring in. So, with that, I just -- it's probably just as well I'm not a part of the discussion here, because I'd probably rupture my spleen. But, please, just remember --

CHAIRMAN KOTELCHUCK: Well, thank you very much. And Wanda will return, folks, later after lunch.

MEMBER MUNN: Yes, I will.

CHAIRMAN KOTELCHUCK: And John, I know, has to leave during lunchtime. But, Wanda, when you're back, we'll have a -- we will have a quorum whether John returns or not, and I hope he is able to.

MEMBER MUNN: I hope so, too.

CHAIRMAN KOTELCHUCK: Good. Thank you.

MEMBER MUNN: Bye-bye for the moment.

CHAIRMAN KOTELCHUCK: Bye-bye. Other folks on the Committee?

MEMBER CLAWSON: This is Brad. I'd like to make a comment.

CHAIRMAN KOTELCHUCK: Go ahead.

MEMBER CLAWSON: You know, Wanda made her comment on that. And you know what, she's got a good, valid point. But I've got to jump back to my life that lives out where I'm at. I work in a facility that has wonderful ventilation and everything else. If I lose the least bit amount of it, every CAM in the facility will alarm within five minutes. We know a fair amount about these facilities and what went on with it. Radon has been an issue in all of these places.

To be able to take one from down in Florida that is wide open to the whole process of everything else like that is totally different than what it is going to be up north. And we all know that. That's a fact. If you want to deal with facts, deal with that.

Radon is a bigger issue in these

facilities where they're more closed up like that. Radon is an issue at every one of these facilities and every area is being a little bit different. My personal opinion is you've got to handle it different and you've got to look at it different, too. Just my point on it.

CHAIRMAN KOTELCHUCK: Did you finish?

MEMBER CLAWSON: Yes, I am.

CHAIRMAN KOTELCHUCK: Okay. I was persuaded, in the first presentation by Grady and John, I was persuaded by John that we can't move from what was largely an indoor operation to what was largely an outdoor operation.

It does seem to me that Wanda suggested that, first, people were working inside a lab. That is to say, she suggested that -- I thought I understood her suggestion that people in Delaware were working indoors in a lab. Is that -- first, which is the case? I mean, would either Grady or John want to say? I mean, in response to Wanda's concern that in fact they're both indoor?

DR. MAURO: No, the Delaware facility is indoor. Now, this now is a [identifying

information redacted], and I'd be the first to admit, who knows, maybe he never was indoors, okay? But we're operating on the premise that he was, that he was doing whatever service he provided on behalf of Allied Chemical indoors.

CHAIRMAN KOTELCHUCK: Okay.

DR. MAURO: Okay? And the nature of the work that was done there, as best I can tell from reading the SRDBs, and I have a whole section of attachments to my report that I sent in. I tried my best to say, you know, what were they doing there? Is it possible they were handling a phosphate rock in some quantity that may be more than simply the amount you need to make a few pounds of uranium? And I couldn't find that.

It may turn out that's all they did. All they did was handle that amount of phosphate rock necessary to produce a few pounds of uranium. Or it may be that they were doing a large amount of experimental work. Because this is what the whole purpose was: can we extract uranium from phosphate rock at amounts that are important to contributing to the Weapons Complex program? I

could not answer that question by looking at the SRDB.

So I'm left with the dilemma that, well, they handled some phosphate rock, and I don't know how much. But here's the real trouble, I call it a conundrum, is that even if it was a little, that meant it contributed a little radon indoors, okay? And we also know that there's probably a little radon indoors from naturally-occurring, you know, and we don't know that amount. And the two of them together represent the radon and its progeny that the workers that were indoors in this building were exposed to. And we can't separate the two.

And I came up with a number that, if you look at just the natural concentrations of natural background radon levels in buildings in Delaware, there's a large number of them that are above four picocuries per liter. And these aren't buildings that are handling any phosphate rock. These are just homes. And so I say, what do I do with this? I say, you know, I cannot pick a good concentration. I certainly cannot use the phosphate experience in Florida as a surrogate. That is just, as far as

I'm concerned, off the table.

So I'm left with a circumstance that says, what do I do? What do I assign? Is it possible this man experienced something above? I've got to tell you, there's no doubt he experienced something above one. I mean, just about everybody's got one picocurie per liter in their house.

CHAIRMAN KOTELCHUCK: Well, let me ask you a follow-up on what you're saying. Would working in a wet lab, how would that impact? And by the way, I'm not sure -- I mean, Wanda believes it was a wet lab. Apparently, if that is the case --

MR. CALHOUN: That has to be the case, because they did extraction.

CHAIRMAN KOTELCHUCK: Okay.

DR. MAURO: Now, does that eliminate the radon?

MR. CALHOUN: No.

DR. MAURO: Okay. So the point that Wanda was making was, because it was a wet lab, there should be no radon. Well, that's not, you

know --

MR. CALHOUN: It depends. This is Grady. And it really obviously depends on how long that the material is underwater, because we all know that radon has a relatively short half-life. And if it's trapped under there very long and can't escape, then it is going to decay and not be an exposure.

Now, just from my point of view, the fact of whatever the natural radon concentrations are in Delaware is completely irrelevant. It doesn't count, it's not going to be counted towards dose. It doesn't matter. The only thing that matters is the amount of radon that this guy was exposed to based on -- now, let me read this. This is from the Department of Energy, okay?

"Research and development in small pilot scale operations on uranium recovery from a phosphoric acid plant." Okay, they used less than 1/100th of 1 percent of the lowest level of the phosphoric acid extraction plants that we know of.

I go back to, it is much more plausible to base something, or to base your dose on some

number, which we have, which is a few pounds, than base it on an EPA protection standard.

Like I said, it's critical to understand it doesn't matter what the natural radon was in that area. We don't have that, ever. It's not included because it's not a part of weapons production. So unless you can show me that a few pounds of uranium concentrate, over 20 years -- that's the whole time that the few pounds was generated -- can give me high enough radon levels, it almost isn't worth discussing. Because I'm at least basing it on something. And you say that that's off the table, but basing something on four picocuries per liter and saying, "you know what, it had to be over one because everybody in that area was over one," that's irrelevant.

DR. MAURO: And that's why I call this a conundrum, because I can't argue with you on that. But what I can argue is that, whatever the level of radon was in that building, some of it was due to natural and some of it was due to the phosphate rock business they were in.

MR. CALHOUN: Start with that number

and do a calculation and show me.

DR. MAURO: And we don't know. We don't know what the concentration was, and even if we did --

MR. CALHOUN: If you know how much radon can be generated from, you can make some assumptions over how much a few pounds over 20 years was. You can make some bounding assumptions. That's where you've got to start, because that's all the information that we have.

DR. MAURO: Well, good, we're converging. Listen, I'm not disputing this. We're converging. I came away from reading the SRDB that we really don't know how much phosphate rock was handled. We know how much uranium was produced, but we don't know how much phosphate rock was handled and the degree to which experiments were run and what tests were run and what they did. But we do know at the end of the process, they were not very successful over those years in generating very much uranium.

So I don't -- and let's -- you may have information I don't have. And if you can say,

listen, they didn't really handle any -- I mean, the amount of phosphate rock they handled, it was virtually zero and therefore any contribution of radon that might have been airborne was miniscule, you know. And as a result, there was none, you know.

But even if there was some -- you see, here's the problem. Even if there was some amount that we can't define, it doesn't take very much for it to be enough to bring you over 50 percent. See, it's this combination of the radiosensitivity to radon carcinogenicity to the lungs. And the fact that we can't separate how much was it from natural, how much of it was from the process that leaves us in a place where you're going to tell this man, we're going to deny you because we know that whatever radon levels you were exposed to, it was so small it was impossible for it to contribute to your cancer. I can't say that.

CHAIRMAN KOTELCHUCK: Yeah. Grady, I'm reasonably -- I'm somewhat persuaded as a scientist and professional to say that it doesn't sound like it's likely that the work there is likely

to have caused his lung cancer. But I have to say that you -- I don't -- I do side with the argument that you can't compare the Florida outdoor site with the indoor site at Allied Chemical. And what -- I do feel that there's a policy question, not a question of give me a number and hard science, if you will. But the question is what is policy in worker's compensation, which I do -- I work with people dealing with worker's compensation, not in the radiation situation but in industrial and other, in the years that I've worked in the field.

And the policy always is, when there is scientific doubt then you have to find for the claimant. That [is] worker's compensation is not a scientific process only, it is a policy -- there is a policy about how to approach what we know and don't know in science. And I'm impressed that we really don't know. I do find that the 45.9 percent, based on what seemed to me were mostly reasonable assumptions on your part, you're trying to figure out a number, that that's a fairly high number, combined with uncertainty, how you extrapolate, how you -- what the data is from other

facilities.

So my feeling is that -- at this point in the discussion, is that there is a disagreement and that we probably should have compensated on the basis of a policy concern that the science just wasn't good enough. You did a good job.

MR. CALHOUN: This is all supposition and you're being swayed by its supposition. Start with the poundage, look up -- go Google how much uranium is in phosphate that is needed to come up with a few pounds over 20 years. That has to be your starting point. You can't start anyplace else and just -- because basically even though this is surrounded, the argument is surrounded by, you know, four picocuries, we're throwing out a bunch of numbers here, it's all -- I really don't think it's that low. And that is the entire basis of that.

CHAIRMAN KOTELCHUCK: Uh-huh.

MR. CALHOUN: It is. And to think something else is wrong, I think they need to come back with a calculation that's based on four picocuries -- or on the amount of phosphate rock

needed to come up with a few pounds of uranium concentrate. I just was Googling here quickly and it's out there. You can find out how much phosphate rock is, how much -- what the uranium concentrations are. And that seems to be the starting point.

And then you've got to spread that out over 20 years and you have to make some assumptions as to the size of the facility and say there's no ventilation.

CHAIRMAN KOTELCHUCK: Okay.

MR. CALHOUN: And then show me that that number is high. Because right now we have a basis and the only argument is I don't think it could be that low. It's -- you know, you're presenting it eloquently but that's the basis. And I need more than that, than to just say you're wrong.

DR. MAURO: Grady, the only place where I think we have a degree -- some disagreement, as a matter of fact, is the quantity of phosphate that was handled. You see, what you're arguing is over a ten-year period the amount of phosphate that was

handled was the amount that could have produced three pounds of uranium. I could -- I was looking for that. If I could have found that and it was -- if I could have found some language that said, we know that the amount of phosphate that was shipped there for processing over that time period was only the amount that you needed to get three pounds of uranium I'd buy your argument. I'd buy your argument in a second. But I couldn't find that.

So I'm stuck with the situation that I don't really know how much phosphate was shipped there and what they did with it. I do know that they only ended up with three pounds of uranium but that doesn't mean that they didn't work with more phosphate than that, you know. So I'm left with this dilemma.

I understand what you're saying and your science is good. But your premise that the amount of phosphate they handled there was only the amount you needed to make three pounds of uranium, I could not find any evidence of that. Now you may have some. If you do then you win --

MR. CALHOUN: But I prefer that you tell me that you win by finding a calculation that shows me the other way.

MEMBER CLAWSON: This is Brad. I've got a heck of an idea. Both sides of you are right, and this is where it comes into a conundrum, or whatever you want to say. But the bottom line, Grady, can you tell me for a 100 percent is there -- that they only used that much phosphate? Because this to me was a research facility. They were making mistakes, they were throwing away and starting over because it didn't work right. Their whole process, from what I read their premise was to design and help figure out how to be able to get this uranium out of the rock. That to me is telling me this is research that they --

MR. CALHOUN: I have confidence that we assigned him more dose than he probably got.

MR. KATZ: Dave?

CHAIRMAN KOTELCHUCK: Yeah.

MR. KATZ: I'm sorry, I don't really like to butt in on the substantive discussions and all. But I mean, it sounds like it wouldn't be

unhelpful if someone would just run the numbers along with Grady's assumption that only enough -- only so much was used for three pounds and even see what order of magnitude you're talking about there compared to the number of years that this [identifying information redacted] worked at the site. At least then you would, you know, would have a realm. And you know, if it were orders of magnitude apart that would tell you plenty because even if they threw away a lot of rock, they could have thrown away, you know, 100 tons more rock than would have been -- or what have you. But it feels like that would at least inform this discussion.

CHAIRMAN KOTELCHUCK: Yeah, that would give some order of magnitude sense. But Grady, you said you believed that that could be done. I don't know whether it's best to let SC&A or you to try to do that?

MR. CALHOUN: I can't tell SC&A what to do but I think that you could certainly make some assumptions and come up with some numbers.

MR. KATZ: I mean, Grady, do you -- we can task SC&A to do it but do you want to take this

on? Do you want to make some assumptions and lay that out so we see those figures or do you want us to task SC&A to do that?

MR. CALHOUN: I would prefer that they do it. But you know, like I said, you know, this is what we found that we found was a reasonable approach. And this is just one of those very few times when I just see no basis in the argument other than, nuh-uh. And I just -- I have a hard time swallowing it.

CHAIRMAN KOTELCHUCK: I will say, by the way, remember, I mean everybody, this discussion is not -- we're not doing a case and trying to evaluate what the PoC is. What we're doing is blind reviews and we're trying to see if there is a disagreement. Right now there is, right? I mean, there is -- in my opinion there is not much question, there is a disagreement between the two reviews.

But I would love to find out a little bit more. In a sense I would say, yes, there's a disagreement. It -- I guess, Ted, I need your help because I don't know whether to task SC&A or to say

Grady believes that we could estimate from the amount of phosphate that would be needed to generate three pounds of uranium, if he could do it. It sounds like the people at SC&A don't think they can do it.

DR. MAURO: Oh, no, no, you could do it.

CHAIRMAN KOTELCHUCK: You could?

DR. MAURO: In other words, to back out and say how much phosphate would have to be processed to produce three pounds of uranium --

CHAIRMAN KOTELCHUCK: That's the question.

DR. MAURO: -- that's a walk in the park.

MR. KATZ: Well, let's - can I just suggest, Dave -- Dave, can I suggest, here's what we can get from SC&A then. I think two calculations would be helpful because they would sort of bookend this question and then the Subcommittee could consider that. One could be the calculation John just reiterated which is how much does it take to produce three pounds of uranium and what is the picocurie exposure level of 20 years

of that production? And then the other bookend would be how much phosphate would it take to produce a level of picocurie exposure that would put you over 50 percent over those 20 years and that would be the other side of sort of the question. And then, you know, the Subcommittee can consider the reasonableness of the assumptions based on those two figures, at least.

DR. MAURO: I like it.

CHAIRMAN KOTELCHUCK: You could do that, John?

DR. MAURO: I like it. I think it would -- the way Ted's thinking about it is clean. It's clean. Then you have bookends. And then you say, okay, let's look at these bookends. But now you realize you will be stuck with the situation that says, we're within that distribution -- and let's say it's a spread by two orders of magnitude, whatever the number is. You're going to have these numbers and now you're going to have to say, okay, what do we do about that?

MR. KATZ: Okay. But it still gets you, I guess, more information to consider what the

reasonable judgment is.

DR. MAURO: Without a doubt.

CHAIRMAN KOTELCHUCK: And actually, that would be good. Why don't you do it? For the moment we are left with their -- in this blind review, there is a disagreement between NIOSH and SC&A. I mean, that's -- and if you do this and find out that you were over-estimating the risk, well, we'll talk about it. I mean, it's -- if you would do that and then report back at the next Committee Meeting? Or better yet, send us by email.

DR. MAURO: We have one more -- I mean, I agree with what you're doing and I hate to bring this up.

CHAIRMAN KOTELCHUCK: Go ahead.

DR. MAURO: It's painful. But we effectively went through this process where we tried to model the concentrations of radon indoors when we went through the Blockson Program and the ruling of the Board was that you cannot model the concentration of radon indoors. In other words, it was rejected. That is, there are very simple models that Bill Field voted, yes, we agree you can

come up with a model to predict what the concentration of radon is indoors giving -- given knowledge of what the throughput of the phosphate rock is through the facility. And we came up with a model. NIOSH adopted the model and agreed, in fact refined it and worked with it.

But at the end of the process, now we have a bureaucratic problem. The end of the process was that there was a ruling -- a vote taken, are we going to make a decision on compensation for the Blockson Facility based on a model? And the answer was, no, and as a result Blockson was granted its SEC.

MR. KATZ: Right. But that's an SEC petition and evaluating the outcome of that, I mean, I just -- I don't think that gets in the way of you giving this information to the Subcommittee to consider these judgments.

DR. MAURO: No problem.

CHAIRMAN KOTELCHUCK: Okay. That would be good. Okay, and I'll read through a little bit about Blockson. I've heard that name come up, that was decided before my time on the

Board.

