Centers for Disease Control
National Institute for Occupational Safety and Health
Advisory Board on Radiation and Worker Health
141st Meeting
Wednesday, August 18, 2021

The meeting convened at 1:00 p.m., Eastern Time, via video teleconference, Henry Anderson, Chair, presiding.

Members Present:

Henry Anderson, Chair
Josie Beach, Member
Bradley P. Clawson, Member
R. William Field, Member
David Kotelchuck, Member
Genevieve S. Roessler, Member
Phillip Schofield, Member
Loretta R. Valerio, Member
Paul L. Ziemer, Member

Registered and/or Public Comment Participants:

Roberts, Rashaun, Designated Federal Official
Adams, Nancy, Niosh Contractor
Barton, Bob, SC&A
Behling, Kathy, SC&A
Blaze, D'Lanie
Buchanan, Ron, SC&A
Calhoun, Grady, DCAS
Cardarelli, John, DCAS
Chalmers, Nancy, ORAU Team
Cook, Maddie, DCAS
Crawford, Chris, DOL
DeGarmo, Denise
Fitzgerald, Joe, SC&A
Gheen, Angelica, DCAS
Gogliotti, Rose, SC&A
Guido, Joe, ORAU Team
Hand, Donna
Hughes, Lara, DCAS
Kinman, Josh, DCAS
Kranbuhl, Alek, DCAS
Lewis, Greg, DOE
McCloskey, Pat, ORAU Team
Naylor, Jenny, HHS OGC
Nelson, Chuck, DCAS
Reeves, Kandyce, DCAS
Rutherford, LaVon, DCAS
Sheanshang, Daniel, ORAU Team
Taulbee, Tim, DCAS
Whitten, Dianne

Contents

Proceedings

(1:00 p.m.)

Welcome

Dr. Roberts: So good morning and good afternoon to everybody. I'm Rashaun Roberts, and I'm the Designated Federal Official for the Advisory Board on Radiation and Worker Health, and I would like to welcome you to Board Meeting 141.

So let me first of all get through some preliminaries for the meeting. Today is the first half day of the virtual Board meeting, and tomorrow will be the second and final half day. Like today, tomorrow's session is scheduled to start promptly at 1:00 p.m. Eastern Time.

All of the materials for the days, the meeting agendas, presentations, background documents and so forth are posted on the NIOSH website for this program under the scheduled public meetings, the August 2021 tab. If you will be participating in both days by telephone only for both days, you can go to the website and access all the materials, and you can follow along with the presentations, and the materials were provided to the Board members and other staff prior to this meeting.

If you take a look at the agenda on the website, there's a Zoom link which will enable you to hear and watch the presentations through Zoom. But I want to advise you that you'll only be able to speak -- you will only be able to speak to the group and I believe to hear the presentations through the telephone lines.

Speaking of telephone lines, in order to keep everything running smoothly and so that everybody speaking can be clearly understood, I'd ask each of you to mute your phone unless you're speaking of course. If you don't have the mute button, press *6 to mute. If you need to take yourself off press *6 again.

And also because we may be unable to see each other, some of us might be unable to see each other. Please identify yourself before your comments and questions. Let me also mention that we do have a Public Comment session that comes at the end of the day today. It will be between 5:30 and 6:30 Eastern.

I do encourage people to be ready right at 5:30 Eastern for public comments, because at that time we go right to the comments and if we run through all of the comments at the time, we will end the session.

We won't conclude before 5:30, but we will conclude at any point after that once everyone in the public who would like to comment has done so. So again, please join us right at 5:30 for the Public Comment session so that you're assured to have your opportunity.

And also so that you're aware, comments during the Public Comment session, speakers are generally limited to about -- limited to about five minutes. I will remind everybody of this again later this afternoon.

We're going to move into roll call. We do need to address conflict of interest for the Board, and actually there are no conflicts to address for today's agenda. So let's go ahead and do roll call, and we will start with our Chair, Andy Anderson.

(Roll call.)

Dr. Roberts: Great, okay. Anybody else? I'm sorry, was someone saying something? Okay. Are there any members of the public who would like to register their attendance at this point?

Okay. I don't hear anyone, so let's go ahead and move further into the agenda. Again, please periodically check Zoom or your phone to ensure that you're on mute when you're not speak. If you're on Zoom --

Ms. Blaze: Excuse me, hello. This D'Lanie Blaze. I'd

like to register my attendance.

Dr. Roberts: Oh great. Hi D'Lanie.

Ms. Blaze: Hi.

Dr. Roberts: Great, anyone else?

Ms. Blaze: It's double muted, thank you.

Dr. Roberts: Hi, yeah. Happens to the best of us. Anyone else in the public who would like to register attendance?

Okay. If you happen to be on Zoom, the mute button is located at the lower left-hand corner of your screen if you kind of hover over it. And again, if you're participating by telephone and you don't have the mute button, press *6 to mute. If you need to take yourself off, press *6 again.

So with that, I think all of that business is covered. So with no further delay, let me turn the floor over to the Board chair, Dr. Henry Anderson. Andy?

Chair Anderson: I'd like to welcome everybody to the 141st meeting. Hopefully before too long we will be counting increases in meeting numbers and have them all be virtual. But we're going to be virtual it sounds like till at least the end of this year, and we'll see how things progress and maybe hope for a face to face meeting come next spring.

So with that, I'd just welcome everybody. As you know, recruitment is going on. NIOSH is looking at to have additional Board members added to our group. So hopefully that will occur in the not-too-distant future and the nominations have been closed.

I understand there's been a fair number of nominations, so NIOSH will have quite a few people to choose from and I think the goal is to keep, follow the directive and statute to have a balanced board. So we may be choosing some individuals to fill out some of the areas where we've had some loss.

So in any case, that will be going on and NIOSH I'm sure will keep us informed as that moves forward. Hopefully, any new members can be bought on, brought on when we have a face to face meeting so we can have lunch and get to know them a little better than just by seeing faces.

I see Billy you've got your -- Bill Fields, you've got your picture up and I see your hair as a different color than when we see you in person. So with that, I'd like to welcome everybody and we'll move on to a program update from Grady if you want to switch over to his screen.

Mr. Calhoun: So Andy, you say I need some photoshopping going on there or what?

Chair Anderson: Yeah. I don't know what happened. I had trouble, but I'm using my CDC computer and where my other computer has all my nice backgrounds, and it refuses to accept them on my different computers. I've got a messy back office.

Member Beach: I was wondering why he was picking on poor Bill.

Chair Anderson: Right.

Member Field: I'm going to have to dye my hair now see.

Chair Anderson: Oh no. He's a fellow Midwesterner so -- okay Grady.

Mr. Calhoun: Can everybody see my screen there?

Chair Anderson: Yep.

NIOSH Program Update

Mr. Calhoun: Okay. It's not exactly how it's supposed to be I don't think, but as long as you can see it, I'd be happy with that. Okay. I too am glad to be here, but like Dr. Anderson, gosh I wish I could see everybody in person again. It's kind of a bummer being stuck in my office, which has been in my room

for the last year and a half.

So without further ado, Contracts and Staffing. We hired one health physicist due to retirement of one. We've got, unfortunately we have another one of our health physicists retiring this month, Tom Tomes if you all know him. He's going to be retiring this month, so we're going to begin the recruitment and hiring process beginning in the next fiscal year. So in the next couple of months we'll start that.

And as you can imagine, workshops, town halls and outreaches have been pretty few and far between. We don't have any finalized since our last meeting although DOL does, DOL has one planned in the not-too-distant future. But none with normal joint outreaches that we do with NIOSH.

I'll get into some of this at the end when we talk about our IT modernization, but a lot of these statistics are what we could -- what we could glean from the data that we can access right now. We have 160 requests at the Department of Energy. That doesn't mean that those are late, I would say that. That just means they haven't responded yet. Only 16 of those have exceeded the 60 days.

Right now, the transfers are going -- they're being requested from the Department of Labor, and then they're coming to us. So it's a little bit different system for now, and like I said I'll get into a little bit of that in that last slide.

We've gotten 53,392 cases from Labor, and we've returned 51,653. We still have 772 at NIOSH ORAU for dose reconstruction and just under a thousand have been closed administratively. We submitted 46,397 to DOL with dose reconstruction. 6,989 were pulled from dose reconstruction by DOL and for various reasons, and 3,567 were pulled because they qualified for special exposure cohort compensation.

Probability of Causation. Of the 46,397 DR (audio interference), 12,564 were greater than 50 percent; 33,824 were less than 50 percent. So we're still

running about the same percentages.

Active cases at NIOSH for dose reconstruction, 772. We have 578 that are actually in the process. 91 of the initial draft reports are with the claimants, and then 103 cases that we're preparing for dose reconstruction and that means we're just accumulating the data that's necessary to start that.

And here's the one everybody is going to be interested in. As we've mentioned in the last meeting or two, we're going -- we're undergoing a very significant IT modernization with our applications. DOL continues to forward cases to us for dose reconstruction. DOE continues to collect personal dosimetry for cases, and right now DOL is actually informing DOE of which cases are coming up so DOE can correct the dosimetry that's necessary.

We have, right now are in the process of getting mechanisms so we can return to our task of actually making that request to DOE. But for now, DOL is making those requests so DOE doesn't miss a beat.

For the cases that we had already received, ORAU is continuing to complete the dose reconstructions. Those cases will ultimately come to us for approval. They have not yet, at least not on a consistent basis and that's just due to our manual process that we have in place right now.

What we're doing for this, during this manual process is we're focusing on terminal expedite cases. So when Department of Labor tells us that they have somebody that's terminal, we still have some manual process that we put these to the front of the line and try to get those out as quickly as we can. They're the highest priority.

The Site Research Database, as you all know, is still extremely limited. We're working on that. I've been speaking with Rose Gogliotti of SC&A. We're in the process of trying to get the dose reconstruction supporting documentation for the Dose Reconstruction Review Committee for cases they're

reviewing.

We're trying to get that in place as quickly as we can, and the Board and SC&A will get access as soon as we have access. So there's a lot of moving parts here, you know. We talk about Phase 1 and Phase 2. Phase 1 is very manual. That's pretty much where we are right now. Phase 2 will be, you know, a lot more automated and as of yesterday we're thinking that that's going to start around January of 2022.

But it's not an all or none type scenario. We're continuing to make improvements to the way that we can create documents within this secure space and process claims. Another challenge we have right now is getting the information back and forth to Department of Labor. So again, that's because of our IT modernization effort and is no reflection on Department of Labor.

So that's all I have. I believe (audio interference). So if you have any questions on that I will gladly field those.

Chair Anderson: Grady, just a question. For the research database access, is the IT issue one of kind of getting to the database or undergoing potential changes to the database? So things that might have been in there previously will now have been characterized separately and be removed or be in a different access, or is this basically we're really just waiting to get into the door of the library, rather than the books in the library are going to be all --

Mr. Calhoun: Yeah, yeah. All the books in the library will be there.

Chair Anderson: Okay.

Mr. Calhoun: Right now, what we're working on is, you know, there's a lot of changes to our applications. But you know, it's not worthwhile for you or us to not be able to have a search mechanism like we used to. So they're looking, our IT folks are looking at ways of coming up with a similar search-

type mechanism, so that we can do the kind of queries that we used to do.

So it's an access issue and it's also we've got to make sure that once we get access to the hundreds of thousands of documents we have in there, that there's a meaningful way for us to search for what we need to look at. So yeah, yeah it's -- all the books are going to be there, so keep your library card.

Chair Anderson: Because I think some of the problem in the past is things would be four levels down in trying to know when you go one level and then you look at 10,000 lists of documents, which is the next level you want to go to. So the search engine becomes really critical.

Mr. Calhoun: It absolutely is, and yeah. We understand that and we don't have that capability yet ourselves.

Chair Anderson: Okay.

Mr. Calhoun: We're not going to hoard; we're not going to be keeping these accesses, if you will, to ourselves. Once we get them we will certainly be giving them to you and your contractor as well.

Chair Anderson: Okay.

Member Ziemer: Grady, this is Paul Ziemer. I have a question. Can you tell us what the status of the package that went to the Secretary on Savannah River is, or is that something that Nancy Adams would have to answer?

Mr. Calhoun: Yeah, I think that -- yeah. I have been told by the Secretary, but I think I would prefer to wait until I see the signed document.

Member Ziemer: Oh okay.

Mr. Calhoun: But as of, as of right now, there are -- there are no outstanding issues that would surprise anybody about that.

Member Ziemer: But the whole package is in the Secretary's office?

Mr. Calhoun: Yes sir.

Member Ziemer: Yeah. That's what I was wondering.

(Simultaneous speaking.)

Mr. Calhoun: Both for Savannah River and Superior Steel.

Member Ziemer: Thank you, appreciate it. Thank you.

Member Beach: Grady, this is Josie. I have a question. It's actually a two-part question, one part for you and one part for DOL later. But on Slides 5 and 7 you -- the numbers are 772 cases, and DOL's are much higher than that. When I was doing the math on even adding up some of those numbers, your numbers come in way lower than the numbers that DOL's reporting on their presentation.

Mr. Calhoun: Yeah.

Member Beach: Will you let us know --

(Simultaneous speaking.)

Mr. Calhoun: Yeah. I can tell you exactly what that is, is we've basically lost access to the databases to track all that.

Member Beach: Okay.

Mr. Calhoun: So we don't have as accurate a number, so we kind of try to piecemeal what we do know for that. So what we're used to relying on isn't there right now.

Member Beach: Okay.

Mr. Calhoun: That's what the differences are right now. I mean DOL and our numbers are never quite the same, but they're sometimes closer than that. So the reason is lack of access to our numbers on our

side, not DOL.

Member Beach: Okay, and for the IT modernization, we have no access to the O drive, K drive, and also when you go in just to get into the website, it looks -- it appears different this week than it did even last week. So that's what we can expect right now; is that correct?

Mr. Calhoun: Yeah. The O drive, K drive, whatever (audio interference) kind of things that you're used to seeing, that's part of the IT modernization. If you're referring to the actual DCAS Internet site, that has nothing to do with modernization. That's just the same, but they -- they must have made it look a little different.

Member Beach: Well that, it just -- when you go to access it, the last couple of days it shows that you're already accessed to it, which is unusual because you had to follow a lot of different steps with your --

Mr. Calhoun: Oh oh, you're talking with the bin card, right?

Member Beach: Yeah.

Chair Anderson: Yes.

Mr. Calhoun: Oh, I thought you were talking about our website (audio interference). You're right. I hit exactly the same thing and --

Member Beach: And that's just in the last day or two, right?

Mr. Calhoun: Yeah. That has nothing to do with IT modernization that I know of. That's exactly right.

Chair Anderson: That happened to me this morning when I was trying to get it, and it's totally different.

Member Beach: Can anybody answer why that's occurring, because that's -- that's new since yesterday that I know of.

Mr. Calhoun: I would -- nobody here on this call is going to be able to answer that I think. You know, I can -- I can check, but I've run into exactly the same thing.

Member Beach: Okay, so yeah.

Mr. Calhoun: Yeah. There's no reason for that, but the fact of the matter is that you were logged in and it's keeping you logged in I believe is what it seems like to me.

Member Beach: But that, yeah. That yeah, seems odd. Okay, thank you. That's all I have for --

Chair Anderson: Any other questions?

Member Clawson: Yeah Grady, this is Brad. You said that you guys are working on the terminal cases right now. I'm just wondering, because I was notified of several terminal ones in Hanford and I know you can't tell me online here but --

Mr. Calhoun: Generally. I think I can tell you generally is that once DOL, Department of Labor knows a case is terminal, and this is how we've always gotten the notification, they let us know and we put that to the top of the line. You know as of right now, there's less than ten that are in the system that are like that.

Member Clawson: Okay, that sounds good. That's what I wanted to make sure.

Mr. Calhoun: And if those -- if you know of one, make sure that the people actually contact Department of Labor to let them know if they haven't.

Member Clawson: Okay. I'll let Pat know. I just, you know, sometimes we get just notifications from other people, and I just wanted to make sure. I thought that we were still working on that, and putting them at a high priority. But I just want to make sure.

Mr. Calhoun: Yes.

Chair Anderson: Any other questions?

Member Valerio: Grady, this is Loretta. I have a question. So on these terminal dose reconstructions, are you obtaining the dosimetry records directly from the site? Are those being funneled through DOL and are you running into any obstacles getting those records to expedite these claims?

Mr. Calhoun: No, we are getting them directly from DOE. SERT still works. There have been a couple of firewall issues we're working through, but the big issue right now and it's too much information for you but it's SAMS is the issue, and that's the portal that basically is used to transfer information back and forth between DCAS and DOL.

The information that we get from DOE is through SERT, and for the most part that's been working.

Mr. Barton: Grady, this is Bob. Just to clarify, I mean no one wants (audio interference) that is here. But you actually have Phase 1 and Phase 2, and said research database will be available to us all as soon as it's available. But am I correct in assuming I'll not be in till January?