So if you would do that then we can move ahead to a -- I think we can call the discussion on the Allied Chemical -- we can rest it for the moment until -- and we will -- you'll send us something in email and then we'll discuss it at the next Board meeting, right, as to whether the disagreement remains?

DR. MAURO: By the way, the calculations are so simple that it wouldn't hurt for -- I'll run one and Grady will run it and we'll probably come to the same numbers independently. We won't even talk to each other. We'll both come to the same numbers, we'll say, yep, I got it. There will be a couple of differences in certain assumptions on the content, what the percent of uranium is rock, and that's neither here nor there.

You know, we should not -- on these bookends, we should be pretty close to each other on one bookend and on the other bookend, and it would be a good QC check.

CHAIRMAN KOTELCHUCK: Okay.

DR. MAURO: If you'd like to do it.

And then you'll have these numbers. Or SC&A could do it by itself or Grady, because this is not a difficult calculation.

CHAIRMAN KOTELCHUCK: Let's have SC&A do it and we'll -- I think we can move on.

DR. MAURO: Okay.

CHAIRMAN KOTELCHUCK: And this has been -- it's been slow but remember for folks on the committee, this is the worst case, right? I mean, we started with the worst case first so hopefully the other ones will move more quickly and with greater agreement.

Wanda had to leave, she will be back, she can be back somewhere between 1:15 and 1:30 East Coast time. I was hoping that we would go until 12:30 and then break for lunch. After that John will be with us -- Wanda will be back and we'll have a quorum, actually we'll have a quorum even if Wanda is not back, which is great.

So two questions: One, do people feel they need a quick break now? It's five after 12:00 here on the East Coast. We were going to break at 12:30. Do I hear a request for a five-minute break

right now?

Okay. Let's take a five-minute break and we'll see you back at 11 minutes after 12:00 East Coast time. Speak to you in a few moments, folks. Thank you.

(Whereupon, the above-entitled matter went off the record at 12:06 p.m. and resumed at 12:12 p.m.)

CHAIRMAN KOTELCHUCK: Can we go on? May we now and start, start Rocky Flats? I believe that's the next one that we wanted to talk about.

MS. BEHLING: This is Kathy Behling. Yes, Ron Buchanan has prepared a memo on -- and I think you received it on June 16th and I think he's prepared to discuss that.

CHAIRMAN KOTELCHUCK: That would be good. And folks, we have a little over 15 minutes. Just to be sure, Ron, can you start us for the first 15 minutes and then we'll complete it after lunch?

DR. BUCHANAN: Yeah, sure.

CHAIRMAN KOTELCHUCK: Is that okay? Okay, fine. Good.

So let's go ahead then.

DR. BUCHANAN: Okay. This is Ron Buchanan, SC&A, and we're looking at the Set 17, Rocky Flat Plant blind dose reconstruction comparison. And we have -- when we were doing 17 we had Method A and Method B, you recall. And so we went through this previously and we came down to three issues. And we came down with these three: Number one was architecture of medical frequency. And in this dose reconstruction method, SC&A used the annual doses from the table in TBD-3, Table 3-1 page 8, which indicates that there was perhaps not a full availability of all the X-ray data and so to assume an annual dose. And so that's what we did in both A and B.

NIOSH elected to use the records that they were sent which was two X-ray exams. And so last time we discussed this I think NIOSH stated that they had a RFP guideline or it amended only those assigned that you received the DOE records for.

I looked at our RFP guide which is dated 2012 which states as what we did, that not all the records may be sent, you know, if it wasn't over

50 percent, which was claimant-favorable, or perhaps an over-estimate. And so that's what we did since this was not over 50 percent. And so at this point then we need to discuss if Grady wants to bring information forward that dates later than the guidelines we have of 2012.

And Grady, do you have any response on that?

MR. CALHOUN: I do not. I don't know, does Scott have anything on that?

MR. SIEBERT: This is Scott. Basically we do have the dose reconstructor guidance document that states historically Rocky Flats was not giving all their X-ray data to us. However, the point in time where they did start doing that, and we can also request it -- I'm looking up to see if I can find the date when that started to occur.

DR. BUCHANAN: The DR was actually done in November 2012.

MS. BEHLING: This is Kathy Behling. I believe there was also some conflict between -- is it PROC-61 and the guidance that was in PROC-61

and what Scott said that they were actually -- that the dose reconstructors were actually doing. So I think all we need to do is coordinate that if you feel you're getting correct records or all the records for the X-rays then that needs to be reflected in the procedures, both the TBD, I would assume, and this PROC-61 because I don't believe that that's the guidance in PROC-61.

MR. SIEBERT: We do need to update things to ensure that that's valid. However, that's why it's in the dose reconstructor guidance document, until we get the other document updated.

DR. BUCHANAN: Now what's your latest? My latest, and we don't always receive the updates on this, the Rocky Flat general guidance was November 20th, 2012. And it states that if it's a non-compensating case they're assigned annual, according to the TBD. Is there a later one than November 20 of 2012 that states otherwise?

MR. SIEBERT: There's a present version from even April of this year that's stating that RFP records would be going through the actual films and providing a list of all procedures. What

I'm doing is I'm digging with another person to see if I can find a date that they agreed to do that but I don't have that at my fingertips right now.

DR. BUCHANAN: Okay. Well, since this dose reconstruction was done in November of 2012 I would assume they were using the Rocky Flats Guidance of November of 2012 which does state to use the annual doses if it's non-compensatable.

MR. KATZ: Well, do we want to just come back to this point since Scott's searching for his date?

CHAIRMAN KOTELCHUCK: Yeah. Yes, because that -- we'll break soon and that will leave him a chance to continue to check it. I'm shortening your lunch, Scott, I'm sorry, but at least you'll have a little bit more time to look at it.

I will admit, I mean, there's one other question, while we're waiting on this and when we come back to this, and we discussed this last time but it still bothers me enormously, that the SC&A got a lower dose, total lung dose, and got a greater PoC. I mean, this is on the record, if you will.

I mean, this is a public document. I do not know how -- I do not know how to discuss this with a claimant. Why a lower dose would give a higher PoC? And could someone -- we did discuss this last time -- could someone -- Ron, is it possible for you to suggest how this could be?

DR. BUCHANAN: I would have to go back and look at that. I think that we did look at that previously but I don't have the answer right now.

CHAIRMAN KOTELCHUCK: I mean, in the first place, even if we use Method A which tries to reproduce as much as possible the ORAU effort, it flips. I mean, the result flips. We're getting a lower dose and then we flip the results.

MR. SIEBERT: This is Scott Siebert. Are you referring to Table 1 in that where it's showing that the PoC values?

CHAIRMAN KOTELCHUCK: Yes.

MR. SIEBERT: Okay. Remember, those are the PoC values from the first version that SC&A did. And this discussion came up because they had assigned -- most of that is due to the distributions that were assigned. We assigned missed dose as a

triangular distribution in accordance with our documented procedures and SC&A assigned it as log-normal with a GSD of three, if I remember correctly.

DR. BUCHANAN: That's correct.

MR. SIEBERT: And it resulted in a much larger PoC.

CHAIRMAN KOTELCHUCK: So that -- right. So those were both reasonable judgments. On the other hand the question is did NIOSH do what it was supposed to do? And the answer -- I think the answer is, yes, right? That you were supposed to do a triangular distribution?

DR. BUCHANAN: Yes.

CHAIRMAN KOTELCHUCK: And that SC&A felt that in their best judgment they wanted to use the log-normal, is that correct?

DR. BUCHANAN: That's correct. If you look at Table 2 -- yes, to answer your question --

CHAIRMAN KOTELCHUCK: Yeah.

DR. BUCHANAN: -- Table 2 does show, and in fact, that was our next issue of discussion item two was missed internal dose. And I know we

discussed this.

And that refreshes my memory, and that's what the next item was. And that is that the internal dose should be, it should be assigned as a triangle rather than the way we assigned it. So if you look at Table 2 you see that it falls back in line.

CHAIRMAN KOTELCHUCK: That's good. That is most satisfying. Because then there is the issue of whether the occupational medical dose but fundamentally doing -- using the triangular distribution which is, as I understand it, is that's what ORAU should have been using. Then they get a lower dose and the PoC is lower.

DR. BUCHANAN: Yeah.

CHAIRMAN KOTELCHUCK: Which is -- and we do not flip, if you will?

DR. BUCHANAN: Right.

CHAIRMAN KOTELCHUCK: And in fact, the Method B -- although Method B is really optional. I mean, we're supposed to be checking NIOSH in Method A which is to say Method A tries to reproduce the NIOSH result -- the procedure, the NIOSH

procedure. And so that is most satisfying.

Other Subcommittee Members have any comments about this? I'm really pleased to see it. And it gives me a lot of confidence in the process that you folks are agreeing on. Any other comments by any other --

MEMBER BEACH: This is Josie. I don't have any.

CHAIRMAN KOTELCHUCK: Yeah. Yeah.

MR. SIEBERT: This is Scott. Are you just asking about this or the whole case in general? Because I have --

CHAIRMAN KOTELCHUCK: No, no, I'm just asking about this.

MR. SIEBERT: Okay.

CHAIRMAN KOTELCHUCK: But this was something we discussed last time and it does seem to me that aspect of the discussion is resolved and resolved properly, that there is agreement between NIOSH and SC&A. And I'm always glad when there's agreement, particularly because we're looking at blind -- you know, blind case reviews.

Now it is now 12:25.

MR. SIEBERT: Dr. Kotelchuck, I do have the X-ray answer if you want to get that out of the way before we --

CHAIRMAN KOTELCHUCK: Yes. Yes.

MR. SIEBERT: We looked back and it was back in 2009 when we got the agreement from RF, Rocky Flats, to be sending us -- they went through all the film jackets as well and gave us all the information. It was February 2009. So we have been getting complete X-ray records since that time.

When it comes to the DR Guidance, I see what Ron is probably talking about as Part A under the Guidance for X-rays.

CHAIRMAN KOTELCHUCK: Alright. Would somebody please scroll up a little bit as we're talking?

MR. SIEBERT: But I believe in the DR Guidance document there is also a statement in that that states -- let me get the actual wording here. The first portion says, "X-rays listed in the DOE file may not be complete if it's for a compensable claim, that's fine. Use TBD defaults if the

claim's non-compensable."

The next portion says, "going forward, RFP records will be going through actual films and providing a list of all procedures."

So from 2009 on we've been able to use actual records. And we probably can clarify in the DR Guidance the specific date that that occurred. I agree that's probably a good way we should do that. But that's the case, it's been -- we've been getting full records since 2009.

CHAIRMAN KOTELCHUCK: And so that means in terms -- I'm not clear what the implication is.

MR. SIEBERT: So the implication for this specific case is we used only the medical X-rays that were in the record whereas the SC&A blind audit used, I believe, annuals based on the TBD rather than the actual X-rays that are in the file.

CHAIRMAN KOTELCHUCK: And you're arguing that you're correct?

MR. SIEBERT: That is correct.

MS. BEHLING: This is Kathy Behling.

And the problem is we are using a TBD which is supposed to be, according to the hierarchy of data, we don't -- I don't know, are the DR Guidance documents published? Is that something that we should be working from? And if not, then we have to have the same documentation and it should all be consistent.

CHAIRMAN KOTELCHUCK: I would like -- this requires a bit more discussion and I know that at least one person has to leave. Josie has to leave soon.

I would like to conclude right now and return to this as the first point of discussion after lunch. Is that okay, folks? Or lunch here, breakfast for some of the West Coast people. Is that okay, folks?

Okay. I would like to -- so I'd like to call this part of the meeting to a close and we'll return at 1:30, in an hour. We'll return at 1:30 East Coast time. And John, thank you very much. I do -- will you be back, John? Excuse me, John Poston?

MEMBER POSTON: I'm planning on being

here.

CHAIRMAN KOTELCHUCK: Well, wonderful. We look forward to having you. And then also Wanda will be back. So folks, have a good meal and we'll see you all at 1:30.

MR. KATZ: Thanks everybody.

CHAIRMAN KOTELCHUCK: Thanks.

(Whereupon, the above-entitled matter went off the record at 12:28 p.m. and resumed at 1:33 p.m.)

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

(1:33 p.m.)

CHAIRMAN KOTELCHUCK: So let us go back, let us finish the discussion hopefully on the Rocky Flats.

MS. BEHLING: This is Kathy Behling. Just to clarify the last comment that I made is when SC&A did our blind for this Rocky Flats case we followed -- we looked at the guidance in the Technical Basis document and also in PROC-61 which has an Attachment A on it. And that attachment says for a best estimate case, frequency per TBD Table 3.1 or actual records, if records indicate

more procedures than Table 3.1. So if you go into the Rocky Flats Occupational Medical TBD and you look at Table 3.1 it says for the time period that this person worked there to do annual. And that's what we did.

Now, all I'm saying is, if we don't -- these site-specific DR Guidelines as far as I know are not published or not something that we would be working with. And if the dose reconstructors are using that, that's fine. But if this change was made, if they had got confirmation from Rocky Flats back in 2009 I would have thought that by 2015 or whatever, we did this a year or two ago, that there would have been enough data in the documents that we are supposed to be using that, as a blind. We used the appropriate documents and we followed those documents by assigning an annual.

CHAIRMAN KOTELCHUCK: And Grady, you're --

MS. BEHLING: No, Scott.

CHAIRMAN KOTELCHUCK: Right. Grady, you felt like -- or Scott -- that you used the right one for that time?

MR. SIEBERT: Yeah, correct. We have the DR guidance documents. And I just want to clarify, the DR Guidance documents are also available to SC&A. I don't know if they were back when you did your blind. At that time however what we did is we keep them in the same folder as the tools. When the tools folder gets replicated over to the DCAS server where you guys can access them, the DR Guidance documents should also be being replicated over there so you should also have those available.

CHAIRMAN KOTELCHUCK: Well, it seems to me although there is disagreement, there -- it is not that the ORAU people did what was proper and used the proper procedure at that time. And to the best of their knowledge. And that there is contradictory information in the documents, right?

MS. BEHLING: The only thing I'm going to ask is what is the proper procedure? Because there is a hierarchy of data, of documents out there and typically if you have a Site Profile, you use the data in that Site Profile for determining. And so I would think that that should be consistent with

what the practice is. That's all I'm asking.

CHAIRMAN KOTELCHUCK: Yeah. And my feeling is that that's -- my guess is that this is not the only case where, with all of these documents around, that there are -- will be internal disagreements among -- within the documents, I mean among the documents.

MS. BEHLING: That is true. And in fact, when we do a dose reconstruction review, often that will become an observation. Now I don't know how you would like us to deal with that in the future, but should we continue to do something like that as an observation? I made mention of this point in Monday's meeting, just in order to be sure that NIOSH and ORAU are aware that there seems to be a conflict here and we're not sure which guidance we're supposed to follow.

CHAIRMAN KOTELCHUCK: Well, we would normally -- that would normally come up as a finding in the regular dose reconstructions, right?

MR. KATZ: As an observation it would come up.

MEMBER MUNN: It should be an

observation. The issue really is not who is right, the issue is what is the hierarchy. And if we're all working to the same hierarchy these things don't occur even if there are disagreements in the documentation.

MR. KATZ: This is Ted. I mean, it seems pretty clear, I mean so the documents are inconsistent and I think anyone would want their documentation to be consistent. So I don't think -- you know, no one's wrong here. There was confusion because of that inconsistency in the documents. I mean, so NIOSH did the right thing in how they did the dose reconstruction, SC&A did the right thing in following documentation that they thought was appropriate, that anyone would think was appropriate and they went down the wrong path because they didn't realize there was this other document that governed in this case. But I think it's simply repaired by making documents more consistent and I think it can be done.

CHAIRMAN KOTELCHUCK: And in terms of the blind case reviews there is no discrepancy. That is, there's a difference but there are

differences in all of the blind reviews. But if NIOSH used the proper procedure, even if that procedure later gets updated or we have a debate, fundamentally the two processes gave the same fundamental results, at least with respect to this, right? I mean, so far, correct? I mean, they're both -- they have both said that the numbers were under -- the PoCs were under 50 percent?

DR. BUCHANAN: Correct.

CHAIRMAN KOTELCHUCK: And people did things correctly, both group did things correctly and that's why we're doing blind case reviews precisely because this is a complicated -- these are always complicated calculations and we want to make sure that we're right. And that we don't deprive someone of compensation they deserve, and we don't give compensation that is outside of what Congress tried to -- those Congress tried to compensate.

MS. BEHLING: And as you can see on the Table 2 that it's showing the difference in the dose in both Method A and Method B, used procedures that we both thought were most appropriate and we came

up with the same dose and that was 294 millirem as opposed to 84 at NIOSH.

CHAIRMAN KOTELCHUCK: Yes. So now is there -- there is, I believe one other -- oh, is there one other item, Ron, that you wanted to --

MR. SIEBERT: I'm sorry, it just got -- can I jump in with just --

CHAIRMAN KOTELCHUCK: Sure.

MR. SIEBERT: -- point out one more thing about the documentation.

We agree wholeheartedly that we want to have the documentation consistent and Kathy, I'm entirely with you. The issue that we run into with Rocky Flats is there's an ongoing SEC that has been going on for quite a while and there was no point in updating the TBD until that is resolved and we can have the TBD reflect everything that comes out of the SEC.

That being said, we've agreed through the Subcommittee and NIOSH has given us as ORAU Team direction that the Dose Reconstructor Guidance, Guidelines, are used as an interim method until we can get the TBD updated. Once the TBD is updated

that Guidance document goes away because all that information is in the TBD again.

MS. BEHLING: Yeah, and -- oh, I'm sorry, Scott. Go ahead.

MR. SIEBERT: No, I --

MS. BEHLING: I agree with what you're saying. What I want to know then from somebody needs to tell SC&A should we be using the DR Guidelines as our first-tier document as opposed to the Site Profile? Or should be comparing them? How do you want us to proceed in future?

CHAIRMAN KOTELCHUCK: Does someone want to speak to that on the Subcommittee?

MR. KATZ: I'm sorry, Dave, can I speak to this?

CHAIRMAN KOTELCHUCK: Surely.

MR. KATZ: This is something I've sort of addressed generally anyway but let's address it specifically here.

In any circumstance, Kathy, where it's confusing because you see contradictory information, there is -- it is fine to contact NIOSH and find out what the deal is, why is it

inconsistent and what should -- you should be following. I think that would be the appropriate to do. If you find this case -- I mean, I don't believe you ever read the guidance, the DR Guidance or even were aware it was there. But if you had then you would have seen the inconsistencies. The thing to do would have been to contact NIOSH and say, what gives here? And that way it doesn't even become an issue to bog down the Subcommittee because you can sort it out. And you can still make an observation that the records, you know, the documentation is inconsistent although, you know, in this case as Scott explained, it's because of a timing issue, we're updating the documents.

MS. BEHLING: Right. Okay. And I appreciate that. It was just that the two documents that we looked at, PROC-61 and the Rocky Flats Site Profile were consistent. And as you said, we just didn't even know to go to these guidance documents. And it's not -- if I would have even seen it in the guidance document I would have still just based it on the way we've been conducting ourselves in the past, said to myself,

well, the Site Profile takes precedent. But I understand and I understand why it didn't get changed, because there is a lot going on with the SEC process, especially for Rocky Flats. But I just needed to know how we are -- you know, how everyone would like us to proceed.

MR. KATZ: Right. So when in doubt, just inquire would be the --

MS. BEHLING: Okay. And can I -- I don't want to hold up the process here but I just want to -- since we're on the subject about inquiring, I want to also be sure that we, that SC&A can contact NIOSH people. Is that correct?

MR. KATZ: That's correct.

MS. BEHLING: We cannot contact ORAU directly, is that correct?

MR. KATZ: I think that's correct. I think they have to -- that's their contractor and so it's best to go through Grady or Beth.

MS. BEHLING: Okay. Thank you.

MR. KATZ: Thanks.

CHAIRMAN KOTELCHUCK: And then, Ron, was there a further issue, the depleted uranium?

DR. BUCHANAN: Yes. I'll continue on with SC&A and we're still continuing on Rocky Flats. This would be -- okay, I just want to summarize that item number two there, we did discuss using the triangular distribution and we have used that and I made some corrections and we'll see that a little later.

CHAIRMAN KOTELCHUCK: Actually, you showed it to us earlier, I believe.

DR. BUCHANAN: Yeah, okay.

CHAIRMAN KOTELCHUCK: In fact, I remember, and that was very good.

DR. BUCHANAN: Okay. So that answered that.

CHAIRMAN KOTELCHUCK: Yeah.

DR. BUCHANAN: And so item three there, we have some internal dose differences on Method B. And one was that depleted uranium was used in addition to the plutonium. We discussed that last time and decided that was unnecessary over-estimate. And so I went back and reworked the case without that. And then the next item was again we used the triangle distribution for

internal missed dose. And went back and worked the PoC using the triangle instead of the log-normal.

And then probably the item that needs to be addressed is the plutonium-americium. We discussed last time that when we used the IMBA program that we had, we did not have the add-on feature, the option number 10 which compensates for americium 241 and so that gives us about double the americium intake that it should. And so NIOSH said that, you know, if you have that feature it would decrease your dose by about 55 percent of the intake value, of course the dose. And so what I did is I went back and reworked these cases with this information and came out with Table 2 which you see is consistent with the methods we used.

CHAIRMAN KOTELCHUCK: Could somebody scroll into Table 2?

MS. BEHLING: Excuse me. This is Kathy. And Ron, I want to ask a question here because you've been closer to this. You said you reworked it but we still do not have that add-on. You just reduced the doses by 55 percent, is that correct?

DR. BUCHANAN: Right. I just manually did that. We did not have the latest IMBA program with the option number 10 that does that automatically. That's correct.

MS. BEHLING: We don't have that yet.

CHAIRMAN KOTELCHUCK: Oh, alright. And that's okay. Is that something you're going to get?

MS. BEHLING: I don't know how we go about -- do we talk to the IT people? I'm not -- because our version of IMBA was downloaded to our government computers through the IT people. I don't know why we don't have some of these add-ons.

DR. BUCHANAN: Maybe Ted can address that.

MR. KATZ: Well, yeah, I think for any -- you would have gotten that through DCAS, I think, those downloads, not from the general CDC computer support. So in that case, I think you go back to them and ask them for updated software.

MS. BRACKETT: This is Elizabeth Brackett. Can I ask you what version you have? Because this is something we've had for a very long

time and it's something you have to turn on. I don't believe it's an add-on, it's something that needs to be turned on.

DR. BUCHANAN: Well, in our edition it gives you the options at the top and option 10 is not available in our IMBA edition.

MS. BRACKETT: It's grayed out?

DR. BUCHANAN: It's grayed out, right.

MS. BEHLING: Perhaps we're not doing something correctly. If you could provide us with maybe a step-by-step, perhaps we're just not even -- we don't know how to --

MR. KATZ: Maybe we could just do this offline, though.

MS. BEHLING: That's what I meant.

MR. KATZ: If you don't mind, Kathy --

MS. BEHLING: Of course.

MR. KATZ: -- or Ron, whoever is sort of going to be the user, if you can get in touch with -- through Grady, whoever can help you from ORAU or DCAS sort this out. I mean, I agree you need to have the right software and you have to know how to operate it or get help with that.

MS. BEHLING: Yeah. Because actually I thought that Scott had at one point in time given us some instructions and when we tried to follow that we couldn't -- we still couldn't implement this add-on or whatever it is.

MR. KATZ: Right. So if we can sort this offline and not now.

MS. BEHLING: That's fine.

MR. KATZ: Thanks.

DR. BUCHANAN: Yes, that is -- that completes my information that I had for the Rocky Flats blind case.

MEMBER BEACH: Dave, this is Josie. Let me cut in and say I've been back online for about ten minutes.

MR. KATZ: Okay. Thanks, Josie. Dave, do we still have you?

CHAIRMAN KOTELCHUCK: Hello. Dave Kotelchuck back online.

MR. KATZ: Okay, good.

CHAIRMAN KOTELCHUCK: Was everybody else okay? Was that just my phone?

MR. KATZ: I think it was just you.

CHAIRMAN KOTELCHUCK: Good. Okay, I went down and I thought -- okay.

So I left it at the plutonium-americium discussion. I don't know if you've talked since. The --

MR. KATZ: So Dave, the rest of the talk after that, that was settled, which closes the third finding I think, if everybody is in agreement with all that.

CHAIRMAN KOTELCHUCK: Yes.

MR. KATZ: Then everything else we've discussed is a process matter with software and you're okay, you don't need me to repeat it to you.

CHAIRMAN KOTELCHUCK: Very good. So we have -- for the Rocky Flats we have blind dose agreement between the two parties after our discussion and that's good, correct?

DR. BUCHANAN: Yes. That's right.

CHAIRMAN KOTELCHUCK: Okay. Now then I think we're ready to go on to Fernald.

MS. BEHLING: Excuse me just one second.

CHAIRMAN KOTELCHUCK: Yes.

MS. BEHLING: Let me just ask a question.

Since Bob Anigstein and John Mauro are on, did you want to go back to the Allied Chemical?

CHAIRMAN KOTELCHUCK: Oh, I'm sorry. Right. You folks mentioned that. I'm sorry, they had mentioned that to me before and I forgot. In the anxiety of trying to get my phone working again I overlooked that.

We did want to go back. We have the data that we were looking for for the Allied Chemical case. So can we go back to the Allied Chemical case now?

DR. MAURO: This is John. I'd be glad to give you the 30-second sound bite and the details. Bob Anigstein's on the line, he actually ran the program.

DR. ANIGSTEIN: Yes. I'm just in the process of sending out an email. Shall I do it or shall we just talk?

DR. MAURO: Well, let's talk because this is very unofficial and we did it on the back of the envelope over lunchtime. But I think we got

the numbers for you. And I'll give you the bottom line and keep it real simple.

CHAIRMAN KOTELCHUCK: Before you do the bottom line I wonder if somebody would scroll the screen up back to Allied. Back to that first graph with Allied on it. Wonderful. Okay, thank you.

Do go ahead, John.

DR. MAURO: Okay. Grady is absolutely right in the respect that, if all they did -- and stay with me now -- is produce ten pounds of uranium, and we did it on the per-year just to make life simple for the purpose of this conversation.

DR. ANIGSTEIN: We did all in one year.

DR. MAURO: We did it all in one year. You generate -- in other words, you push through the ore and at the end of the year you produce ten pounds of uranium. What would happen is you would have a chronic concentration of radon in the air during that year of 4 times 10 to the minus 3 picocuries per liter, just as we suspected. I did not disagree with that as you recall. So Grady is 100 percent right. You know, if all they did was

process enough ore to get ten pounds of uranium, and I did it -- this happens in one year.

DR. ANIGSTEIN: And assuming 100 percent recovery from the ore.

CHAIRMAN KOTELCHUCK: Excellent.

DR. MAURO: Okay. Now the other -- on the other extreme, okay, if you were going -- if you were in an operation that caused you to have four picocuries per liter, my number, you'd have to push through 46,400 tons of ore per year.

CHAIRMAN KOTELCHUCK: Okay.

DR. MAURO: So you'd have to push a lot -- so really he difference is --

CHAIRMAN KOTELCHUCK: Unreal.

DR. MAURO: Yeah. Now it's not so unreal when you look at -- I'm not defending myself, believe me.

CHAIRMAN KOTELCHUCK: Right.

DR. MAURO: Blockson pushed through 300,000 tons per year but it was in production mode.

CHAIRMAN KOTELCHUCK: Right.

DR. MAURO: So just to give context, the -- there's no doubt that Grady is correct if

they only pushed through enough ore to make 10 pounds. There is no exposure to radon, it's 4 times 10 to the minus 3.

CHAIRMAN KOTELCHUCK: Right.

DR. MAURO: If they pushed through as much as 46,000 tons per year, which is a big number, then you could get four picocuries per liter. So that gives you your bookmarks and on that basis I believe you're in a position to make a judgment.

CHAIRMAN KOTELCHUCK: Absolutely. And it's pretty clear that is wonderful, in that we have agreement and that if anything since the 4 times 10 to the minus 3 was to make 10 pounds of uranium, far more than -- generously more than the amount that this reported, a few pounds, then Grady and ORAU certainly were generous. And the 45.9 percent represents an over-estimate, if anything, which is exactly what was thought that it might be. So to my mind, this is resolved. There is agreement.

DR. MAURO: Could I just make one clarification? Keep in mind the only thing I looked at was radon and I stopped. I believe,

Kathy, there were other sources of exposure that gave the numbers that we got and they got that was -- that differed. So generally --

DR. ANIGSTEIN: John --

DR. MAURO: Yes?

DR. ANIGSTEIN: Can I just add --

DR. MAURO: Absolutely.

DR. ANIGSTEIN: -- to what you're saying. What about the uranium and radium dust concentrations?

DR. MAURO: And others. That's the point I want to make so that we make sure that we don't too quickly leave.

What we have here is a demonstration that, in the grand scheme of things, it doesn't seem likely that they pushed through 46,000 tons to generate 10 pounds of uranium on an experimental basis. So I have to tip my hat to Grady from that perspective and I agree on that.

Now what -- the thing we're not done with is that the lung dose -- now we just sort of put to bed the radon issue. There may still be issues in terms of the dose reconstruction blinds

that transcend the radon issue, that goes toward more, let's say, what Kathy had done. And she being the much better -- because we did still come up with differences. We just put to bed one item that I brought up but I think there are other items under the Method A that are, to some degree, in dispute. I'm not sure. So I'd like to ask Kathy if she is in a position to address if there are differences related to other exposure radionuclides.

CHAIRMAN KOTELCHUCK: Okay.

MS. BEHLING: Okay. Yeah, I can briefly address that. If you want more detail Doug can probably help me out here also.

But one of the things, when Doug actually did the Method A blind and the approach that he used, again, NIOSH had used the ten percent of the OTIB-43 data. And Doug actually used -- he used Table 4.3 -- 4-3 of OTIB-43 plus he used ratios associated with other radionuclides and he selected surrogate data from the Blockson TBD for the operational period. And then during the residual period he used the depletion data from the

OTIB-70.

So that -- and we came up with -- Method A also came up with some very high doses and perhaps we need to discuss this in a little more detail, if it's necessary for the Subcommittee. But the thorium, uranium-thorium dose for the operational period, it ended up being 93 rem. And the uranium-thorium for the residual period was 24 rem as opposed to NIOSH coming up with an operational dose of 15 rem and 88 millirem for the residual period. And again, it was because of them using this ten percent of the OTIB-43 data.

CHAIRMAN KOTELCHUCK: uh-huh.

DR. MAURO: I'm sorry to interrupt.

And that did make a difference in the compensation decision?

MS. BEHLING: That was the primary dose, the internal dose, yes.

DR. MAURO: Right. But what I'm saying is, the difference is that you also came up with a dose that resulted in a PoC above .5 while NIOSH came up with a dose below .5?

MS. BEHLING: Correct.

DR. MAURO: That's why I'm saying it's important. Notwithstanding the radon issue.

CHAIRMAN KOTELCHUCK: Okay. Let's put up the -- good, let's put up the report.

I recall that as the only issue. So Grady or -- what do you say to this?

MR. CALHOUN: I say that I focused entirely on radon and I can't speak intelligently and quickly on the uranium-thorium.

CHAIRMAN KOTELCHUCK: Okay.

MR. CALHOUN: Sorry about that.

CHAIRMAN KOTELCHUCK: No, that's okay. And to me, that's just come up. I haven't reviewed that report as I wish I had.

Do we want to -- does the Subcommittee want to go back and take a look at the -- we'll go back and take a look at the report and meanwhile, Grady, you will look at the uranium-thorium issues and report back to us next time?

MR. CALHOUN: Yes, I will.

CHAIRMAN KOTELCHUCK: Okay.

MR. CALHOUN: As a side note, completely aside, I just want to let you know I just

forwarded some IMBA instructions to Ron and Kathy --

CHAIRMAN KOTELCHUCK: Good.

MR. CALHOUN: -- but it's seems just based on these discussions you may not have that available. But at least try it and then let me know what version you have.

CHAIRMAN KOTELCHUCK: Right. Good.

MS. BEHLING: Thank you.

CHAIRMAN KOTELCHUCK: Good. So we've resolved the radon issue which was keeping us apart last time. So we have one more piece to see if we will have agreement.

So I believe we are ready, unless -- well, let me ask Subcommittee Members, does anyone want to have anything to say before we leave Allied?

MEMBER MUNN: I think your choice is correct, Dave.

CHAIRMAN KOTELCHUCK: Yeah, okay. Good. And I will gather from your comment that, on the discussion, that you were not -- you are happy to have reached agreement, if not swallowed your gorge because you though we all disagreed with

you?

MEMBER MUNN: Yes, that's correct.

CHAIRMAN KOTELCHUCK: Right. Okay, well that's good. I'm always happy when we all agree, at least so far. We'll come back to uranium-thorium.

MS. BEHLING: This is Kathy. Can I just ask a quick question?