Mr. Calhoun: No, no. It will be before then for sure.

Mr. Barton: Okay.

Mr. Calhoun: Yeah. We actually have an area set up right now that we can place some files in for access. But those are pre-selected piles like the Dose Reconstruction Review Subcommittee. We know exactly what files they want. The issue is going to be for us to develop a search tool, so that not only can you look you can store them somewhere because you don't want to --

We all know you can't just open up one file and then have to go look for another file without having that one file stored somewhere. It's convenient for us all to have it stored. So that's one of the issues we're working through. So I certainly don't anticipate it

taking, taking anywhere near January so --

(Simultaneous speaking.)

Mr. Barton: --for the near term, if we needed a specific SRDB reference, will we be able to make that request and --

Mr. Calhoun: I would. I would. If you need the actual SRDB number, you know, you know let, let me or LaVon know and we'll try to get that into the system. That should be pretty doable.

Mr. Barton: And the other question I had was really to you have DR Tools modules that are usually used for dose reconstruction, are obviously really important for you to do like the blind cases and the DR audits. Is there -- I mean let's, do we have any sense when those might be available for us to use again --

Mr. Calhoun: I'll check. I'll check on that. That should be something that's very much that needs -- we need it too. Mr. Barton: Yeah.

Mr. Calhoun: To approve dose reconstruction. So you know, that may be available very soon. But let me check on that to make sure that you guys get access to it as well.

Mr. Barton: I appreciate it Grady, thank you.

Mr. Calhoun: I'll write that down.

Member Clawson: Hey Grady, this is Brad. What about, what about contractors that don't want to be in SERT like Boeing or, you know, for Santa Susana. What, how are we working with that?

Mr. Calhoun: Well Brad that is -- I didn't know of that wrinkle, so I'll have to check with that. I don't know if -- I don't know what the mechanism was for that typically, but I'll have to check. I don't know that. I don't know if DOL knows that information off the top of their head or DOE I mean. But when Greg's turn comes, maybe he can address that if he knows. But

ask anyway.

Member Clawson: Okay.

Chair Anderson: Any other questions? Okay then, let's move on to Program Update from DOL. Chris Crawford, change to your screen?

Mr. Crawford: Can you hear me? Hold on, let me get it here.

Chair Anderson: So Grady, are you the -- you the opener of the files?

Mr. Calhoun: Yes sir I am.

Chair Anderson: (Audio interference).

Mr. Calhoun: Can you see that one? Chair Anderson: Yes, no.

Mr. Calhoun: Can you see DOL, Department of Labor presentation?

Chair Anderson: I don't.

(Simultaneous speaking.)

Mr. Calhoun: Okay, hold on.

Mr. Taulbee: I think you have to stop sharing yours and then start sharing again.

Mr. Calhoun: Oh okay.

Chair Anderson: That's a good start.

Mr. Calhoun: Well, yeah. I'm not really the IT guy. Let's see --

Chair Anderson: Back to training, Grady.

Mr. Calhoun: There we go. How about now?

Chair Anderson: Nope.

Mr. Crawford: Oh there it is.

Mr. Calhoun: Okay. I'm going to mute myself, but I'll listen to Chris when he tells me to switch slides.

DOL Program Update

Mr. Crawford: This is Chris Crawford. Can you hear me?

Chair Anderson: Yes.

Mr. Crawford: Great. Thanks Grady once again for handling the slides, and let's go to the second slide.

Mr. Calhoun: It's not moving here, hold on.

(Pause.)

Member Beach: Chris, you jinxed him.

Mr. Calhoun: There we go, there you go. Page down, I gotcha.

Mr. Crawford: Great. This is our usual money slide. You see that Part B Compensation has amounted to 7.3 billion to date. Part E Compensation, 5.6 billion, and medical bills, 7 billion, for a total of $19.9 billion, and with 219,796 cases filed.

Slide 3. We've paid 1.69 billion for DR cases. That's without SECs, with 15,843 payees. We've also paid a small category 176 million with both an approved SEC and a DR with a PoC greater than 50 percent, and 1,351 payees fell under that category.

Slide please. There we go. For referral case status, our numbers show 54,479 cases referred to NIOSH for dose reconstruction, of which 52,770 cases have been returned to DOL from NIOSH. 46,234 of those came back with a dose reconstruction, and 6,536 were withdrawn from NIOSH with no dose reconstruction.

Our numbers show, and this is where Jody saw the discrepancy, 1,709 cases currently at NIOSH, with 1,088 initial, original referrals to NIOSH and 621 reworks or returns to NIOSH.

Next slide. Here we the cases with a DR and a final decision. These are not SEC cases except for a very small number. Of these 36,853 cases with a dose reconstruction and a final decision and have final approvals at 12,608 and final denials at 24,245. This ratio has held up for quite a long time.

Slide 6 please. Now for Part B cases filed, we see that 11 percent were cases referred to NIOSH that were SEC cases. 31 percent were original cases that were just sent to NIOSH initially. 38 percent were beryllium or silicosis-related cases. 7 percent were RECA, and then there are 13 percent of SEC cases that never were sent to NIOSH.

All right. Also a familiar slide, Part B cases with a final decision, and this includes SEC cases. We have 108,507 cases with final decisions in Part B. There were Part B approvals for 57,837 and denials of 50,670, which is 53 percent approval, 47 percent denials.

Next slide, there we go. For work sites, the usual suspects are the Nevada Test Site, Savannah River Site, Hanford and Y-12. Okay. At this meeting, Y-12 and Oak Ridge are being specifically discussed. Y-12, these are both big sites as you see. We have 22,365 cases with 5,487 returned with dose reconstruction, 9,922 final decisions.

Grady, do you want to go one more slide and then come back to this one? We'll follow Y-12 all the way. So Part B approvals Y-12, 6,097. Part E approvals, 6,956. Total compensation and medical bills paid 2-1/2 billion.

Back to 9 Grady, thank you. Oak Ridge Laboratory, X-10, we've had 10,964 cases. 3,117 were returned by NIOSH with a dose reconstruction. We have 4,840 final decisions.

10. We have Part B approvals of 2,744, Part E approvals 3,190, $1.1 billion in total compensation.

Slide 11. This is an upcoming outreach event, a little

rare as you see but we have one coming up next week, one week from today on the NIOSH and the DOL Ombudsman's Office, and of course we don't know how many people will attend that. But that's the role of the Ombudsman's Office, how the Ombudsman can assist the claimant and give practical information and tips on the claims process.

Next slide. Here are events already held, outreach events. We had a stakeholder update July this year with 153 attendees. In June, we had a medical bill reimbursement processing meeting with 232 attendees. May, we had a policy discussion with 108 attendees, and then in April we had a medical benefit coverage meeting, two attendees. I believe that's the end. Let's check the next slide Grady. There we are.

And that's the end of the presentation. If there are any questions, I'd be happy to try to answer them.

Member Beach: This is Josie. Do you mind if I start Henry?

Chair Anderson: Oh, go ahead.

Member Beach: I just have a question on -- I'm not going to ask the numbers between NIOSH and DOL. That was one I was going to ask, but so DOL's number of cases, what you list is different on your Slide 4 than it is on your website.

I know there's a difference of a couple of weeks. Is that, is there a reason why that would be different? I think your website was August 8th, and then this one was of July.

Mr. Crawford: Well that's right. We do use different end periods, end dates for the statistics, which certainly would cause some discrepancies there. Is there a difference in how the cases are representative? Does DOL use unique workers or cases when they're using -- for their numbers?

Mr. Crawford: So a case refers to a unique employee, okay, where the claimants can be a much larger

number than that. There are multiple claimants in some cases.

Member Beach: So I guess that's my question then. Do you use unique workers or case workers? Okay, thank you. That's all I have.

Mr. Crawford: Sure.

Chair Anderson: Any other questions? Okay, no other questions. Let's move on to DOE. Greg, let's get his slides up.

Mr. Calhoun: Greg, am I sharing for you? I popped it up there.

DOE Program Update

Mr. Lewis: Yeah, this is Greg. I can see it. Can everybody hear me? I'll take that as a yes. Grady, you can go to the second -- go to the second slide please. I'm still seeing the first slide.

Here we go. So I think the big item for me, I'm just going update everyone on a little news, and I figure much like Grady said, I think, you know, people probably most want to know about what's going on with the IT modernization effort.

You know, Grady mentioned it a little bit, but we've been involved in this as well. We've been meeting weekly with DOL and NIOSH or I have, to discuss the effort and make sure we're all on the same page as far as the different actions being taken.