CHAIRMAN KOTELCHUCK: Sure.

MS. BEHLING: Because I'm confused. So is NIOSH going to respond to the internal dose or is SC&A supposed to write a memo also on our approach? I'm just --

MR. CALHOUN: The ball is in my court right now.

CHAIRMAN KOTELCHUCK: That's right. Correct.

MS. BEHLING: Okay. I just wanted to be sure we --

CHAIRMAN KOTELCHUCK: Right. Grady report, yeah.

MS. BEHLING: Okay. Thank you.

CHAIRMAN KOTELCHUCK: Good.

MR. KATZ: Could I just -- before we move on, just to expedite things, so once Grady responds, Kathy, you'll respond and we'll -- that will be distributed to the whole Work Group and to the staff and you folks. So please once Grady responds, if you can do a memo there --

MS. BEHLING: Okay.

MR. KATZ: -- that takes into account how he responds and then puts out whatever your view is.

MS. BEHLING: Okay.

MR. KATZ: That would be good. That way we'll have that ready for the next Subcommittee meeting.

MS. BEHLING: Right. Great.

CHAIRMAN KOTELCHUCK: Okay. And hopefully we'll get that resolved next Subcommittee meeting.

MS. BEHLING: Okay.

CHAIRMAN KOTELCHUCK: Now I believe we are ready to go to Fernald.

MS. BEHLING: Yes. Fernald was presented by Doug last time and there were several

issues I believe that you wanted some clarification on. He prepared a memo now, it just was sent out yesterday and I think that Nancy got us a PA cleared version this morning. So Doug, are you in a position to discuss this memo?

CHAIRMAN KOTELCHUCK: If I may just as we start, for everybody, let's go back to that very first table that we started out with with all of the eight blinds that we're considering and just take a look at Fernald again and see what the results were that SC&A and NIOSH both agreed that this was not compensable. And now do go ahead. Now you'll put the report on on the screen? Thanks.

MR. FARVER: Okay. This is Doug Farver. And I'll kind of walk you through the issues that I believe were in question.

It is my understanding that there were questions about the occupational medical dose and the internal doses. Those were the two areas that are covered in the memo and you might want to put the memo up.

MS. BEHLING: It's there, Doug.

MR. FARVER: Oh, it is up?

CHAIRMAN KOTELCHUCK: Yeah.

MR. FARVER: Oh, it helps if I look at the right screen.

MEMBER MUNN: We're looking at Table 1.1.

MR. FARVER: Okay. Table 1.1, we're talking about the occupational medical doses. NIOSH and SC&A both used the same number or Method A used the same number of exams, 8 PA. 1 lacked exam. Method B used 6 PA exams so that's not a big difference.

The NIOSH dose values that were in the workbook were the same values that were in Tables 3.7, 3.8 of Rev 1 of the Technical Basis. SC&A Method A used 026 and Method B used Tables 3.14 and 3.15 of Rev 0 of the TBD, Medical TBD. Table 1.1 shows the difference in doses.

For the DR, for the dose reconstruction that we looked at, it was completed in July 31st, 2012. Now, after that there were more cancers added and a new version was produced later. But we were looking at the 2012 version. So how many

-- you can see the three references I mentioned and their effective dates.

Now at the time of 2012 and when Rev 00 was effective and OTIB-6 was effective, and I will mention that PROC-61 Rev 3 was also effective from 2010.

But Rev 1 of the TBD didn't become effective until two years after this dose reconstruction was completed and that was a little confusing. Why would the workbook contain values that aren't going to be out for two years?

MR. SIEBERT: And this is Scott. Would you like the answer to that?

MR. FARVER: I think I'll get there.

MR. SIEBERT: Okay.

MR. FARVER: And as it turns out, it's not that they did anything wrong because they actually followed the guidance set forth in Attachment C of PROC-61 along with the X-ray parameters that were in the Technical Basis. But I did not find those numbers published anywhere. You know, they might have done the calculations but I did not find those numbers published anywhere.

So, Scott, maybe you could help me, were they published somewhere other than in the workbook?

MR. SIEBERT: They did not need to be published because all they were doing was taking Rev 0 of the TBD and applying the methodology of Procedure 61 to the values and getting the consistent numbers which, as you pointed out, we've been -- instead of having that kind of convoluted way to get there, we then updated the TBD to reflect those numbers directly later on. However the methodologies were in place during the time the dose reconstruction was done.

MR. FARVER: And I understand completely. But you kind of see the difficulties when you try to reconstruct a case here and you're trying to use documents that are in place and effective. And you go to OTIB-6 and you go to the Technical Basis Document that's in effect and those are the values you would typically use, especially since OTIB-6, you've got doses published for all the different skin cancer sites.

So for our part, there is no way we would have come up with those numbers, the same number

NIOSH did because they were not published anywhere.

MR. SIEBERT: Right.

MR. FARVER: The method was published but not the numbers. That's all I'm trying to point out.

CHAIRMAN KOTELCHUCK: Right. That sounds more like a finding that the folks at NIOSH used a correct procedure with data that they knew but had not written up or put into Rev 1. And so understandably you would get different results.

MR. SIEBERT: This is Scott. I take exception to that. There is nothing wrong with the documentation at the time of the dose assessment. Procedure 6 or OTIB-6 is for claims that have sites that do not have TBDs or there's not specific information. This site, Fernald, had a TBD which had the entrance skin doses which were to be used. And Procedure 61 was in place to tell you how to apply those to various skin locations.

Now I agree it's not necessarily straightforward at the time which is why we updated the TBD to make it easier. However, all the documentation in place at the time of the dose

reconstruction could be used to verify those numbers. I went back this last week and actually hand calculated to ensure that I could recreate that and, yeah, it's workable.

CHAIRMAN KOTELCHUCK: Okay. Alright. Any other comments or --

MR. FARVER: It's just from a modeling point of view which is very difficult to audit something like that when it's -- you reference the Rev 00 TBD, reference the OTIB-6 Rev 4 in your dose reconstruction and you reference PROC-61 in your reconstruction. So now let's guess where the numbers are coming from. It's very difficult to go back and try to determine where you got your numbers when you referenced many documents in the same paragraph for these same doses.

CHAIRMAN KOTELCHUCK: Okay. I understand, at least I feel like I understand. But the procedures for NIOSH were correct and eventually the differences between your calculations and theirs don't -- do not give dramatic differences? That's fine. I mean, to me this is -- this aspect, this issue seems reasonably

settled and I can understand why there's a difference. But that there was not an error in either case.

MEMBER MUNN: It's true, the language that was used is also correct. However, auditing that type of activity is difficult. One can see that.

CHAIRMAN KOTELCHUCK: Yeah.

MEMBER MUNN: As long as we have the clarification before us respective of this Subcommittee, that's acceptable.

CHAIRMAN KOTELCHUCK: I agree.

MR. FARVER: Okay. We move on to the second item which would be the internal doses. You can see in Table 2.1 the doses for Methods A and B in NIOSH. Only NIOSH calculated doses for thorium and the other three did the uranium and the contaminants. So we'll talk about the thorium doses first.

CHAIRMAN KOTELCHUCK: Okay.

MR. FARVER: Before we had a baseline fecal sample for thorium and several chest counts throughout the years. And what they did was

proper, they went back and calculated a missed dose based on .4 nanocuries of thorium in the MDA and came up with the chronic impact and dose. And that was done. SC&A did not do that.

And since I did Method A I can tell you why I did not do that.

CHAIRMAN KOTELCHUCK: Okay.

MR. FARVER: And that is because I missed it in the CATI report where the employee said that he worked at a Plant 6, I believe, thorium processing for a couple years. And I screwed up so I admit it.

CHAIRMAN KOTELCHUCK: Okay.

MR. FARVER: Now move on to the uranium in the recycled doses.

CHAIRMAN KOTELCHUCK: Alright. Let's scroll to that.

MR. FARVER: And in this one, NIOSH and SC&A Method A were pretty similar. They assigned acute intake from the elevated bioassay data and then they applied a chronic intake for the missed dose. Most of the results were less than the detection limit. There was one that was right at

the detection limit and one was 18 micrograms per liter, a little higher than the 14 micrograms per liter detection limit. But most of them were less.

So we both got that very similar. NIOSH used two of the elevated data, the 18 and the 14 micrograms. We did not use the 14 micrograms per liter, we just modeled it off the 18 micrograms for acute intake. I don't think it really affected it that much. And then we did the underlying missed dose for our doses.

And Method B, they just assumed the chronic Type S intake from 83 through 97 based on I think it was the MDA. So that's the basics behind those two. NIOSH chose Type S uranium, SC&A Methods A and B chose Type S uranium. Then the contaminants were added in.

Now the underlined portion, the key difference between NIOSH and SC&A Method A is in the collection of the radiation weighting factors and the remainder organ selection. In IMBA there's two little icons in the upper left side of the screen. One says, I believe it's ICRP default and the other is CFR default. And depending on

which one of those you choose it will determine whether you're using the CFR weighting factors or the ICRP weighting factors when it comes to dose calculations. And I believe this is correct.

If I get this too wrong, Scott, please yell at me, but I believe that's the way it works.

And then the little italics portion is a note that's in the IMBA documentation and it talks about the users for the U.S. and the 10 CFR 835. And really, I didn't think there's that much of a difference in the dose. As it turns out, we'll see that that can make a big difference.

When you recalculate it, like for example the skin dose for the year, it's from 37 millirems, it will pretty much cut it in half to 17 millirems just by the selection of the weighting factors and partitioning rules and so forth. So that explains that big difference.

Now which is correct?

MS. BRACKETT: This is Liz Brackett. I would like to jump in here.

MR. FARVER: Well, I mean, I know which is correct, Liz. I mean, I can tell you it goes

back to 42 CFR something-something, Part 82, something?

MS. BRACKETT: Well, actually, no. There's two issues here. One, the 835 tissue weighting factors that are in IMBA are actually old ones. IMBA was written in the late '90s or mid to late '90s and the 835 weighting factors that are in there are from ICRP-26. It's not the ICRP-60 weighting factors. So they wouldn't be correct if they were used. But different weighting factors don't have any impact on our calculations because they're only applied to effective dose and we only look at organ dose so there is no weighting factors applied to the doses.

MR. FARVER: Well, it's the combination of the weighting factors and the partitioning rules and the remainder rules.

MS. BRACKETT: But the remainder -- none of those impact organ doses. And I think we need to see your IMBA file because when I run, I try switching between the two of them and I get absolutely no difference at all in the organ doses. It only has an impact on the effective dose.

That's the only time that any of those rules come into play.

MR. FARVER: Well, the only change I made was I selected the ICRP default instead of the CFR default and it cut it down by 45 percent.

MS. BRACKETT: Right. Like I said, I tried running it both ways and I got no difference. But I didn't have the same file you did so I don't know. I think we really need to see your IMBA file.

MR. FARVER: Okay.

CHAIRMAN KOTELCHUCK: I'm not sure the Subcommittee needs to see the IMBA file.

MR. FARVER: No, no, no, I will email that to Grady and then he can distribute it.

CHAIRMAN KOTELCHUCK: Right. Okay.

MS. BEHLING: This is Kathy. We also made mention earlier that the IMBA, version of IMBA that we have may be different than what NIOSH is using.

MS. BRACKETT: Right. But these, the weighting factors are not applied to organ doses.

MS. BEHLING: That's true. Okay.

MS. BRACKETT: That might make the

difference.

MS. BEHLING: You're right. Yeah.

CHAIRMAN KOTELCHUCK: Okay.

MR. SIEBERT: This is Scott. Just one thing from a procedural point of view, I just want to point out regardless of the version of IMBA that's used is Procedure 2, which is the procedure that documents the use of IMBA, does clarify which of those two buttons to select. Actually Step 6.1.4 states to click which button, the ICRP default button as opposed to the CFR one.

MR. FARVER: Where is Procedure 2, Scott? I don't know where that's at.

MR. SIEBERT: Posted with all the other procedures.

MR. FARVER: Which is?

MR. SIEBERT: Wherever you get your procedures. I mean, we have our internal version so I don't know where your --

MS. BEHLING: They're likely on our K: drive under the Advisory Board. And there is an ORAU and OCAS, and I think that those are the most current procedures, am I correct, Grady?

MR. CALHOUN: I would think so. I'm kind of looking right now.

MR. KATZ: Yeah, I think you have both historic and current procedures for everything.

MR. FARVER: Alright.

CHAIRMAN KOTELCHUCK: Alright. So I wonder if we could go back to the first screen -- that screen. Thank you.

So we are -- I mean, we have a situation in which there are some issues, I mean we understand now some of the discrepancies. But the NIOSH result was one that was pretty close, 48 percent, the PoCs. And the -- both of the SC&A were under that. So from the perspective of trying to decide if the blinds agree, it seems to me they do. And that for the Subcommittee, that's sufficient, even though you may want to discuss, and it's proper to do so, the details of how you did the calculation. But I think for the Subcommittee we had basic agreement on that. Is that not a fair statement, and that's basically resolved?

MEMBER MUNN: Pretty much.

CHAIRMAN KOTELCHUCK: Yeah. And I'm

pleased with that. And particularly pleased when you'll have a number that's so close to 50 percent. And that when we check it, if anything, it goes down, right? Other people checked it out, it goes down. So that's -- and again, NIOSH properly tried to be as user, as claimant friendly as it could be and it was close. But with the recheck it was definitely well below 50 percent.

So it seems to me we should close. And are the committee members, anybody have any questions or is there anything that we should continue to discuss about this?

MEMBER MUNN: I'm ready to close it.

CHAIRMAN KOTELCHUCK: Alright. Others?

MEMBER BEACH: This is Josie. I agree with that.

CHAIRMAN KOTELCHUCK: Okay.

MEMBER CLAWSON: This is Brad. It's just a little confusing to me because we've gone into this before. I just hope we're all playing with the same programs and if not we need to get that straightened out.

CHAIRMAN KOTELCHUCK: Well, it seems to me we are playing -- I mean, there -- this is, I mean, obviously [a] complicated calculation. And that is not at all surprising to me that the two groups don't get exactly the same numbers. But they should be close. And it seems to me they are.

MEMBER CLAWSON: I'm not worried about -- you know, a little bit off, there's so many factors that play into it and I understand that. But having different versions of a IMBA or so forth like that, that bothers me a little bit. But we're working through these things. These have been issues from the very beginning, too.

CHAIRMAN KOTELCHUCK: Right.

MR. KATZ: This is Ted. There's another thing I think everyone should keep in mind, which has been our experience with both these and with the -- as far as I know with -- because it's blind comparisons, blind sort of reviews that's done. Which is, you know, the ORAU folks are very proficient because they're doing this every day, day in and day out. And even these folks at SC&A and the folks at DCAS that review dose

reconstructions all the time, it's different being a reviewer than being a producer. And so it's not necessarily the same proficiency with the guidance and all the PARs. And so I think there should be some level of expectation, too, that it's hard for either SC&A or for the DCAS folks to comply perfectly even if they have, you know, all the documentation sort of somewhere to refer to.

CHAIRMAN KOTELCHUCK: Which is why we go over the differences --

MR. KATZ: Right.

CHAIRMAN KOTELCHUCK: -- even when there is a basic agreement. Because we saw the agreement initially and we went through it and we try to understand where the differences came and that would help both groups and our Subcommittee.

But okay, I think we really have decided to close.

So going once, seriously.

MS. BEHLING: Dr. Kotelchuck?

CHAIRMAN KOTELCHUCK: Yes.

MS. BEHLING: If I could make a suggestion?

CHAIRMAN KOTELCHUCK: Sure.

MS. BEHLING: If you want to move on to a new blind case, can I perhaps recommend that we discuss today the two initial blinds that we were given, and this was like way back in 2009 timeframe or so. And at that point in time when we were asked to do our blinds we did not calculate a PoC.

CHAIRMAN KOTELCHUCK: Right.

MS. BEHLING: But if you look at the table that is up in front of us, you can see that the total doses are quite different between the three methods for the X-10 case. And also I didn't -- in fact, I should have maybe totaled -- did a total on these. But also for the Portsmouth case, I think the grand total there for Method A was 33.9 rem which is very close to NIOSH's 34.6 rem. But then Method B came in at about 69 rem. So if you'd like we could perhaps talk about the two of those as just a suggestion.

CHAIRMAN KOTELCHUCK: I'd be open to that.

I did not -- the Portsmouth -- oh, okay. The Portsmouth, you didn't have the totals written

down, right?

MS. BEHLING: No.

CHAIRMAN KOTELCHUCK: The X-10 we did. So could you repeat what you said about the sum --

MS. BEHLING: Yes.