Our role at DOE, of course, is much smaller. The one thing that we are doing, as Grady mentioned, is Department of Labor, even though NIOSH isn't receiving all of the new dose reconstruction cases or is not able to work on all of them yet with the IT issues, Department of Labor knows who they would be sending over.

So DOL is sending us lists every two weeks of the cases that they would have referred to NIOSH. So we're starting the -- we're starting the process of

gathering those records so when NIOSH does come back online and starts to make the actual request in our SERT system, we should have most of those all ready to go, all pulled and, you know, reviewed and sitting there ready to go. So hopefully, you know, NIOSH is not going to have to wait another 30 to 60 days for us once they are back online.

So we are doing that, and then of course we're also continuing to, you know, when NIOSH is able to make request in SERT, whether it's a terminal or just something they're able to work or continuing to work those. And then we also have the ones that, you know, there are a few that are later that we're still working on from before the modernization that we're trying to get back out.

So that's the, you know, that's our role in that modernization effort. The only other thing I'll mention, I think the last couple of meetings I talked about are, you know, how we're adapting to COVID and able to respond to the requests.

For the most part most, you know, and in fact this is probably true for most of the pandemic, our sites were able to still gather records and respond. We had, in particular we had problems at two sites, and that's the Nevada National Security Site or Nevada Test Site and the Y-12 site. Now Nevada, there was a number of issues in play mostly because the security there and where their records are located.

They were down for, fully down for three to four months at the beginning of the pandemic, and then they had some key staff retire. So they've been catching up, but they have been catching up steadily. I've been monitoring their progress and they still have a number of late claims. But they're, each month they're getting that number down, and I think they anticipate being back even by hopefully the end of September possibly October. But they are working that number down and getting those claims out.

Y-12 has been going a little bit up and down, but their issue is the Federal Records Center, which almost all

Y-12 records that they use to respond to DOL and NIOSH requests are held at the Federal Records Center. Those have been open -- they were closed initially, then they opened back up, closed again, open-close.

So it's been a little bit of a see-saw there with the Federal Records Centers. But the Y-12 number has also been coming down recently. So we're continuing to work Y-12 and unfortunately if you saw, I think, on Chris' slides, those are two of the biggest four sites, of course. But we're trying to do the best we can and we're making progress on both.

Next slide, please, and I'll go through this. These are sort of my standard slides, so I'll go through this fairly quickly. But if, you know, anyone has questions or wants more detail I can always go back at the end.

So at DOE, we of course provide records. That's our core mandate. We work with DOL, NIOSH and the Advisory Board to provide worker and facility records.

Next slide. We do this responding to individual claims in SERT. We also work with NIOSH and DOL for site characterization projects. So you know, the stuff we're talking about today and also as well as Department of Labor is always working with us to update their site exposure matrix.

And then we also conduct research on covered facilities, and we actually I think are preparing a Federal Register notice with a couple of changes for smaller facilities. We anticipate that coming out in the next month or so.

Next slide. I'll skip over this. You know, most of you know our process is not, is not straightforward. It's not one file for one individual. We might have to go to multiple places on site for, particularly for workers that had a long career. Their records could be in multiple locations, databases, hard copy, microfilm, microfiche, that kind of thing.

Next slide. And recently, I just went back for about a

month looking at some of the requests that have come in. I know we've been responding with the DOE Office of Legacy Management, and also had a recent request for Hanford as well as Idaho National Lab.

There's been others, but those were kind of three of the bigger ones we've had recently, and of course all of the facilities you're discussing today. We've likely responded, you know, a while ago to get NIOSH and SC&A the material they needed to come up with their documents.

Next slide. And document reviews we continue to, you know, even -- it was a bit challenging earlier in the pandemic because less staff. They were really at a skeleton crew in our Office of Classification. So the folks at headquarters that reviewed these documents, you know, they had a few folks in but many folks not, and this is something that they do have to do, you know, inside a secure area.

But you know, they do have more folks back in the office now. I think those reviews are happening pretty quickly at a headquarters level, and I believe so at the sites too. I know, you know, it can be more of a mixed bag out of the sites, particularly because the documents that we see at headquarters are the final reports so those tend to be shorter.

The documents the sites are reviewing are the actual source documents, so those can be hundreds of pages long. So they're a little bit more challenging, but I believe most of our sites are keeping pace with NIOSH's need, and if that's not the case please let me know.

Next, next slide. I talked a little bit about facility research earlier. We are preparing and working on a Federal Register notice and we're, you know, fairly -- it's not really frequent, but we do have a few sites here and there that we're looking at. There's kind of a steady trickle of sites that we end up reviewing for coverage, and we do that of course along with DOL and NIOSH.

Next slide. So our Former Worker Medical Screening Program, I'll just put in a plug there. You know, as you might imagine because they're bringing in people for, you know, live, in-person medical screenings, they were down for quite a while at the start of the pandemic.

But most of our former worker programs, in fact all of them have been screening lately, you know. They're really watching the numbers in different areas closely and in some areas they have had to halt screenings again due to the recent rise in cases. But they're following it all closely and the doctors associated with the former worker program are very cognizant of safety, and for the most part we are still doing screenings now.

So if anyone here has folks that might want to take advantage of that, it's pretty, it's -- we work hard to find a screening location close to someone's house or it's very convenient, and it's done by occupational medical physicians. So they're very aware of the things that people might have come in contact with in their work at a DOE site, and we screen and test accordingly.

So next slide. This is just the contact information for the former worker program, and I think the last slide is questions. So if anyone has questions.

Member Ziemer: Greg, this is Paul Ziemer. I have a question. Can you hear me okay?

Mr. Lewis: I sure can.

Member Ziemer: Yeah. Well, I've had an ongoing interest in the staffing that DOE has in the environment, health and safety arena, and I was looking this morning on your website. I noticed your health and safety group or Office of Health and Safety is currently headed by an acting director. I think it's Brad Davy, who also is the director of the -- I guess it's the Worker Safety. So he's kind of doing a double job like.

I wonder what the status of the leadership in the Office of Health and Safety is? Are they looking for a regular person or will they continue the, using an acting director?

Mr. Lewis: Well, that's an excellent question and your timing is -- I think if this meeting was a couple of weeks later, I would have a name for you.

Member Ziemer: Oh.

Mr. Lewis: What I can tell you is someone has been selected, but I don't believe the official announcement has been made. So I think at the next meeting, I will certainly have information for you and that individual may even be able to participate.

But yes, there is an acting. Brady Davy is acting, and he should not be acting for very much longer. I think another couple of weeks we will have the new, the new director of the Office of Health and Safety.

Member Ziemer: Oh yes. But I wasn't actually looking for a name per se. I just wondered what the status was and I have some concern as to how it might affect your operation to have just an acting director in place. So I'm glad to hear that it's moved along.

Mr. Lewis: Yeah, it's absolutely moving along. I'll also say Brad Davy has been very supportive and, you know, actively working with us to communicate through upper management, and I think we've been in very good hands. But there will be a permanent individual in that job very shortly.

Member Ziemer: Thank you very much.

Member Clawson: Hey Greg, this is Brad. I guess you heard my question that I asked Grady, I guess, especially with Boeing and stuff like that with this process that we're going through. Can you kind of shed a little light on how this is going to work with them?

Mr. Lewis: Well you mean with the process with the

NIOSH modernization?

Member Clawson: Yes, but also too where they don't want to be a part of SERT for whatever reason. You know, we've had trouble before, you know.

This Santa Susana has kind of been an interesting site to be able to work through because it has its own nuances that are problems in my eyes, of information-gathering and so forth with Boeing. So I was wondering how, how this is going to work with this modernization part?

Mr. Lewis: Well so I don't think the NIOSH modernization effort is really going to have much of an impact on Boeing per se and that, you know, I don't know if that's a good thing or a bad thing. We have had some challenges getting records out of them in a timely manner, and they don't use SERT.

That's more for, you know, we made a good run at trying to get them on SERT. It's not a DOE issue that we can't get them on SERT. But there are corporate firewalls and there are corporate requirements. It just wouldn't allow them to, you know, there were certain things that they needed to be able to do from a firewall/IT perspective that they were not willing or able to do to get onto SERT.

So we do have a work-around in place, and fortunately they don't, you know, if the number of cases that they did was, you know, closer to Y-12 or a Nevada Test Site or something like that, I think the work-around would be extremely cumbersome. But given that they don't do huge numbers of cases, the issues, you know, the hold-ups and the timeliness issues I really don't think, other than a few times early in the pandemic where they had sent information and it took us a while to get in and get them.