CHAIRMAN KOTELCHUCK: -- so I can take it down?

MS. BEHLING: And if you would like me to update this comparison table and put grand totals in when we have multiple cancers, I can certainly do that. But for Method A, the total dose was 33.971 rem.

CHAIRMAN KOTELCHUCK: Okay.

MS. BEHLING: And for Method B it was 69.388 rem.

CHAIRMAN KOTELCHUCK: Uh-huh.

MS. BEHLING: And then for NIOSH it was 34.656 rem.

CHAIRMAN KOTELCHUCK: Uh-huh. So --

MS. BEHLING: And NIOSH did come in at 48.75 percent and we didn't calculate, we were not asked to calculate PoC for those.

CHAIRMAN KOTELCHUCK: Right. But the

agreement, the total rems were, in fact, pretty close, right?

MS. BEHLING: Between Method A --

CHAIRMAN KOTELCHUCK: Yeah, Method A. I'm not sure -- I've always been -- I'm not sure, there's been some discussion when the renewal came about whether we want to do Method B, whether that's required. I've never been sure. Ted? Tell us who we are supposed to handle it?

MR. KATZ: We don't do Method B anymore. Method B was sort of an attempt to go at it sort of using more basic principles to just sort of get a rough, very sort of independent perspective on the doses that were being produced to the dose reconstruction process. And so that's why originally there was a Method B. But we did discontinue that with the current contract so there is now only a Method A.

CHAIRMAN KOTELCHUCK: Right. And the Method A agrees with NIOSH?

MR. KATZ: And the Method A is consistent with the NIOSH documentation. I mean, they're not hamstrung to copy NIOSH's work,

obviously.

CHAIRMAN KOTELCHUCK: No.

MR. KATZ: They don't even know NIOSH's work until they've done their own. But they've followed the NIOSH guidance where there's agreement already from the Board that a certain method is a good method, and so on. Where there is an agreement they have more independence.

CHAIRMAN KOTELCHUCK: Right. Well then, with the Portsmouth case, I'm not quite sure, Kathy, where are -- the method that the SC&A Method A has a smaller total dose than the NIOSH. The NIOSH dose puts them up at 48.75 percent which is very close to 50 percent. Is it that you're suggesting or have you calculated the PoC for Method A? Or is it that you're proposing that you will do that if we would like?

MS. BEHLING: We have not done that. If you would like us to do that we certainly can. But I just wondered if you wanted to get the story of those two. I'm prepared to do the X-10, Doug was going to do the Portsmouth. But however, if you prefer to continue on with the 17 set or even

the 20th set, we're all prepared to support you in any way you would like.

CHAIRMAN KOTELCHUCK: Okay. Then I think what you've said about the first two is a very good suggestion and that it would be good for the sake of completion. We don't have that many, after all, blind cases that we are going over in the Subcommittee. So if you would calculate for Portsmouth and X-10 the PoC for Method A I think that would be a good idea. On the other hand, I don't think it would -- I'd rather go -- personally I would rather go on to the 17th set and leave that for a report back later when you have the PoCs.

MS. BEHLING: That's fine.

CHAIRMAN KOTELCHUCK: Do other Board Members -- do other Committee Members, is that -- does that seem reasonable to you? I mean, it's just a choice of how we'd like to proceed.

MEMBER CLAWSON: There's no problem.

CHAIRMAN KOTELCHUCK: Okay. And I'd like to go to -- in 17 to the next case. And we have done now -- well, let me ask you, Kathy or Rose, where we should -- what you would like to -- which

one you would like to talk about under 17? Given that we chose the first three we've now -- two of which we've done and one of which we're close to having done. Would you want to suggest the third -- the fourth one that you would like to talk about now?

MS. BEHLING: Well, I guess I'm prepared to discuss the Hanford case under the 17th set if you'd like to do that.

CHAIRMAN KOTELCHUCK: That would be good.

MS. BEHLING: Okay. Rose, I don't know if you can bring that up. And if you'd like I can start and Rose --

CHAIRMAN KOTELCHUCK: Okay. Before she brings it up we all are looking at Hanford case, there's agreement between Method A and NIOSH. And if anything Method A is a little less than -- the PoC is a little less than NIOSH.

MS. BEHLING: That's correct.

CHAIRMAN KOTELCHUCK: Okay. Good.

MS. BEHLING: Okay. For this particular case the energy employee worked for

Hanford and for the Grand Junction Operations Office and he worked at Grand Junction -- or at Hanford from [identifying information redacted] through [identifying information redacted] and at Grand Junction from [identifying information redacted] through [identifying information redacted]. The individual was monitored at Hanford and there was no monitoring at the Grand Junction facility.

By and large, the data that was used, and there were [identifying information redacted] skin cancers as you can see in Table 1. And we tallied up doses from each of those.

Now for Method B, because there was no monitoring at the Grand Junction facility, Method B did not calculate any dose for the monitoring period at that site. Data that was used was the Hanford TBD, the OTIB-17, which is a skin dose procedure. And for Method A and NIOSH there was also, for Grand Junction there was a template that is used for calculating doses. And if you go on you can see that under Table 2.2 --

CHAIRMAN KOTELCHUCK: Before you go

there, excuse me. On Table 1.1 I don't see the -- where you're doing Grand Junction. I'm looking at the headings on the columns.

MS. BEHLING: Okay. On the left-hand side under the recorded dose, I've identified whether the external doses from Hanford or from the Grand Junction --

CHAIRMAN KOTELCHUCK: I see. Yes.

MS. BEHLING: Okay. The --

CHAIRMAN KOTELCHUCK: Thank you.

MS. BEHLING: Okay.

CHAIRMAN KOTELCHUCK: Okay. Then do go on. Sorry.

MS. BEHLING: Okay. No problem.

So if we move on to Table 2.2, that's our comparison table of the data that was used, the assumptions that were used. Like I said, Method B did not calculate any Grand Junction dose since the EE was not monitored. And NIOSH and Method A used similar data and assumptions except for -- I will talk about in a little bit more detail later -- for some job category assumptions under the internal dose.

So if we move on to page 11 of the comparison report, this is where we calculated -- I compared external doses for the Hanford recorded photon doses. And all of the methods used the Hanford TBD and OTIB-17 and actually calculated identical doses. So that was a good comparison. However, NIOSH -- let me see here. Yeah. NIOSH and Method A based their doses on a 25 percent of 30 to 250 keV and 75 percent greater than 250 keV based on the assumption that the assumption worked in the reactor areas. Where Method B assumed that the EE worked throughout the site and assumed 100 percent of the dose came from the 30 to 250 keV. And as I said, all methods then calculated 680 millirem for the employment at Hanford for the recorded photon doses.

Now the Hanford missed doses, here there were a lot of similarities also, used the same procedures. Method A and NIOSH counted eight zeros or records that were less than one-half of the LOD value where Method B counted six zeros. NIOSH used -- they all used -- Method A and -- no. I'm sorry.

NIOSH and Method B assumed an LOD of 30 millirem. NIOSH indicated that they selected that LOD from the Implementation Guide 001. And Method B actually took their LOD value from the OTIB-17 document. Where Method A assumed -- assigned an LOD of 20 millirem and that came out of the Hanford TBD. So that explains some modest differences in doses that are shown in Table 2-3 which is on page 12 of the document. And I see that that's not up yet but it's -- the differences are 80 millirem and 90 millirem and 120 for NIOSH.

So to go on to the Hanford electron doses or shallow doses, SC&A's Method A and Method B again used the OTIB-17 guidance for calculating the shallow doses. The difference was that Method B applied a clothing attenuation factor for the one skin cancer on his [identifying information redacted]. And I don't think any of the others applied a clothing attenuation factor.

And although -- now this is -- and it's a minor issue but NIOSH did mention in their dose reconstruction report that they calculated a shallow dose. But when I went through the IREP I

didn't see it. It was only for 1982, I couldn't identify where they actually calculated that dose.

MR. SIEBERT: Kathy, if you want I can answer that real quick.

MS. BEHLING: Okay.

MR. SIEBERT: The reason -- we calculated it but because we used that value, was actually 10 millirem, it's less than half the LOD since we were using the 30 millirem LOD. So it was zero.

MS. BEHLING: Okay. That answers it. Okay.

And we assigned 10 millirem and 9 millirem. So that explains it.

Okay. If we go on to the occupational medical doses, NIOSH and Method A consulted the four documents that we've been talking about a lot today when it comes to the medical doses. The Technical Basis Document for Hanford, also the OTIB-6 and the PROC-61 along with OTIB-79, which talks about medical experts that are provided offsite.

Method B used the Hanford TBD and Method

-- and strictly used the guidance followed in the Hanford TBD. NIOSH and SC&A's Method A assumed six documented X-rays and took their doses from Tables 3.8 and 3.9 of the Hanford TBD. And Method A assigned dose for -- oh, and to go back just to clarify, those were six documented X-rays where what Method B did was they calculated doses not only for the documented X-rays but also using the guidance in the Hanford TBD, which is written here, and states that under Table 3.3, that you should, if the person worked there for five years, for numerous years they get an X-ray every five years and they get one exam at termination. So rather than calculating those for only six documented X-rays, they calculated X-ray dose for 10 different exams. So that is where the difference was with the occupational medical dose. And those doses are shown in Table 2-4.

And if we go on now to the external dose for the Grand Junction, again, as I said, SC&A's Method B did not calculate any of these doses. And both NIOSH and SC&A's Method A used a template that exists. And based on that template, they

calculated unmonitored dose. And they also, from that template, they used a coworker dose. And within that template, you have to select what the job category is for this individual. And for calculating the photon doses, both SC&A and NIOSH assumed that this individual was an administrative worker and calculated doses according to that.

Okay. No one calculated missed doses because we used the coworker data. In calculating shallow doses for the Grand Junction, they also used the coworker data and used a beta-to-photon ratio of 1.5. The only difference there was SC&A, for the first year of employment and in the last year of employment, only assumed a partial year and adjusted the doses accordingly, where NIOSH gave the individual full years' worth of dose for first and last years of employment.

No medical doses were assigned and --

CHAIRMAN KOTELCHUCK: Somebody needs to scroll up, I believe.

MS. BEHLING: Okay. I'm now on page 16. And neither SC&A nor NIOSH assigned medical doses because it was determined that all the X-ray

doses were given offsite. And so, according to OTIB-79, they wouldn't be considered.

CHAIRMAN KOTELCHUCK: Right.

MS. BEHLING: Now, if we go to the internal dose, for the Hanford for the internal dose, NIOSH and SC&A's Method A assigned coworker dose and environmental intakes. Now, Method B only assigned the environmental intakes for the Hanford dose.

Okay. We can see in Table 2.6, that is on page 17, that they calculated nearly identical doses. And NIOSH and SC&A's Method A calculated the unmonitored internal doses based on Section 5.6.2 in Attachment C of the Hanford TBD.

CHAIRMAN KOTELCHUCK: Yeah. Remarkable agreement.

MS. BEHLING: Okay. And let's see, we go on here. NIOSH and SC&A's Method A also considered internal dose from fission and activation products, and they used OTIB-54 for calculating a dose. And both methods, only the ruthenium-106 resulted in any measurable dose, which was only one millirem.

And the internal dose was considered by all methods using the TBD. And, again, all of these methods came up with a dose that was less than one millirem and so it wasn't included. And then Table 2.6 gives you a comparison of the Hanford total internal doses associated with the three methods.

When it came to the Grand Junction internal dose, again, Method B did not calculate any dose, and Method A and NIOSH used the Grand Junction template to calculate those doses. This is where there is a difference. In this particular case, NIOSH determined that the individual, rather than being an administrative job category, they assigned a general labor job category which was more claimant-favorable. And SC&A stayed consistent with what they did in their internal dose and used the administrative position for the job category. And that is why you see the differences in dose, even though they're minor.

CHAIRMAN KOTELCHUCK: Right. But, yes, they are minor. On the other hand, NIOSH was more claimant-friendly in this case.

MS. BEHLING: That's correct.

CHAIRMAN KOTELCHUCK: So that's fine.

MS. BEHLING: That's correct. So that sums it up.

CHAIRMAN KOTELCHUCK: Then let's go back to the first table. I'm sorry, Scott, did you want to say something?

MR. SIEBERT: Well, I don't know how you want to do it. There are in summary, if I remember correctly -- and I'd like to compliment Kathy on how she wrote up the comparison. That was very easy to follow, that was great.

I think there's three things in the summary that are the pieces of the comparison I think we need to discuss, if that's --

CHAIRMAN KOTELCHUCK: Good. Let's do that.

MS. BEHLING: Yeah, that's great, Scott. Go ahead. I assume that you take issue maybe with some of our assumptions, but go ahead.

MR. SIEBERT: So I don't know if you want to put up the summary up on the screen?

MS. BEHLING: Page 19 and 20.

MR. SIEBERT: Great. The first thing that I saw differentiation-wise is the decision of where the LOD values come from. Is that how you read that as well, Kathy?

MS. BEHLING: Yes. I was under the assumption that NIOSH selected the LOD value of 30 millirems from the Implementation Guide, and SC&A took it from the OTIB-17, although they're the same values.

MR. SIEBERT: Okay. And actually, that has to do -- you're right, we used the 30 millirem LOD. That has to do with where you're looking at for the reference. The reference of the IG is actually referencing the LOD over 2 methodology at the end of that paragraph, as opposed to the LOD values.

MS. BEHLING: Okay.

MR. SIEBERT: So we went back and we used the values that are in OTIB-17 just like was also used in approach B. And I figured out approach A used 20 millirems for the LOD, and I think I figured out why. It looks like they used Table 6-13 from the TBD. The issue with that is,

that is for the penetrating LODs, not the non-penetrating, shallow LODs.

The LODs for the shallow non-penetrating are actually found in -- well, originally in OTIB-17, but it's also in the Technical Basis Document in Attachment C where it discusses in assessing skin claims and it states that the non-penetrating LOD for that timeframe is 30 millirem.

MS. BEHLING: Okay. Agreed.

MR. SIEBERT: So that's that one.

MS. BEHLING: Okay.

MR. SIEBERT: The next one has to do with the number of medical X-rays, correct?

MS. BEHLING: That's correct, yes. What Method B did is they actually looked at the documentation, saw the six documented X-rays. But then also went into the Hanford TBD, read through the Hanford TBD, and I think have words in there to that effect on -- what page are we on here? Page 14 of my write-up. And I can read here that Method B also used guidance cited in Table 3.3 of the Hanford TBD that states from 1956 through 1980 all

employees at Hanford received an annual conventional X-ray exam. And from '81 through '90 all employees less than 45 years of age were given an X-ray exam every five years and one exam at termination.

And so based on that guidance, they added four additional X-rays.

MR. SIEBERT: Right. And I believe that's once again an issue of us knowing more than the TBD specifically states, because although that may be the case that they maybe have been scheduled for such, we have reviewed Hanford's X-ray data and the documentation they're giving us, we're convinced that when they give us the X-ray record, the X-ray record is actually correct. If somebody's not shown as getting annual X-rays we're not going to be assigning X-rays. We assign it based on the actual X-ray record that was given.

MS. BEHLING: And is that also written up in your Guidance Document for Hanford?

MR. SIEBERT: That I can't tell you off the top of my head.

MS. BEHLING: Okay. I'm just curious.

Alright. Again, this goes back to the issue of consistency. And if NIOSH and ORAU are convinced that they are getting all of the records from Hanford, I just think that we need to reflect that in the documentation.

MR. SIEBERT: Okay. So we've got that.

CHAIRMAN KOTELCHUCK: Do we need to go back to 19 or does that close it? Page 19.

MS. BEHLING: Yeah, one more.

CHAIRMAN KOTELCHUCK: Okay. Let's go back, then.

MR. SIEBERT: And this will be a quick one, too.

CHAIRMAN KOTELCHUCK: Sure.

MR. SIEBERT: This was the assignment of the job category for internal doses. And although it was claimant-favorable, we agree that the individual was more likely fit into the admin category as was defined for external. And I agree this should have been consistent for admin both ways. It's claimant-favorable in this case, for a non-comp case, but still I agree that it should

have been administrative.

CHAIRMAN KOTELCHUCK: Okay. So we have basic agreement here, really quite good agreement. And the PoCs from SC&A are just a little bit lower, reflecting, just as you discussed, among other things the choice of administrative versus general labor.

Is there anything more that the Subcommittee needs to -- it looks to me like there's agreement, and I would be ready to move on, or await other Subcommittee Members' comments and then make a decision. Comments from other members?

MEMBER CLAWSON: This is Brad. I don't have any.

CHAIRMAN KOTELCHUCK: Alright. Anybody?

MEMBER BEACH: I believe I'm conflicted, so I can't comment on this. Is that correct, Ted?

CHAIRMAN KOTELCHUCK: That's correct. Yeah.

MEMBER MUNN: And I'm not even here.

CHAIRMAN KOTELCHUCK: That's right,

you aren't, either. So, John, you're the third one. Are you in agreement this is fine?

MEMBER MUNN: He may not be with us, either.

MEMBER POSTON: Hello, can you hear me?

CHAIRMAN KOTELCHUCK: Yes.

MEMBER POSTON: Okay. I was on mute.

CHAIRMAN KOTELCHUCK: Yeah, I thought that might be. It looks fine, right?

MEMBER POSTON: Yes.

CHAIRMAN KOTELCHUCK: Good. Okay, folks, I think we have agreement here, and we can move on to the next case.

Now, it is now almost 3:00 o'clock. It probably is a good time for a break. We came back at 1:30. Would people like to take a brief break?

MS. BEHLING: Sure.

CHAIRMAN KOTELCHUCK: Okay. It's five of 3:00, let's get together at five after 3:00. Okay? See you all in ten minutes.

(Whereupon, the above-entitled matter went off the record at 2:54 p.m. and resumed at 3:05 p.m.)

CHAIRMAN KOTELCHUCK: Let us begin. So, we have closed out the Hanford-Grand Junction. I see we have one left from the 17th on the screen.

MS. BEHLING: I think that's -- excuse me, I'm sorry.

CHAIRMAN KOTELCHUCK: No, Kathy, go ahead.

MS. BEHLING: There is, on the second page actually, there's 6 blinds in the 17th set and 6 in the 20th set. So there are two more left under the 17th set.

CHAIRMAN KOTELCHUCK: Right. Which is what we'd like to go on to do.

MS. BEHLING: Okay. Perhaps, if you don't mind, we could start with the Y-12 and the X-10, and that would be Doug.

CHAIRMAN KOTELCHUCK: That would be good. Okay. And let's see, there's remarkable PoC agreement. And while Doug is, I assume, getting his materials together, the Method A and NIOSH, all of the different doses are a little bit larger in Method A. And by half a rem, typically; in some cases, three-quarters of a rem. And the

difference in the PoCs is negligible. And both of them are above 50 percent.

Doug, are you on the line?

MR. FARVER: Yes, I'm here.

CHAIRMAN KOTELCHUCK: Okay. Would you like to start to go over them?

MR. FARVER: Sure, we'll go through the comparison report.

CHAIRMAN KOTELCHUCK: Okay.

MR. FARVER: Table 1-1 just lists the different cancers and the dates. In this case, they're all skin cancers. We can scroll down to the next page, Table 1-2, and it will give you a better breakdown of the doses. And just kind of glance across at the recorded photon doses, you can see everything's about the same.

CHAIRMAN KOTELCHUCK: Yes.

MR. FARVER: If you look at the missed photon doses, you see everything's pretty much the same.

CHAIRMAN KOTELCHUCK: Right.

MR. FARVER: Okay. And shallow doses are very similar. So we don't have a lot of

discrepancy so far in in the external doses. If you look under the missed shallow dose from skin deposition, Method B assessed the dose for potential skin depositions, and also a missed neutron dose. Method A and NIOSH did not.

We jump down to the occupational medical dose, all very similar. Environmental dose, very similar. And the internal dose, pretty similar. They're a little bit different on the X-10 coworker doses for the electrons. All in all, they're all three pretty similar.

CHAIRMAN KOTELCHUCK: Yeah.

MR. FARVER: Okay. Which is what you said.

CHAIRMAN KOTELCHUCK: Right. And there are the total doses.

MR. FARVER: So we can go on down and go through each one individually, if you like.

CHAIRMAN KOTELCHUCK: I'm not sure it's worth it.

MEMBER MUNN: I don't see any reason to pursue it.

CHAIRMAN KOTELCHUCK: Yeah. I don't

either, unless it would serve some purpose for SC&A and NIOSH to be talking so that they can get on the same page for those few that are disagreed. But I think for the Subcommittee there's really no need.

MR. FARVER: When I went through this, the big difference, like for the missed photon dose, is the number of zeros. One came up with 110 zeros, another one comes up with 125 zeros. So it's kind of small differences like that throughout the whole document. And I'm really not sure it's worth the time to go through it, but that's up to you.

CHAIRMAN KOTELCHUCK: I don't think it's worth it. Wanda has indicated similarly. Other Committee Members, is it worth going more thoroughly through it?

MEMBER CLAWSON: No. This is Brad.

CHAIRMAN KOTELCHUCK: Good. I think we have fine agreement. John? Josie?

MR. KATZ: John can't speak, he's conflicted. But --

CHAIRMAN KOTELCHUCK: Oh, yes.

MEMBER BEACH: I agree with that. This is Josie.

CHAIRMAN KOTELCHUCK: What did you say, Josie? I missed Josie.

MEMBER BEACH: I agree there's no need to go into it.

CHAIRMAN KOTELCHUCK: Right. Alright. I think we have agreement, unanimous agreement. So that is completed and in agreement. And so we have only one left, as I recall, from set 17.

MR. KATZ: Before we go on, let me just make a note for SC&A. If there are matters where there are differences and you don't understand why you have the differences, even though they were too minor for the Subcommittee to be concerned with them, if you'd just follow up with NIOSH so that you, the folks at SC&A, understand the reason for the difference, whatever it is, whichever way, whoever's correct. But that will just help you down the road with other blind reviews.

MS. GOGLIOTTI: Okay, great.

CHAIRMAN KOTELCHUCK: Good. So the

last one is the Savannah River Site.

MS. BEHLING: Yes. And I will take that and we'll start off. Yeah, this is Savannah River Site. In fact, the individual worked at Savannah River and at the Dana Heavy Water Plant. And I think Rose will pull that up for us. But the individual at the Dana Heavy Water Plant from [identifying information redacted] through [identifying information redacted] and at Savannah River from [identifying information redacted] through [identifying information redacted].

CHAIRMAN KOTELCHUCK: Right. And both agree, from that first table, that the person should be compensated and the PoCs are pretty close to the same.

MS. BEHLING: Exactly. Everybody is compensating. We went about it a little bit differently. There were five different cancers, and NIOSH actually approached it using a best estimate approach and calculated doses for external and internal. SC&A's Method A and Method B did a partial dose reconstruction where Method A did not calculate internal dose and Method B only

calculated doses associated with the non-presumptive cancers, and also did not calculate internal dose. And as you can see here, everybody's compensated based on their individual approaches.

Now, when it comes to -- and, again, I'll make this brief because there's -- well, we'll go through it. When it comes to the Dana Heavy Water Plant, that's listed as a covered facility but there is no radioactivity at that site. And so the only thing that you would calculate for at Dana is the occupational medical doses.

For the Hanford site, again, we used -- all of the methods used the Technical Basis Document for Hanford, the OTIB-17, which is the skin dose guidance, and the Implementation Guide, External Implementation Guide.

Table 2-2 is an extensive table that provides you with all of the assumptions in the data that was used by the various methods. The biggest difference in this table is the fact that SC&A's Method B did calculate an unmonitored beta, gamma, and neutron dose. That method was the only one to

calculate that dose.

With regard to other methods, SC&A's Method A and B did not calculate internal. NIOSH did calculate an internal dose based on the best estimate approach.

The only other big differences, again, are the missed doses, missed photon doses. You can see in Table 2, counting the number of zeros, again, it depended on if you assumed that the individual was working on a quarterly basis or a monthly basis. And, well, we'll get to that as I go through this. But that's one of the key differences.

All of the three methods assumed that the individual worked at the F and H separation areas, and therefore assumed a 50 percent, 30 to 250 keV, and 50 percent greater than 250 keV photon energy split. They also all applied a dosimeter correction factor of 1.119 for the recorded doses.

Let's see here. And the recorded doses can be seen in Table 2.3, comparison to the recorded photon doses. And they're quite similar. The only difference, again, is that Method B did not calculate dose for the bladder and the colon; only

calculated for the non-presumptive cancers.

As I was saying with the missed dose, NIOSH assumed 93 missed doses. All of the methods assumed an LOD of 40 millirem. Their assumption or calculation of 93 missed doses was based on quarterly exchanges from 1964 through 1971. What Method A did, SC&A's Method A, they actually used the Savannah River Site Workbook, I think it's Workbook 2.10, to calculate the number of zeros or less than LOD values and that generated 239 zeros.

And Method B calculated 172 zeros based on the fact that during the quarterly -- during the period where DOE records indicated only quarterly results, they assumed that it was a monthly exchange and assumed that all of the doses received in one month, and the other two months of that quarter would be assumed as a zero. And they assumed that based on Table 5.5.1-1 of the Hanford TBD. And, again, in Table 2.4 you can see a comparison of the missed doses. Again, similar doses. And, again, Method B did not calculate the bladder and colon dose.

Recorded shallow dose. Method B's is

lower due to the fact that prior to 1971 the method applied a dosimeter correction factor of .6 to the dose. So that is why the recorded photon dose for the skin cancers is slightly less, as shown in Table 2.5.

Missed shallow dose. Only Method A calculated a missed shallow dose, and that was based, again, on running the Savannah River Site Workbook, which arrived at a total of six zeros or less than LOD electron doses.

And to go on to unmonitored photon and electron doses, only Method B calculated, as I stated earlier, unmonitored photon, electron, and neutron doses and based that on coworker data for years 1972 through 1974, and used the 50th percentile for the coworker data for the gamma and the electron doses, the non-penetrating doses.

For the unmonitored neutron, again, the unmonitored neutron which was calculated only by Method B and it was based on OTIB-7 guidance. And, again, used the neutron-to-photon ratios from the Savannah River TBD.

Onsite ambient. All three methods did

calculate an onsite ambient dose, as explained on page 17. NIOSH assumed four years of unmonitored data and calculated the onsite ambient for those four years using a best estimate approach. Method A assumed three years of unmonitored dose and assigned ambient dose for those three years. And Method B assigned onsite ambient for 18 years based on PROC-60, Attachment A, and also assigned an argon-41 dose for that timeframe.

And as you can see in Table 2.6. I've lost my Live Meeting here, so I hope you're seeing this.

CHAIRMAN KOTELCHUCK: Table 2.6? We've got it.

MS. BEHLING: Okay. And, again, obviously, the doses are higher for SC&A's Method B just because of assigning the onsite ambient for 18 years as opposed to 3 or 4.

CHAIRMAN KOTELCHUCK: Sure. SC&A and NIOSH are basically the same?

MS. BEHLING: That's correct, yes. Occupational medical dose, NIOSH and Method A calculated annual doses, Method B also, for the

Dana employment period according to OTIB-6. And also calculated Savannah River Site occupational medical doses for 16 documented X-rays that were in the DOE files. Both Method A and NIOSH calculated based on just the 16 documented. Method B only calculated for 15 as opposed to 16, somehow didn't see all of the documented X-rays. But it's obviously nearly identical doses that are shown in Table 2.7.

And again, as I said, internal dose was only calculated by NIOSH. In all cases, the urinalysis data for plutonium and fission products, europium, they were all less than LOD values or MDA levels. And so NIOSH used one-half the MDA level to calculate those doses. And they also calculated an internal environmental dose for years '66 through '77 when there was no bioassay monitoring and they calculated an unmonitored tritium dose.

Now because SC&A's Method A used the Savannah River Site Workbook, the Workbook also calculated an environmental tritium dose for the entire period, as shown in Table 2.8. And like I

said, Method B did not calculate any internal. But as you can see, and I realize that on the summary table our initial PoC values were incorrect, and I don't know if -- like I said, I hadn't filled this out, but everyone, all three methods, did compensate, and not as we had initially reported on this table. And I apologize for that.

CHAIRMAN KOTELCHUCK: Could you -- if you're finished with this, could you go up to that table and tell us what those numbers should be?

MS. BEHLING: Yes. NIOSH calculated a PoC of 51.39 percent. SC&A's Method A calculated a PoC of 51 percent and SC&A's Method B calculated a PoC of 60.84 percent.

CHAIRMAN KOTELCHUCK: Right. Okay, fine. So, a high level of agreement again, A and NIOSH, which were --

MS. BEHLING: Yes, very close.

CHAIRMAN KOTELCHUCK: And both compensated. And that's fine. Is there any comment from -- it seems there's agreement. Is there any comment from a Subcommittee Member?

MEMBER MUNN: Looks clear to me.

CHAIRMAN KOTELCHUCK: Good.

MEMBER CLAWSON: Brad. Looks fine.

CHAIRMAN KOTELCHUCK: Fine.

MEMBER BEACH: And it's Josie. I'm fine, too.

CHAIRMAN KOTELCHUCK: Very good. Okay. So we have agreement, and John is listening. So, we have agreement. That's settled.

And as a result, that, I believe, is the last of the set 17. We simply have one issue to come back to in the set 17 blinds, mainly the Allied where the issue of the other radionuclides was raised, and Grady's going to look at it and respond to it.

And then folks from SC&A are going to calculate the PoC for the first two cases. And so, this is fine, making good progress. And good agreement, which is the more important thing.

We have a little time. It's 3:30. Is it possible that we can go through and start the 20th set?

MS. BEHLING: We're prepared to discuss the 20th set.

CHAIRMAN KOTELCHUCK: Fine. Grady? I mean, Scott?

MR. KATZ: Can someone take their -- someone has their speakerphone on and everyone's voice is feeding back.

CHAIRMAN KOTELCHUCK: Okay. Scott, can we -- or Grady, can we -- do you want to start on 20? Can we?

MR. SIEBERT: This is Scott. Yeah, we sure can. The only one that we're still looking at because we didn't get the supporting files until a little bit later is the Rocky Flats one.

CHAIRMAN KOTELCHUCK: Okay. Which one -- I look to either SC&A or NIOSH to suggest the first one to do. Well, maybe, folks, it would make sense -- no, let's do as we did before. Let's look down the list of the PoCs for set 20, which I have not looked at before, and see if there's none in which the two methods have disagreement in terms of compensation.

So there's a pretty high level of agreement. Generally, SC&A has a smaller, a lower PoC, with one exception. Okay, well, I'll leave

it to Scott and to Kathy to suggest a first one, whichever you would like.

MS. BEHLING: If I can make a suggestion, if Ron Buchanan is on the line and ready to talk, NTS, I think, is a fairly -- well, I shouldn't say simple one, but are you ready to discuss NTS? It's first on the list.

DR. BUCHANAN: Yes, that would be fine.

CHAIRMAN KOTELCHUCK: That would be fine. How about Grady, is that fine?

MR. CALHOUN: Yes, that's fine.

CHAIRMAN KOTELCHUCK: Okay. Folks, let's go. Rolling right ahead.

DR. BUCHANAN: Okay. This is the NTS case in volume 20. And if we can get that up here. We'll give them a second to get that up.

CHAIRMAN KOTELCHUCK: Surely.

DR. BUCHANAN: If we can go to Table 1-1. Okay, you can see this one is a fairly complicated table. However, if we look at it in general, there's pretty good agreement. There were eight cancers in set 20. We just did NIOSH and SC&A Method A, so it decreases the complication

a little bit. And these were mostly skin cancers, except for three of them. And so that fairly simplifies it.

And so, now, that is the overall. And rather than trying to analyze that complex table, I'll go down and the first SC&A PoC is 40.59 and NIOSH's is 41.17. So [it's] a fairly close PoC. If we go down to Table 2.1, we've got a summary of the cancers there. We see that this person worked as a [identifying information redacted] at Nevada Test Site from [identifying information redacted] to [identifying information redacted], essentially, with just a year, [identifying information redacted] he didn't work there. Was diagnosed with [identifying information redacted] cancers in [identifying information redacted], one of them being [identifying information redacted] and then [identifying information redacted] and the other [identifying information redacted] being [identifying information redacted] cancers.

So, this was a partial dose reconstruction because the internal dose can't be constructed prior to '93 unless there's records of

bioassay monitoring, according to the Nevada Test Site SEC. The worker was employed there in the SEC, and at least one of the cancers was non-presumptive, so DR was required.

Now, in general, SC&A and NIOSH both used the best estimate approach. NIOSH did some overestimate in part of the dose reconstruction. And if we go to Table 2-2 there, we look at the external dose comparison. And I'll essentially go through this and just emphasize areas that perhaps were different. And if I don't emphasize it, then they were the same. If there's any questions, please be sure and stop me and I'll clarify it.

We see that they're the same external dose methods except for the biggest in this whole case, the dose conversion factors. SC&A used them directly from IG-001, for whatever they were, and OTIB-17 for the [identifying information redacted]. And whereas NIOSH used the overestimating method, in that if any dose conversion factor was below one, they rounded it up to one. And so this obviously resulted in some greater dose assignment than SC&A.