Really the issues aren't related to them not being on SERT or, you know, they're not really IT issues. It's just a matter of sometimes on their end it takes more of a while to pull the records and get them over to

us.

Member Clawson: Okay, thank you.

Chair Anderson: Any other questions?

Anybody on mute who's trying to talk?

Mr. Lewis: All right. Well thank you, Dr. Anderson.

Mr. Calhoun: Okay, this is Grady, and I'm going to stop sharing and let whoever is next take it over.

Chair Anderson: Next is Gen and Oak Ridge National Update.

Member Roessler: Henry, I think you're on the wrong day.

Member Ziemer: I'm showing Josie Beach as being next on the program here.

Chair Anderson: Okay --

(Simultaneous speaking.)

Chair Anderson: Okay. Then we'll go Procedures Review.

Member Beach: Okay, and I think --

Chair Anderson: I got switched. I've got an old --

Procedures Review Finalization

Member Beach: All right. I want to look if Kathy's all ready to go. I will say the Subcommittee, there was a lot of discussion at the last Board meeting, as you all recall. We, Kathy had presented or we had presented a new way of working through some of our backlog. We hope to have a meeting to discuss some of the issues that were discussed during the last Board call, but we were unable to meet.

So those are all going to be held in reserve. But Kathy very nicely went ahead and moved forward with several cases, and if you -- if you have any questions

for me, I'll hold on for a sec. If not, I'm going to turn it right over to Kathy. Okay Kathy, it looks like you're up. Thank you so much for the hard work that you put into this.

Ms. Behling: Can you hear me?

Member Beach: Yes.

Chair Anderson: Now we got you, yep.

Ms. Behling: You got me, very good. You're welcome and let me just -- I think Josie just started out exactly the way I was going to. At the last Board meeting, we agreed to revisit some procedure reviews that were previously presented to the Board but not formally closed.

So that's what I hope to do today, and during our last presentation, this is the list that I included that those procedures that have been discussed by -- with the Board. Now today, I'm going to cover most of these. There are several that I did not include because after pouring through lots and lots of transcripts, I realized the OTIB-0052, the PER-0014, PER or OTIB-0020 and the other 52 that was discussed, they were thoroughly complex and there's still some outstanding issues.

I think that we'll probably discuss those separately. They're intertwined a little bit also. So we'll probably discuss those separately.

Member Beach: Kathy, let me -- stop just for a second. I had 52 and 20, and you said also 14; is that correct?

Ms. Behling: PER-14, yes.

Member Beach: Okay.

Ms. Behling: Like I said, they're all intertwined to some extent. Construction trade workers and external co-exposure methodologies and guidance. So I think it, it would serve us well to put those all together, and maybe do a separate presentation for

those. It seemed to make more sense to me.

So the first, first OTIB that we will go through the first guidance document is OTIB-0070, and NIOSH uses this procedure to assess internal doses at AWE facilities during the residual radioactive periods. The OTIB provides guidance on internal dose for resuspension of surface contamination, and this was initially reviewed by SC&A in August of 2008 and presented to the Board on March 12th, 2013.

Now there were a total of 15 findings associated with this OTIB, and I did put together a handout for everyone because to list all of the findings and the details associated with those findings. I thought for purposes of this presentation, I tried to summarize just the key findings so that we could move through these.

However, while I'm walking through these OTIBs and procedures, if there is anything that -- any finding that I'm not discussing during this presentation or something that you want more details on, please stop me and I will try to get your answer, your questions answered and we can go into more details about very specific findings.

Member Beach: And Kathy before you move on, I apologize. I want a little bit of a clarification here. Do we want to stop after each one of these procedures?

Ms. Behling: Yes.

Member Beach: For questions, and then Rashaun, will we go ahead and formally close those out after each one? I'm not sure how this --

Dr. Roberts: That would be my recommendation, to go one by one.

Chair Anderson: Well let's do them one -- I think they should go pretty quickly.

Member Beach: Okay thanks Kathy.

Ms. Behling: Yeah. That's exactly what I intended to

do. Rather than go through them all, let's stop, pause. Let's talk about each one and then perhaps we can formally close them out at that point.

Member Beach: Okay, because I was thinking back. We didn't close out the two that you presented at the last meeting formally did we, or am I mistaken?

Ms. Behling: No, we did not.

Member Beach: Okay. That's kind of what I thought, so I wanted to make sure that didn't happen moving forward.

Ms. Behling: Yes, yeah.

Member Beach: Okay, thank you.

Ms. Behling: I was going to ensure that didn't happen.

Member Beach: Yes.

Ms. Behling: Okay. As I said, the OTIB-0070, there were a total of 15 findings and several of the findings had to do with the resuspension factor and how the source term depletion rate was derived. The resolution to that finding was NIOSH issued a Revision 1 of the OTIB, and introduced appropriate information in there to adequately address this concern, or these concerns. There were several findings.

The second major issue or major OTIB findings were associated with an Attachment B, and Attachment B of this document was the thorium source term data. We questioned the use of the air concentration survey data, and NIOSH came back and said that this appendix was really never used, and when they published Rev 1 it was taken out. It was eliminated from Rev 1.

So that pretty much summarizes just the key findings associated with OTIB-0070, unless any of the Board members want to ask about any specific findings. And if not, we'll go on to the Board discussions.

After the presentation on, you know, in March 2013, Board members asked two questions, and I have gone through again these transcripts and tried to paraphrase the best I could the discussion of, that was held after the presentation. If there is any additional questions, again we'll stop and talk about that.

But the first question had to do with is this default resuspension factor appropriate for an outdoor setting, and the answer to that is that no. It's really only used for indoor activity at facilities where there's been post-operational clean-up, that that's been performed at that facility. So that seemed to satisfy the Board on that question.

And then Question 2, does this default resuspension factor, is it appropriate for all the AWE facilities? In the OTIB, there is specific instructions for facilities that did not have the post-operational clean-up performed, that you do -- you do a site by site analysis and you don't necessarily just blindly assume this default resuspension factor.

And with these responses, the Board had no other discussions on the OTIB-0070, and so I think this is probably an appropriate time to stop and determine if there any additional questions or if we can perhaps formally close this document.

Member Beach: Okay, and noting that the Subcommittee closed these in the subcommittee.

Ms. Behling: Correct.

Member Beach: And we'll open it up --

Member Ziemer: Basically when we -- this is Paul again. Would we be saying that we are closing 15 findings in this action or --

Member Beach: Yes.

Member Ziemer: --what would this action be here?

Member Beach: It would be that we are closing the

15 findings previously closed by the Subcommittee, but opened for discussion because the whole Board has to take the action. So yes, it would be all 15.

Member Ziemer: Thank you.

Chair Anderson: Is that okay with everyone?

Member Beach: Yeah, and what kind -- do we need to take this to verbal vote Rashaun or?

Dr. Roberts: Yeah. I think you do a motion, you know, that the findings are closed or things have been resolved with the documents, and then people say aye or they voice opposition if they don't, okay?

Member Beach: So comments or concerns, or additional questions?

Then, Rashaun, can I make the motion?

Member Ziemer: Just a clarification note. I believe under Robert's Rules, I'm not trying (audio interference) on Roberts, but if that were true the order, a recommendation from the Subcommittee constitutes a motion and it does not require a second.

Member Kotelchuck: Correct.

Member Beach: Okay. So then these all will be under that classification, that we agreed they're ready to close, and just talking about OTIB-0070 here. Rashaun, do you want to take that vote?

Member Ziemer: I think the Chairman has to --

Chair Anderson: Well, okay.

Member Beach: Oh, I'm sorry, yes.

Chair Anderson: The motion is to close out the 15 issues that have been raised and previously discussed and closed by the Committee. So all in favor?

Member Beach: And this was discussed at a Board meeting also previously.

Chair Anderson: Henry?

Member Kotelchuck: May I suggest to expedite things that we just have a show of hands for each of them, and then at the end of all of them, we actually have a formal roll call vote, which we'll vote on all of them at once, so that we only need one roll call.

Chair Anderson: Yeah, or what I'll do, I can just ask anybody, does anybody object at this time and then we'll do the vote at the end, rather than go through the show of hands and it's --

Member Kotelchuck: That's fine, good.

Chair Anderson: Yeah. Is that okay Paul as our parliamentarian?

Member Ziemer: Yes, that would work.

Chair Anderson: Yeah. So does anyone object?

Member Ziemer: Or you can say without objection it's carried.

Chair Anderson: Okay. Without objection, we will accept the recommendation by the Subcommittee.

Member Beach: Okay, and understanding that Kathy, I know we'll update the BRS with, with all the current or the information necessary, correct Kathy?

Ms. Behling: That's correct, when we get access to the BRS.

Member Beach: Absolutely, absolutely.

Ms. Behling: Okay. I think we can move on then. Thank you. Okay. Let's move on to OCAS-IG-001, and this is External Dose Reconstruction Implementation Guideline.

This guideline is general guidance for reconstruction of external dose, and to be reemphasized that it's just general guidance. SC&A reviewed Rev 1 and Rev 2, and then we were asked to do a focused review of

Rev 3 to ensure that all of the previous findings were addressed.

And the -- this was presented to the Board again on March 12th, 2013 at the Board meeting. There were 24 total findings, and I've tried to summarize those findings in these tables. The first finding had to do with issues such as structure and clarity and specificity of the guidance, and NIOSH accepted that and did make appropriate changes in Rev 1 of the Implementation Guide.

We also questioned that there was some inappropriate limits of detection values, which was corrected in Revision 2. There were some, several issues on neutron doses that carried over in the two revisions, and then it ultimately in Revision 3 there were neutron to proton ratios added for evaluating the missed neutron doses.

Again on this slide, there was an under-estimation of dose conversion factors that we identified for the bone and red bone marrow, and actually SC&A or NIOSH introduced into Revision 2 a table that added collection factors not only for the bone and the red bone marrow, but also the lung and the esophagus, so that resolved this particular finding.

Moving on, the appendix -- appendices to the Implementation Guide identified dose conversion factors for PA, rotational, isotropic and AP geometries. It was determined because of the positioning of the dosimeter, which also was worn on the lapel on the front, that the DCFs were -- all other geometries were inappropriate.

And so in order to resolve this, NIOSH initially put out separate guidance, which recommended that the dose reconstructors use only the AP geometry, and that was ultimately introduced into site-specific documents and also workbooks.

There were several, there were some issues and findings associated with that angular sensitivity of the dosimeters was not accounted for, and so

wording was put into Revision 2 that directs the dose reconstructor to site-specific documents. Also issues associated with dosimeter uncertainty and the selection of uncertainty distribution, and NIOSH indicated that site-specific documents and workbooks address these concerns.

Moving on, this is -- those are the -- that's a summary of the findings that we had. I don't know if anyone has additional findings based on the handout that I gave you, you can please, you know, we can talk about those. But here were the two questions that were asked at the end of that presentation.

The first one had to do with does IG-001 assess film badging inadequacies, and IG-001 predates all other guidance. It was one of the first documents that was published. And so film badge limitations are actually addressed in site-specific documents.

And the second question was did SC&A consider the experience gained through the dose reconstruction process? Here again when we reviewed this, it was very early on in the process. So no, we did not look at dose reconstructions as part of this review. It was early in the process.

So we can pause here again and ask any questions, or we can determine if we want to close out IG-001.

Member Beach: Okay, thanks Kathy. Any questions or comments regarding IG-001?

Chair Anderson: And you move to close it out, right?

Member Beach: Yep. Yes we are. Same as before. The Subcommittee recommended closing, and we did have full Board discussion in 2013.

Chair Anderson: Yeah. So if there are no objections, we'll accept the motion by the Subcommittee to close out IG-001.

Okay.

Member Beach: Thank you.

Ms. Behling: Okay. Then we'll move on to OCAS-TIB-0010, Revision 2. This is a Best Estimate for External Dose Reconstruction for glovebox workers, and the TBD provides a collection factor for best estimate of external dose reconstruction to lower torso organs for workers who worked in gloveboxes and they wore their dosimeters on their lapel.

I'll just mention here because of the questions that were asked in the findings, the collection factors were determined by calculating 30 gamma flux points on the chest and 30 gamma flux points on, covering the abdomen. Then there were ratios taken between the abdomen flux and the chest flux, and the mean of those ratios was used as the correction factor. So that's how the correction factor for this best estimate was derived.

And SC&A reviewed this document back in June of 2006, and the Board (audio interference) out this TBD. The presentation for TBD-0010 was July 17th, 2013.

Okay. There were nine total findings, and key findings included again lack of specific information regarding the model, the model glovebox data, and in Revision 3 of TIB-0010, NIOSH added an Appendix B, which provided all the information that we were asking for regarding the modeling.

The TIB did not specifically identify the lower torso organs, and there was information added in Section 2 of Rev 3 to resolve that finding. And then there were three findings I grouped together here for questions about the design of the analysis, assumptions of glovebox model and the Attila software.

Actually those findings were put in abeyance back in 2013, the resolution to those findings were supposed to be that the OTIB or the TIB was going to be updated to recommend using 95th percentile instead of the mean correction factor.

Now while I was preparing this presentation, I went

in and noted that TIB-0010 has been revised. There's a Rev 4 out there, but the recommendation best I can tell is still saying to use the mean value and not the 95th percentile value. So this is something after I go through the questions that the Board has. Seems to me this is something that we may need to hold off on approving, but that's obviously your decision.

So let me go through the questions. Okay, several questions here. The questions regarding the specific design of the glovebox as used in the model.

NIOSH's response was that the modeling and the shielding and those types of things is not that important as the geometric considerations for the flex measurements that were done on the chest and on the abdomen. That was more important than the design of the glovebox. That was not how -- that's what, how the correction factors were modeled and designed.

A second question also about shielding, and if there -- if shielding was considered in the model design. Again, the response was no, this is a geometric correction factor.

One question was do we take into the account, did they take into account the height of the worker, and NIOSH responded yes, that they used reference man height, but also indicated that the 95th percentile value would encompass badges from -- to include the lowest possible organ.

Again, another question had to do with was the -- if the worker wore a leather apron did that -- was that taken into? And again, NIOSH's response was it was not important in deriving this correction factor. That's more of a question for how we interpret the badge location.

And then finally a question was asked, is this used for best estimate, dose reconstructions and the answer was yes. So that summarizes your questions and as I said, the last issue there associated with the in abeyance finding, moving to where recommending a

95th percentile value rather than a mean value has not been updated in TIB-0010, based on -- based on what I could see, and so I'm not sure how the Board wants to proceed.

Member Beach: Kathy, I would say we should hear from NIOSH on this, and if NIOSH has an answer for that, if they could address that now. But I believe we should leave this open. I agree with that recommendation. I don't know how other Subcommittee members feel.

Member Ziemer: This is Paul. I'd like to ask whether SC&A has actually reviewed that final revision, the one you just --

Member Beach: Yeah. She said she just did, yeah.

Member Ziemer: Oh, she did (audio interference) for this. But was there an official review of it?

Ms. Behling: Not of Rev 4. The last -- no we did not review Revision 4. I happened to look at Revision 4 that I could report back as to whether this in abeyance finding was (audio interference), but it was not.

Chair Anderson: When did Rev 4 come out?

Ms. Behling: Let me look. I don't have that date in front of me. Let me -- just one second.

Member Ziemer: While she's looking at that, again this is Ziemer. In any case, we probably should keep that in abeyance so SC&A gets a final look at it.

Ms. Behling: Yes.

Member Ziemer: And at the organization.

Mr. Taulbee: This is Tim.

Member Beach: Go ahead Tim.

Mr. Taulbee: If I could go ahead and respond to this. We have not revised TIB-0010 yet, and the reason

for this at this time has been that we are going through the process of implementing new dose conversion factors through ICRP-0116.

And so some of, you know like which ones are, you know, considered surrogate or not surrogate, but which ones are in the lower abdomen and all of that is not really changing. But how we do the dose conversion factors is going to change, and it's -- we're basically rolling in TIB-0010 into that methodology, so it will really be organ-specific geometry correction factors instead of the large area that we had done before that resulted in that 95th percentile.

So the methodology is changing. We're not quite there yet. We're still doing some of that modeling, but we do expect to have it done within the next six months type of time frame. So we're not really -- we've held off on updating TIB-0010 for that reason, because when we get down to it we're going to be doing a very, very, very large PER.

Basically all of the claims that we will have to redo that were non-comped or at least look at because of the changes to the dose conversion factors. We're going from 17 dose conversion, organ dose conversion factors, now I believe it's to 32 for both male and female. So there will be very large differences from that standpoint.

So this is why we've held off on updating TIB-0010. And frankly from my standpoint, I was surprised to see it on the agenda for this discussion. But --

Member Beach: Yeah. So are you saying Tim that it's going to go, you're going to have a 5, TIB Revision 5? So 4 is --

Mr. Taulbee: Absolutely, yes.