In most cases, we see that it was the same parameters used. Now if you go down to the LOD values for the missed external dose, we see that there was some discrepancy there. We used it directly from the TBD and the main differences were in 1971 there was a switch from 40 millirem to 30 millirem. And NIOSH sometimes did the switch; sometimes it didn't. Sometimes they used the 40, sometimes they used the 30 for '71. So that makes a slight bit of difference, not a whole lot of difference but a little bit of difference in comparing values, using different LODs.

Again [for] the dose conversion factor, they used one, if there was less then one for a missed dose also. And so that's pretty much all the same for the external dose other than that.

Go down to Table 2-3, and this is for comparing the internal dose. And we see that in Table 2-3 we essentially used similar methods and so there was not too much difference in the internal dose assignment.

So, in general, if we look at the external dose section, we see that we agree except

for they had a larger dose in Table 2-4 there. If you go down to Table 2-4, you see this is reflected in comparing the reported dose. Theirs was a slightly higher than ours for the [identifying information redacted] and the [identifying information redacted], and the same for [identifying information redacted] because they rounded their dose conversion factors up to one.

CHAIRMAN KOTELCHUCK: Right.

DR. BUCHANAN: Okay. And the same thing applies in the missed dose they're showing, again, in Table 2-5. Now there were other factors in Table 2-5, and that depends again how you determine your number of zeros. Like we said, SC&A generally goes in and physically counts the zeros or the possible zeros, whereas NIOSH usually uses the best estimate program. So sometimes we'll come out with slightly different numbers. However, for the [identifying information redacted] cancer that occurred in [identifying information redacted], it occurred in June, so we just assigned six zeros for before cancer. You don't assign it after cancer is diagnosed.

However, NIOSH used 12 zeros for the full year, which was an overestimate.

And for 1971, sometimes they applied the 40 millirem for the full 12 months and sometimes 30 millirem for the full 12 months, whereas if you divide it between February and March, and we divided it according to the TBD. So that created some differences in Tables 2-5. Of course, the skin remained the same, but some of the other organs were different with respect to '94 because of the dividing in half we did for six months, they did twelve months. So that was a slight difference.

Onsite ambient, again they assigned that according to Procedure-60, and we agree. You go down to occupational medical, we see that Table 2-6, we agree there with the occupational medical. Now I just would like to say as a side note, it certainly has helped when the TBDs have come out with the [identifying information redacted] dose already calculated for the different [identifying information redacted] locations. However, they can't always cover all of them. For example, the [identifying information redacted] is not covered

in any of the tables and so you have to use a close proximity and it depends on what close proximity you use exactly what dose you would find. Fortunately, there's not much difference in using, say, the [identifying information redacted] as opposed to -- and so it doesn't result in much dose difference.

So we agree that the doses were very similar, just a slight difference in the [identifying information redacted] for 2011 because of the choice of the alternate location. So we had no real dispute there.

Okay. Now, for internal dose, we go to the next section, 3.2. We see that we can't assign it because we didn't have any data in the SEC during that period, and so we used environmental doses. And we assigned it according to the TBD. And we assigned it using air concentrations, so according to OTIB-49 we don't apply the Super S adjustment.

And if we go to Table 2-7 we see that we agree there on the dose assignment, and so we didn't have any disagreement on internal. And so we come down to the summary in section three, we

see that the assignments were similar, the main difference was in external when NIOSH used the rounding up to one for dose conversion factors when we used the direct mode out of IG-001. So the doses were similar; the PoCs we came up with 40.59, NIOSH came up with 41.17 because they had slightly higher external doses because of that reason. And so pretty much in agreement and we had no real issues.

CHAIRMAN KOTELCHUCK: Right. It looks like close agreement and you very clearly explained why what little difference there was between the choices -- between the calculations.

I propose that we approve. Anybody else from the Subcommittee have thoughts or comments?

MEMBER MUNN: I certainly approve and have to comment that this is exactly the kind of result we hoped for when we established this program. Great.

CHAIRMAN KOTELCHUCK: It certainly is.

MEMBER BEACH: Yeah, Dave, I happen to agree, it looks very straightforward.

CHAIRMAN KOTELCHUCK: Yeah. Okay.

So, agreed? And since I heard no other comments, so I'm assuming there's agreement there.

And it is now 3:40. Maybe we should -- if we're moving at this pace, we have time perhaps for one more and then we want to do some summaries.

DR. BUCHANAN: Y-12 is a real simple one. We can get that out in five minutes probably.

CHAIRMAN KOTELCHUCK: Well, hey, that's fine. Okay. Set 21, Y-12. Is that okay, Scott? Grady?

MR. SIEBERT: Yeah, I agree wholeheartedly, that should be a quick one.

CHAIRMAN KOTELCHUCK: Okay. Let's do it.

DR. BUCHANAN: Okay. If we can pull up Y-12, this was a fairly simple one. We go to Table 1.1 and we see that SC&A assigned -- this is a [identifying information redacted] cancer, one cancer -- 143 rem, 51 percent, and NIOSH assigned 150 rem, 52 percent. So we're fairly close on the dose assignment.

This was for a -- excuse me. Let me get up the right thing here.

Okay, Y-12. This was 49.46 percent, NIOSH; SC&A, 49.48. This was a simple one here. This was a [identifying information redacted] who worked at Y-12 [identifying information redacted] through [identifying information redacted]. Unfortunately, he was under the 250 days slightly, and this was a person that had [identifying information redacted] cancer, these were secondary cancers, and [identifying information redacted] cancer, [identifying information redacted] cancer and [identifying information redacted] primary carcinoma.

And so we went through the dose comparisons and all that could be assigned was the medical X-ray because their SEC was applied during this period at Y-12 and there was no external dose or bioassay information. And according to the SEC, you couldn't reconstruct it unless there was records of that. The only thing we could do was apply an annual determination X-ray exam. We both agreed that you do one in December, the person started in [identifying information redacted], an annual in [identifying information redacted], and

a termination in [identifying information redacted], using the TBD doses. And so we agreed with the doses assigned there in Table 2.2.

According to OTIB-5 you take the organ that would result in the largest dose, the primary organ, when you have a secondary cancer of unknown origin. And so 2.2 shows in bold there those primary organs that you assign the dose to. And we see in Table 2.3 that we agree with the dose assignment. No issues there. And then in the internal dose section, we can't assign any, and so none could be assigned.

That takes us to section three, and we see that we have the same doses, same PoC, except for the [identifying information redacted]. We calculate 27.71 percent; NIOSH calculates 26.67 percent. We looked back over the programs used and we found that NIOSH used version 5.7. We did ours a little later. And our version of PoC calculation of program was 5.7.1. And so this is the only difference we could find that contributed to that. But the overall PoC, both resulted in less than 50 percent. And so that's the only difference we

found and that's all we had on that case.

MR. SIEBERT: And, Ron, I can address the difference in PoC if you'd like.

DR. BUCHANAN: Okay.

MR. SIEBERT: Actually, it's not the difference between 5.7 and 5.7.1; those do give identical PoC values. What it appears is, for the secondary [identifying information redacted] cancer, the IREP model that you used was "other/ill-defined site" rather than one of the models that is referenced in OTIB-5. We used [identifying information redacted], which is the largest of the ones that you have to run. I think it's probably just an error, an accidental error, of "other/ill-defined site" is what was used for the carcinoma and I guess it was just carried on to the [identifying information redacted] as well.

So once I changed that to the correct IREP model the PoCs matched up identically.

DR. BUCHANAN: And what was the correct IREP model?

MR. SIEBERT: [identifying information redacted]

CHAIRMAN KOTELCHUCK: Let me ask. I'm not quite clear. If you weren't able to assign an external dose, how would you get your PoC? I don't understand. That is, normally there's an external and internal dose, and you have neither.

MS. BEHLING: There's an external dose from the medical.

DR. BUCHANAN: We assume --

CHAIRMAN KOTELCHUCK: Oh, yes. Absolutely. But that's all?

DR. BUCHANAN: Yes. That's all we can assign during the SEC for an uncovered -- well, this person wasn't employed 250 days, so we had to assign doses for medical only.

CHAIRMAN KOTELCHUCK: Okay. It was the under 250 days that made this --

DR. BUCHANAN: Right.

CHAIRMAN KOTELCHUCK: Okay. Now, it is satisfying that the original NIOSH one was very, very close to 50 percent, but a little bit under. And when NIOSH redid it, they were also a little bit less, actually, so that it gives one confidence in this aspect of the partial calculation that even

though there was something close to 50 and we would have to reject it, that a review or another blind calculation of the same thing would give the same result.

So, I agree, it should be accepted. Are there any comments from Committee Members?

MEMBER MUNN: No.

CHAIRMAN KOTELCHUCK: Basically, it's the structure of the EEOICPA law, itself, right? Because if they assigned external and internal doses for the less than 250 days, that person would have been over 50 percent, right? Probably.

DR. BUCHANAN: Probably, yeah. But there was no bioassay records or external dosimetry.

MR. SIEBERT: Right. And that's an excellent point. This is Scott. In a case like this, during an SEC period, as long as the records are not the problem due to the SEC, if there's actual monitoring results, that does not preclude us from assigning data based on those monitoring results for that individual. It's only if there is no monitoring, then we can't assign any type of

coworker or other sort.

CHAIRMAN KOTELCHUCK: Right. So, approve? Comments? Anybody else on the Subcommittee?

MEMBER MUNN: Approve.

CHAIRMAN KOTELCHUCK: Okay.

MEMBER BEACH: I agree.

CHAIRMAN KOTELCHUCK: Okay.

MEMBER CLAWSON: This is Brad. I agree.

CHAIRMAN KOTELCHUCK: Alright, then. This is agreed upon. We are making much progress, wow. Based on a lot of work by NIOSH and by ORAU and SC&A.

So, let's see, well, if you're able, we went through it so quickly we still have time. We don't have to go 'til precisely 5 o'clock. We should leave some time for the last item on the agenda, summarizing review results for report to the Secretary. But I think we could take one more.

MS. BEHLING: Can I suggest, if Doug is prepared, would you want to talk about the BNL case, Doug?

DR. BUCHANAN: I was going to say, I was going to talk about that.

MS. BEHLING: Oh, I was going to give you a break. Go ahead. If that's okay.

CHAIRMAN KOTELCHUCK: That's okay with us, with me, and I'm -- that's fine. Okay. This is a compensated case. Both agree that it should be compensated and the PoC results are very similar. Okay. Go ahead, Ron.

DR. BUCHANAN: Okay. I'll get the BNL up here. Okay.

We have a BNL case here where the person worked as a [identifying information redacted] at BNL for a good number of years, [identifying information redacted] to [identifying information redacted], and was diagnosed with [identifying information redacted] cancer in [identifying information redacted]. Again, this was a partial dose reconstruction because of the BNL SEC, and so internal dose could only be constructed if there were bioassay records.

We see that, in Table 1.1, that -- this is where I started a while ago on the wrong case.

Okay. Table 1.1, if we could get that up just to give us a frame of reference here. We see that we assigned 144 rem, 51 percent PoC, and NIOSH assigned 151 rem and about 52 percent. So we were again fairly close. And we'll go mainly into the differences.

So if we go into Table 2.1, external doses, we have it broken down into the different categories there. And we see that they all are fairly close. Again, on the missed external dose there is some difference in the number of zeros, as we discussed in the past. The main difference in this whole case was that SC&A reads the TBD to mean, when they say to apply the neutron fading factor, to apply it to the recorded dose and not to the missed dose. And in this case, we didn't apply it for the missed neutron dose, NIOSH did. And so that's the main difference in this case.

CHAIRMAN KOTELCHUCK: Well, I'm not quite sure, neutron fading factor?

DR. BUCHANAN: Yeah. When you had NTA film, they would fade --

CHAIRMAN KOTELCHUCK: Oh, yes.

DR. BUCHANAN: And so, that 1.81, he multiplied the result by 1.81 to compensate for that. But we did not do that. The way the TBD reads, we didn't interpret that you should apply that to missed, only to measured, because it just uses the word "recorded," recorded dose. And so we will discuss that.

And then the rest of it was pretty much all the same. Internal dose, in Table 2-2, the summary there, no bioassay records, and so we used the TBD method. We used maybe a best estimate whereas NIOSH minorized (phonetic) some of the dose assignments, and we'll just go through that in a little bit of detail. There wasn't a whole lot of difference.

The main difference, one of the main differences, if we go down there to section 2.1, was in external dose calculations. There was like 14 periods that had NM in the dosimetry records which meant "not monitored." And so the way SC&A did, they addressed this by dividing -- additionally to that, there was 440 millirem greater sum dose than individual dose in the DOE

records. And so what both NIOSH and us assumed is that that [it] got left out someplace, and so how do you distribute that?

And so what we did was we applied that during the first two missed quarters, the ones that had "not monitored." And so that assigned 220 millirems in the first case and another 220 millirem during the second case. Whereas NIOSH divided 440 millirem by 14 and distributed it evenly among those unmonitored periods. So, again, that was a subjective call on both parts.

And so the periods then that were not monitored, the other 12 periods, we applied coworker dose, and, of course, NIOSH didn't need to do that because they distributed the other doses between those. So, that ended up essentially in NIOSH assigning a slightly less dose than we assigned.

So that brings us down to Table 2-3. And as you can see there, we assigned about 17; they assigned 16.7 total dose. And the neutron dose, they assigned 1.3 and we assigned 1.8. And, so, similar, but that was the difference in the

methodology that we used.

Then we come down to missed dose. Again, we used the physical counting and interpreting between the badge exchanges and came out 287 for photons and 383 for neutrons. And whereas NIOSH used 238 and 385.5 using the best estimate program. So, this obviously results in slightly different dose assignments, as we see there in 2-4. So we would assign slightly larger missed photon dose, they had more periods of missed doses.

And then on the neutron dose it was reversed because, again, NIOSH applied the 1.8 factor to the missed neutron for fading whereas we did not. And so that gave it higher missed dose than we did. Oh, I'm sorry, and that, again, wasn't applied because it was monitored.

Medical dose, we used the dose records and we agreed with that. Assigned the same doses except for 1949, the PFG. And we interpret OTIB-6 where it says for PFGs to areas outside the chest that you did not use the thyroid as the surrogate organ because the eye/brain would be outside the

primary beam of the PFG for that one only. And so the wording is not real clear but we underlined it there, the last sentence in the statement from OTIB-6. Right. And that's it.

Okay. It says, for PFG, it's the one where the thyroid sits in the eye/brain, it's just outside the primary beam. And so a better choice of a substitute dose conversion factor, for a dose to the eye/brain for the PFG is one where it's outside the primary beam. And so we selected, since the [identifying information redacted] is near the eye/brain, we used that instead of the thyroid. And so in Table 2-5 you can see that we assign a smaller dose because the thyroid and the PFG is inside the primary beam, whereas the eye/brain is not, and so we assign a smaller dose for the PFG. So, that is the difference in the medical dose.

On the internal dose where there was no dose records, the SEC prevents assigning it because there's no bioassays. So we both used the internal environmental dose and used the best estimate method. However, we assigned it for the full

years[identifying information redacted], and through the year it was diagnosed in [identifying information redacted]. It appears that NIOSH assigned it from [identifying information redacted], not including [identifying information redacted]. And they did not assign it for the year the cancer was diagnosed in [identifying information redacted]. So this decreased the dose somewhat. In Table 2-6, you can see there that -- 2-5, oh, the label is incorrect there. But, anyway, the comparison of internal environmental dose is there. You can see that NIOSH's doses are slightly less than what we assigned because of the truncation of the years which was done in the DR.

Everything else was pretty much in agreement, and so this brings us to section three. And we see that Table 3.1 there, the external dose, ours was greater because of the fading factor applied to missed neutron dose. The internal dose was slightly less because of the truncation of the year. The total dose was slightly greater by NIOSH and the PoC was slightly greater. We come out with 51 percent; they come out with 52 percent. And

that is our summary.

CHAIRMAN KOTELCHUCK: Okay. Again, excellent agreement. And I have no comment about it other than it seems fine and a good result -- a good result meaning that they agree. Any comments by other Committee Members?

MEMBER MUNN: I think it looks good.

CHAIRMAN KOTELCHUCK: Hearing none, I think that we're basically in agreement on this, right?

MEMBER MUNN: True.

CHAIRMAN KOTELCHUCK: Now, it's 4 o'clock. We have done a remarkable number of cases today, blind cases today. We've done eight. And we have only one case from set 17 to carry over, which was the one issue on Allied that hopefully will be resolved readily next time. And the first two we're going to have the PoC. I think we should go on to the last item, not take another case. We've done very well today, got an awful lot accomplished.