Member Beach: Okay, all right.

(Simultaneous speaking.)

Mr. Buchanan: Revision 4 was November 2011.

Ms. Behling: That's what I was going to say, yeah. Rev 4 was 2011.

Member Beach: 2011. Okay. So let's, as Paul suggested, put this in abeyance and we'll just hold off on this, if everybody's in agreement.

Member Ziemer: Or is it the whole thing or just --

Member Beach: The whole, the OCUS-OTIB-0010, yeah. We won't take action on this one.

Mr. Taulbee: I would expect that once we release Rev 5, that that's the version that SC&A should review at that point, and see if these are satisfied, all of them are satisfied in the new revision from that standpoint, because the methodology is going to change quite significantly.

Member Beach: Okay.

Member Ziemer: Wait just a second. Can you back up a couple of slides? Were there some other -- were there some other parts of the old Tim that could just be closed, I mean just to get them off the books? Or is the whole thing?

Ms. Behling: Yeah. What we're trying to do here is to close out I think, although I will say the BRS does allow us to go in and close out finding by finding. So if you only want to keep open Findings 5, 6 and 8, we can do that also. But the BRS allows us to do that, going one by one and --

Member Ziemer: Well, I was just thinking Josie, simply for the record since we don't have the revision (audio interference), is there any reason not to close out the ones that could be closed anyway?

Member Beach: No, no. I agree with that also. So leaving 5, 6 and 8 open.

Member Ziemer: Leaving 5, 6 and 8 in abeyance and they may disappear anyway. But get the other ones

off the books.

Member Beach: Sure, I agree with that.

Ms. Behling: Okay, okay. Yes, we can do that.

Member Beach: Any other objection to that or any objection to that?

Chair Anderson: We'll accept that, yep. Good.

Member Valerio: I have a question. So what's going to stay in abeyance is Findings 5, 6 and 8; is that correct?

Member Beach: Yes.

Member Valerio: All right. I just needed to clarify. Thank you.

Chair Anderson: Okay. OTIB-0023.

Ms. Behling: Okay, and can I move on to OTIB-0023? Yes.

Member Beach: Yes.

Ms. Behling: Okay. OTIB-0023 provides guidance for missed neutron doses based on dosimeter records and whether it's appropriate to assign this dose during the typical N times LOD over 2 method, or an alternative method. It was reviewed by SC&A in June 2006 and presented to the Board previously in July of 2013.

There were eight total findings, and several findings had to do with the clarity and some inconsistent terminology and inconsistency between OTIB-0023 and IG-001. And those inconsistencies and clarity issues were addressed in Rev 1 of OTIB-0023, when Rev 1 was issued.

Our second finding has to do with the detail of information that was available, and initial guidance listed -- in the initial OTIB-0023, the guidance listed two conditions where missed neutron doses should

not be assigned if both those conditions were met.

Condition 1 states that if the N times L over -- L over D divided by 2 is greater than 75 percent of the proton dose and that proton dose includes recorded and missed dose, as well as Condition 2, then missed dose -- neutron dose would not be assigned. That was questioned while we were reviewing this document, and as a result of that in Revision 1 NIOSH eliminated Condition 1. So that resolved this finding.

And reconstruction of missed neutron dose is unrealistic and the neutron to proton assumption of 75 percent of the proton dose was not claimant-favorable. That was another set of findings and again, with the elimination of Condition 1, this finding was resolved.

So that's a summary of our key findings, and as a result of the presentation, the Board did not have any questions associated with the review of OTIB-0023.

Member Beach: Okay.

Chair Anderson: So the committee, so the committee moved to close this?

Ms. Behling: There were no questions, but there was no formal closure at that meeting.

Member Beach: At the full Board meeting; correct?

Ms. Behling: Correct.

Chair Anderson: But your committee did vote to close it, is that right?

Member Beach: Correct.

Chair Anderson: So we can adopt -- the full Board here can adopt your motion to close out OTIBs-0023 review?

Member Beach: Correct.

Chair Anderson: If there are no objections, we will do

so. We'll close it.

Okay. We're getting caught up on a lot of these.

Ms. Behling: Yes. I was assuming maybe there would be questions just based on the details that I had provided and the handout, and I know it was a little tedious probably going through the handout and I apologize. But I did want to make all the Board members aware of all of the specific findings and how they were resolved.

Member Beach: Yeah, and Kathy the handout was not tedious at all. It was exceptional so --

Chair Anderson: No.

Ms. Behling: Thank you, great.

Member Kotelchuck: Right, agreed. Yeah Dave, agreed. It was very helpful, which is why I can go over the slides that you presented, because I have seen the handout. So thank you.

Ms. Behling: Okay, great, thank you. Okay. I'll move on to OTIB-0010 now, and OTIB-0010 is the standard complex-wide correction factor for over-estimating external dose measure using film badges. This assesses the degree of standardization of film badges and develops a method for assigning and over-estimating dose.

This was reviewed by SC&A in January of 2005 and presented to the Board in October of 2013. There were ten total findings and the key findings. First of all, there was guidance -- there was a lack of guidance on assessing missed or zero dosimeter data and uncertainties. That was corrected by adding a Table 2-1 to Rev 01.

Also, there was no guidance on the correction factor when the reported dose is greater than zero but less than LOD, and NIOSH in Rev 1 specified that the LOD value of 40 millirems should be used in those cases. Also, guidance between OTIB-0010 and PROC-006

was inconsistent, and PROC-006 was revised and the inconsistency was corrected in that revision.

Lastly, the correction factor of 2 and the LOD value of 40 millirem is not excessively conservative was our finding, and NIOSH's response was when you apply this correction factor to all reported doses and missed doses respectively, it's sufficiently conservative and that was agreed upon by the Subcommittee.

So for Board questions, the Board members asked whether and why NIOSH was still using an over-estimating approach, because I think it was the ten year review that indicated NIOSH should not be relying on this over-estimating approach as much as they had in the past.

It was stated during that meeting that they rarely used this. However, just due to time and expense associated with doing a more best estimate type of case in some instances, the over-estimating approach is used occasionally. So that satisfied that question.

Also a question was asked, is the 40 millirem LOD value really claimant-favorable, and again NIOSH said that they are using that LOD value typically use LOD over 2 for missed doses and they're using it, the LOD value not the LOD over 2, and also maximizing the amount of zeros. I'll go into that in the last question here.

There was asked in Finding 9, what does that standard correction factor of 2 correct for? The answer was it corrects for the film badge uncertainty for uncertainties. Lastly, there was a question on how a missed dose compared to records with zeros, less than detectable and blank cycle's handled. And again, NIOSH responded by saying they really maximize missed doses.

If they were to have summary data and the -- they would make assumptions about data. That dose all occurred in one badge cycle, and they would treat the rest of the year, the missed doses for calculating all

the other cycles, which is a claimant-favorable assumption.

So that seemed to satisfy the Board and answer their questions, and if we -- if you would like to vote on closing this OTIB.

Chair Anderson: Any, are there any objections to closing OTIB-0010's review? No? If there are no objections, then we will accept the recommendation by the Work Group, the Subcommittee on Procedures to close out the review of OTIB-0010.

Ms. Behling: Okay, thank you. Okay, now we'll move on to PER. This is PER-0012, and this PER is the evaluation of highly insoluble plutonium, which is our type Super S plutonium. OTIB-0049 is the OTIB that provides the correction factor for exposure to Type SS or Type Super S of plutonium, and which increases the internal dose to the group by about a factor of 4.

The issuance of OTIB-0049 prompted PER-0012. The PER, SC&A reviewed the PER in March of 2010, and then we have a Subtask 4 protocol in our procedure that says we also recommend that we look at, we review some of the reworked cases that were impacted by the issuance of PER-0012, and that was done in July of 2012. The review of both the PER and the cases were presented to the Board in October of 2013.

PERs are a little bit different. We have subtasks associated with those, so I'll go through these subtasks. Our first subtask assesses the circumstances that necessitated the PER, and as I previously said, it was the identification, the existence of Type Super S plutonium and issuance of OTIB-0049 to correct for that slowly retained or that highly retained plutonium.

And that, SC&A reviewed OTIB-0049. It also reviewed OCAS-PEP-0012 and PER-012, and I'll just make mention here that in the early days of the program evaluation reviews, they had a program

evaluation plan. And that was eliminated somewhere around 2008 and everything is included now in the PER.