MEMBER MUNN: Correct. I would certainly like to compliment SC&A on the thorough

nature of the reports they're doing on these blind studies. It's very, very helpful to the reviewers.

CHAIRMAN KOTELCHUCK: Yes, they are. This whole set of discussions has been very clear on all sides.

We talked about tasking SC&A to provide additional summary statistics. And the only one that I -- I remember talking with Ted a little bit about this. When the Methods Committee was given the Excel file for cases 14 through 21, that was excellent and there were a couple of analyses done, graphs that were presented to us, and a little bit more will be asked.

It would be very helpful to have a similar review for 10 through 13, which is really a matter of collecting the data that you have for presentation to us. I think that would be useful. And, Ted, is that appropriate to ask SC&A?

MR. KATZ: Yes, of course.

CHAIRMAN KOTELCHUCK: Okay. And SC&A folks, that should be pretty straightforward, I hope.

MS. GOGLIOTTI: I'll have to look into what's been done in the past and see if we can combine that. But I don't think we'll have a problem.

CHAIRMAN KOTELCHUCK: Yes. That's fine. That would be fine. Just expand that table to start with 10.

Actually, no, you know what, 10 through 13 in a separate table, or do them as sub-tables of a larger combined table.

MR. KATZ: Dave, let me just -- someone refresh my memory, but the first report went to set what?

CHAIRMAN KOTELCHUCK: It went up through the end of set 9.

MR. KATZ: Did it? Okay. I wasn't sure that it actually went all the way to 9.

CHAIRMAN KOTELCHUCK: Well, actually, I mean, I believe so. I'm not certain. Let's just double-check it, but I'm pretty sure.

MR. KATZ: Okay. Well, so, all I was going to add to what you were saying was, in addition to -- I mean, SC&A should look at the first

report, basically the appendices, which is where they provided all their descriptive statistics. But some other descriptive statistics, or at least one I can think of that's going to be useful context for your report, Dave, is a summary of when these cases were done. Because I think timeframe is important.

So when NIOSH did the cases for this, describing that for all of these sets, the parameters for that, when the cases were done, so that the Secretary has a sense for what period of work is being evaluated, in effect.

CHAIRMAN KOTELCHUCK: Yes, that's a good idea.

MS. GOGLIOTTI: When they were completed by NIOSH and us?

MR. KATZ: Exactly. Not when the review was done, but when the dose reconstructions were actually performed. I think that's important context.

And then, for example, another sort of descriptive matter that's important, or statistic, is characterization of the cases as they're

distributed by best estimates versus any that are efficiency cases. And it may be that they're all best estimates, but it may be that there's some mix. If there's a mix, we would want to know that, too. Because I know the first report emphasized heavily that the vast majority of the cases were efficiency cases.

MS. BEHLING: Excuse me one second. The first report was the first 100 cases, so that would have only taken us up to the 6th set.

MR. KATZ: Right, thank you, Kathy.

CHAIRMAN KOTELCHUCK: Okay, good, thank you. Okay. Then I was wrong.

MR. KATZ: So we want this, all the summary statistics, to actually cover all the sets since the first report.

MS. GOGLIOTTI: Okay.

CHAIRMAN KOTELCHUCK: And then you were also going to provide for us the summary of the five cases where the observations were turned into findings?

MS. GOGLIOTTI: Yes.

CHAIRMAN KOTELCHUCK: That was from 10

through 13, although --

MR. KATZ: Yeah, that we've asked them to provide. I don't think it'll be that useful for your report to the Secretary.

CHAIRMAN KOTELCHUCK: No, I think that's true. That will just be helpful. So, just do that, as we said, 10 through 13. And, no, excuse me --

MS. BEHLING: Yeah, I may have made a -- this is Kathy -- did I say including the 6th set? It's from the 6th set on -- we did the first five sets.

MR. KATZ: Right.

MS. BEHLING: Okay. I thought maybe I made a mistake. Okay, sorry about that.

CHAIRMAN KOTELCHUCK: Okay.

MS. GOGLIOTTI: Okay. So these statistics will cover everything from the 6th set through the 13th set?

MR. KATZ: Right.

MS. GOGLIOTTI: Okay.

CHAIRMAN KOTELCHUCK: That's great.

MR. KATZ: And the other thing is I

think we'll need separate information. We're not finished with them, but we'll need a separate summary related to it, and I don't know how much will actually be statistics that SC&A needs to prepare. But you'll want to address the blind reviews as well in this report. But we're not through them.

CHAIRMAN KOTELCHUCK: Yeah, definitely. No, we're not. But we have remarkably good agreement so far.

MR. KATZ: Yeah.

CHAIRMAN KOTELCHUCK: So, alright. There's one point in summarizing review results, and that is report drafting plan. And I must say I certainly have not thought about a drafting plan or thought about a timetable.

MR. KATZ: One thing, I guess, Dave, that might be helpful is just some of what was done before. I think it's very hard to write by committee, or to think about sort of generalizing on the information and then summarizing it and coming conclusions. It's very hard to do that by committee together.

And I think what we did the first time was Mark Griffon drafted sort of a straw proposal for sort of general findings. Not writing out the report in its entirety, but sort of writing out the summaries of what's been learned and where we are, introduction, et cetera. And I think it works best -- I've just done so many of these kind of things -- if someone is to -- and I would say it should be as a Committee Member, not SC&A, but write, sort of try to take a first stab at just some summary points and introduction, et cetera. You may want to divide it among people, but then the whole Subcommittee can consider and improve.

CHAIRMAN KOTELCHUCK: Okay. Is this going to be addressed in some way by the Methods Work Group?

MR. KATZ: No, I don't think so.

CHAIRMAN KOTELCHUCK: Okay.

MR. KATZ: I mean, you may be informed by the Methods Work Group, because part of this report, also, which will be different from the first report or might be different, is you might want to address in this report to the Secretary also

a going-forward sort of few paragraphs, too, to let the Secretary know what's next.

CHAIRMAN KOTELCHUCK: Right.

MR. KATZ: So, that may be informative for that. But not really for this evaluative piece of the work.

CHAIRMAN KOTELCHUCK: Okay. And I will certainly need help for the 6th through the 9th sets, since I was not even there. Not that I can't look over the data, but I'll probably need help from one of our more senior Committee Members to help me on that. So that sounds like I should begin thinking about writing a draft and getting --

MR. KATZ: Yeah, I think you'll want the statistics first, because you'll want to wrap your head around those.

CHAIRMAN KOTELCHUCK: Yeah. And think about what I want to do, if I want to ask people to do some parts of it, other Subcommittee Members. We certainly will want to have another meeting. Well, let's say we're scheduled to meet in July, in the end of July. August, we should not

meet, we normally do not. So probably we're talking about September sometime when we next meet. And I should have something drafted by then, some outline at least. Something. Some work product.

MR. KATZ: Right. And another thing to say is you guys can shoot back and forth writing between the Members. In the meantime, you don't have to wait for a meeting just to share individual information.

So, for example, Dave, I mean, once you get the statistics, if you want to draft some initial conclusions, there's nothing to keep you from sharing those with the other Subcommittee members and getting their thoughts on some of those. You go over all of that in the next meeting. But if you want to get the ball rolling by sharing back and forth, that's fine.

CHAIRMAN KOTELCHUCK: Absolutely. That would be great. That's a good way and I will do that. And folks can take a look at it and if they want to make comments. And, again, I look to the senior members, not in chronological age but who have been on this Committee for a while. And

so that sounds good. Should we think now about next meeting date?

MEMBER BEACH: Before we go away from the draft of this, I have a question. Ted, if you remember, or somebody, maybe Wanda does, who did the breakdown of the summary tables?

MR. KATZ: SC&A did the statistical stuff.

MEMBER BEACH: Did they? Because I found that to be very helpful.

CHAIRMAN KOTELCHUCK: Oh, it was.

MR. KATZ: I mean, that's always -- that was what we just tasked.

CHAIRMAN KOTELCHUCK: Yeah, that was excellent, and that's what we want more of.

MEMBER BEACH: Thank you. Okay.

CHAIRMAN KOTELCHUCK: Great.

MR. KATZ: Right.

MS. BEHLING: This is Kathy. I wanted to just ensure that -- and perhaps this is already tasked -- but I believe that Rose said there were just a few findings that we still need to resolve from this 10 through 13 set. And I assume that will

be like first on the agenda for the next meeting. I just want to be sure how we're going to proceed with those findings.

MR. KATZ: It would actually be good to put those to bed before you do your statistics and sort of confirm or deny a particular finding.

CHAIRMAN KOTELCHUCK: Right.

MS. BEHLING: Right.

CHAIRMAN KOTELCHUCK: But we're going to -- that's going to be hard.

MEMBER MUNN: But then, I thought we had tentatively recognized that the reason they're outstanding is because they're out of our control.

MR. KATZ: No, they're not, Wanda. There were a couple that are sort of in the camp of a Work Group or whatever, but half of them were just that they hadn't been resolved by the Subcommittee.

MS. BEHLING: I was wondering, I mean, would it be appropriate for SC&A to just put together just a summary of those, a memo, and send it out that you all could discuss before the next meeting? I don't know.

CHAIRMAN KOTELCHUCK: Right. It seems to me the people in those other Subcommittees have to know that we have now a bit of a deadline ahead of us.

MR. KATZ: So some of those are just not going to be put to bed in time. The ones that are with the other Work Groups and Subcommittees, I wouldn't worry about those. You do need to call them out and you can call them out in your report. I mean, it's trivial in terms of the vast number of cases that are covered. But you can call them out in your report, or you don't even have to because the Secretary's going to hardly care about a few cases.

But then there were a few cases, I believe Rose said, that were not an issue, such as Hooker, that belongs with another Work Group but that simply hadn't been finished, resolved.

MS. GOGLIOTTI: The findings on Kopper Co. and the uranium mill observations.

CHAIRMAN KOTELCHUCK: Right.

MS. GOGLIOTTI: That's what we're waiting on NIOSH to draft.

MR. KATZ: So, those two, you know, again, it's a trivial number, but if you want to be as complete as you can then you want to put those to bed. You can't put them to bed by email because you cannot deliberate by email.

CHAIRMAN KOTELCHUCK: Right.

MR. KATZ: Rose, do you think they're ones that are going to take a lot of time?

MS. GOGLIOTTI: You know, I really don't know. I'll have to see NIOSH's response.

MR. KATZ: Okay.

CHAIRMAN KOTELCHUCK: Okay. If you draw up a memo of what's outstanding and indicate which ones are possibly under our control, okay, potentially under our control, and send it out to the Subcommittee members, that would be helpful.

MR. KATZ: Yes.

CHAIRMAN KOTELCHUCK: And then if NIOSH and SC&A are able to do any of them before the next meeting in September, then we'll certainly discuss them. And if not, we won't, right? But it would be nice.

MR. KATZ: Right. And then just -- you

can amend your summary statistics by these little numbers, you know, before -- it will take longer than that before you get the report finalized and then add statistics or appendices to it. So it won't be a problem. You can just amend those appendices after you've put these to bed.

CHAIRMAN KOTELCHUCK: Right. So, let's talk about the September meeting date. I'm looking at my calendar. Constitution Day looks pretty good. That's Thursday, September 17th. That's also Citizenship Day.

MR. KATZ: September 17th is out. I'm not available then.

CHAIRMAN KOTELCHUCK: Okay. I'm looking, I have on my calendar Rosh Hashanah and Yom Kippur for those of us who observe it. And are you out that week, Ted?

MR. KATZ: So, I'm only out the 17th. Half of the 16th through the 18th I have a work meeting in Morgantown.

CHAIRMAN KOTELCHUCK: Okay.

MEMBER BEACH: We have a Board call on the 22nd.

MR. KATZ: That's true.

CHAIRMAN KOTELCHUCK: Oh, do we? I don't have that.

MEMBER BEACH: Yeah.

CHAIRMAN KOTELCHUCK: Okay. Board call.

MEMBER MUNN: So, what about that week? The Board call would be out of the way on the 22nd.

MR. KATZ: So, the 23rd, I think, is a Jewish holiday, or the 24th.

CHAIRMAN KOTELCHUCK: Actually, the 24th is not, no. Yom Kippur begins on the evening of the 22nd, so that's fine. So, the 23rd is the day that people celebrate for that. So the 24th is fine in terms of availability. I don't know if it's a good date for members of this Subcommittee, and others. What does Thursday the 24th like?

MEMBER MUNN: Thursday the 24th is open for me.

MR. KATZ: Okay.

MEMBER BEACH: It's open for me.

MR. KATZ: It's good for me.

CHAIRMAN KOTELCHUCK: Good. Well,

we're all here except David Richardson. And the NIOSH folks and --

MR. KATZ: Is John Poston gone?

MEMBER MUNN: He said it was open for him.

MR. KATZ: Oh, okay. Good.

MEMBER POSTON: Yeah, I'm on. I don't know, I may have classes on Tuesday --

MR. KATZ: I mean, school's already started again, right.

CHAIRMAN KOTELCHUCK: Yeah. And we'll work around that, I'm sure. I hope. Okay. Do we want to just say Thursday the 24th?

MR. KATZ: Yeah. I mean, we'll have to get -- we'll have to check with Dave when he gets back, but, yeah.

CHAIRMAN KOTELCHUCK: Okay. And I'll write that down as 10:30 rather than 10 o'clock. I assume this was done out of respect for our Pacific Coast people who don't want to get up at --

MEMBER BEACH: Seven is fine for me.

CHAIRMAN KOTELCHUCK: How about

others? Wanda?

MEMBER MUNN: Well, the other one, if you want to suffer my indignity and my outrage at every turn, yes, that's fine. Otherwise, I would suggest that you stick with 10:30.

MEMBER BEACH: Okay.

(Laughter.)

CHAIRMAN KOTELCHUCK: Let's do 10:30. So I like 10:30 too. So, alright. Ted, you'll double-check with people?

MR. KATZ: I will do that.

CHAIRMAN KOTELCHUCK: And if that doesn't work out for David, we should have a second date.

MR. KATZ: Yeah.

CHAIRMAN KOTELCHUCK: We could think of Friday the 25th? I don't actually like to meet on Fridays, but we could.

MEMBER MUNN: How about Tuesday the 29th?

CHAIRMAN KOTELCHUCK: Tuesday the 29th is good for me. How about others?

MEMBER BEACH: Good for me.

MEMBER CLAWSON: It doesn't work for me.

CHAIRMAN KOTELCHUCK: It doesn't?

MEMBER CLAWSON: No, I'm sorry.

CHAIRMAN KOTELCHUCK: That's okay. That's why we're asking.

MR. KATZ: What about Monday?

MEMBER BEACH: Monday's fine.

MR. KATZ: Brad, what about Monday?

MEMBER CLAWSON: Monday would be better, yeah.

CHAIRMAN KOTELCHUCK: It's not good, huh?

MEMBER CLAWSON: Well, it just falls in the beginning of a week and that's when I've got all the new projects coming in.

CHAIRMAN KOTELCHUCK: Sure. How about Wednesday the 30th?

MEMBER BEACH: That's fine.

MEMBER CLAWSON: What about October 1st?

CHAIRMAN KOTELCHUCK: You know what, the 10:30 on Monday the 28th is actually our second

choice. If we can make a guess that we're going to probably be able to do it on the 24th, famous last words, then there's less than 50 percent chance that, Brad, you'll get stuck with it on the 28th. How does that sound?

MEMBER CLAWSON: That's all we've got to do.

MR. KATZ: Okay. Is the 10th no good? Thursday the 10th of September?

CHAIRMAN KOTELCHUCK: Wait a minute. Thursday the 10th, no. What is that?

MR. KATZ: I have no idea. It's a Thursday.

CHAIRMAN KOTELCHUCK: You want to start early in September rather than late?

MR. KATZ: Yeah.

MEMBER MUNN: I won't make it.

CHAIRMAN KOTELCHUCK: Okay. I'm okay.

MEMBER MUNN: I'll be traveling that day.

MR. KATZ: Well, what about September 3rd?

MEMBER BEACH: That's Brad's birthday.

MR. KATZ: Well, we love being around for Brad's birthday.

(Laughter.)

MEMBER MUNN: I'll be in West Texas where they don't have electricity.

MR. KATZ: Okay. Let's run with what we have and see if it works for us.

CHAIRMAN KOTELCHUCK: Very good. Alright. Okay, ladies and gentlemen, I call this meeting to a close and I thank everybody for a very productive day.

(Whereupon, the meeting in the above-entitled matter was concluded at 4:21 p.m.)