Subtask 2 is the assessment of specific methods for corrective action. If SC&A had not reviewed OTIB-0049 prior to the issuance of PER-0012, that's where under Subtask 2 we would do that. However, we did -- there was a critical review of OTIB-0049 done back in 2007. So there were on findings associated with Subtask 2.

Subtask 3, that's the review of NIOSH's assessment of how many DRs need to be reworked, and in this case NIOSH looked at DRs that were completed on or before February 2007, and that was the issuance of OTIB-0049. That involved facilities where there was exposure to Type Super S plutonium and PoCs that were less than 50 percent.

SC&A agrees that they've captured all of the cases that they need to rework and we had no findings.

Under Subtask 4, SC&A recommends a number of cases that should be reviewed from the population of reworked cases. For this particular OTIB or PER, OTIB-0049 has four target tissues and up to four means of monitoring, monitoring methods that could be looked at.

And so we recommended to the Board to select ten cases, so that we could cover all of the potential options and just because -- due to the pool of data or cases that were out there, the Board selected nine cases that met the criteria that we suggested.

And then finally under our Subtask 4, we actually go in and we reviewed the nine cases that were selected by the Board. But that is, that audit is -- it is a focused review that looks at only the issues that were addressed in PER-012. So namely we assessed whether the internal doses associated with the Type Super S plutonium, were performed accurately and in accordance with OTIB-0049.

And for all nine cases, we had no findings. We concurred with the approach and we found that the methodology was consistent with OTIB-0049. So we go on to questions, and Board members had no questions at the end of that presentation.

Chair Anderson: That was a lot of work.

Member Beach: Thank you Kathy, yes. Chair Anderson: A great deal of work, and that's why there were no questions. Well done. Oh my. So and I assume the committee, I see they move to close this --

Member Beach: Correct.

Chair Anderson: --PER-012 out, and so if there are no objections, the full Board will accept the committee's, Subcommittee's recommendation to close out PER-012.

Ms. Behling: Okay. Hearing no objections, I'll move on. Okay. This is an overarching issue. It was named Overarching No. 9, and it has to do with skin exposure. What this overarching issue addresses was SC&A's concern about modeling of fine and large particle deposition on the skin, hot particles.

It was presented to the Board in April of 2018. I view the overarching issues we identify them as concerns as opposed to findings, and in Concern 1, NIOSH derived a dose of 16 millirem per year to the bare skin. SC&A felt that that was based on unsupported and unrealistic assumptions, and those assumptions included that the skin contamination persisted for only eight hours, and that at the end of eight hours 100 percent of the contamination would be removed by a shower, and that only bare skin was subject to the contamination exposure.

The resolution to this concern, NIOSH discussed its approach of addressing fine particles to the satisfaction of SC&A. However, there were still some lingering questions about whether the uranium could be removed with these from skin and clothing. So

subsequently NIOSH presented findings of the research that they did on the quantitative and qualitative removal of uranium with soap and water. That resolved our concerns with, our first concern.

Concern No. 2, how does IREP use the dose to calculate the PoC, given that hot particle is a very small area on the skin? How does that get interpreted into a whole body dose? NIOSH explained that, explained that relationship and also indicated that there is specific guidance in OTIB-0017 for non-uniform skin exposure.

They went on to say that they consulted with SENES just to confirm that the guidance and the correction factors are, I should say the log-normal distributions that were introduced into OTIB-0017, which is designed to cover this topic, that they weren't, that that guidance was claimant-favorable.

Okay, and Concern 3 is same basic question, but rather than small particles we asked the same question about large uranium flakes, and again same resolution, that the information was provided into protocols described in OTIB-0017.

Okay, and now here are four questions after that presentation. The first question was do we know that the workers do take a daily shower, you know, after their shift, their work shifts? NIOSH said that they didn't really look into that aspect, but they do know that a lot of the facilities, especially at the -- where they did rolling operations, that that was -- showering was required. So that question wasn't fully answered.

The second question, how is the averaging of small versus large particle versus whole body being addressed by IREP? NIOSH again pointed to OTIB-0017, where there's been a log-normal distribution to account for various scenarios, small particles and larger particles that could have contaminated the skin.

And another question, the Board members say that

okay, we know that there's skin contamination on bare skin and -- but we don't know where the contamination occurred. Now we're taking a bare skin estimate and averaging it over the entire body. Is that claimant-favorable?

NIOSH's response was that to account for the unknown nature of where the contamination occurred, there were various log-normal distributions developed for different size particles.

As a result, the Board members felt that they didn't have all their questions answered satisfactorily, and so they postponed action on the review of the Overarching 9 issues, and they did ask NIOSH to come back at a future meeting and provide more information.

So at the next full Board meeting in August of 2018, NIOSH made a presentation and that presentation indicated that okay, we know that there's a hot particle. We're going to assume there is a hot particle deposit on a worker's skin that was never measured and now you have a skin contamination.

When you look at that data, it falls into the realm of a binomial distribution. Since IREP does not have a binomial distribution, the SENES had developed a claimant-favorable log-normal approximation of that distribution, which was incorporated into OTIB-0017 as previously discussed in the concerns.

They didn't, NIOSH did mention that SENES is in the process of producing a binomial distribution test model for IREP, to determine if the log-normal distributions are truly claimant-favorable. So the proposed resolution was that NIOSH is -- was in the process of revising OTIB-0017, and the Designated Federal Official joined that meeting, did ask SC&A to do a focused review of the OTIB when it was revised.

However, as I was going through this presentation, the OTIB-0017 has not been revised from Rev 1 since 2005. So there you have it, and I don't know how you would like to proceed here. But all of -- all of the

concerns for the overarching issues really hinged on the revision to OTIB-0017, which has not happened yet.

Member Beach: So I guess we need to hear from NIOSH, if NIOSH has an idea of when OTIB-0017 is in the review process.

Mr. Taulbee: Yes, we do. We have been working on this for quite a while, and it has taken us much longer than what we anticipated to get this document revised. It is currently nearing the completion and it's in the internal review and comment resolution phase with -- between us and ORAU, and the expected release of this is December of this year.

Member Beach: Okay. So thank for that Tim, and I would recommend that we again put this into abeyance until OTIB-0017 is reviewed. Is that agreeable with the Subcommittee?

Member Ziemer: I have one question on that. Abeyance usually means we've resolved the issues and we're just waiting for the new document to come out.

Member Beach: Oh okay.

Member Ziemer: Are the issues really resolved on this, or is it really in process? It's not clear to me on that one Josie. What's your thought on that?

Chair Anderson: It seems to be more of a deferred.

Member Beach: Yeah. I don't think that -- I don't think they've been answered. Kathy, would you agree with that?

Ms. Behling: Yes, I would.

Member Beach: Okay. So then it wouldn't be in abeyance. It would be --

Member Ziemer: It would still be in process then, right?

(Simultaneous speaking.)

Ms. Behling: In progress.

Member Beach: Okay, okay.

Ms. Behling: All right, we'll do that.

Chair Anderson: So we don't need a motion on it?

Member Ziemer: I don't think we do. I think --

(Simultaneous speaking.)

Member Ziemer: This becomes just a piece of information, right?

Chair Anderson: Yeah. Well of this linkage between the various OTIBs is challenging, so we need to crack that. When 17 comes out, we have to see what impact it has on 9.

Member Ziemer: Well I think conceptually this is a really tough one. I'm interested to see how, what NIOSH recommends on it because it's -- there's some issues that I think will arise regardless of how we attempt this. But anyway, I'm looking forward to the response.

Chair Anderson: Just a question to NIOSH. Do the claims have site-specific data on where the cancer occurred, skin cancer?

Mr. Taulbee: In many cases we do. We get that from the Department of Labor with the medical records of where the skin cancer occurred. At some sites, we actually get information on skin contaminations, where the contamination occurred. But not always. In AWE sites, it's actually very difficult and we generally don't have that. But at some of the larger sites, we do have that information.

Chair Anderson: Okay, thank you.

Member Schofield: Hey Tim, this is Phil. I've got a quick question. When they're planning on using this

for whoever's doing the dose reconstruction, which and how are they going to determine which log-normal distribution to use?

Mr. Taulbee: Well that's in the guidance of the document that's being revised here. So I guess I would like to defer the answer to your question until you see the new guidance that's coming out, and address it at that point. Is that okay sir?

Member Ziemer: That's fine, thank you.

Chair Anderson: Okay. Moving on.

Ms. Behling: Okay. This is our last one, and I don't know how relevant this is going to be at this point in time, but this is actually our review of OTIB-0017. I will go through it, just so that you have an understanding of what our -- what the concerns were and what your questions were, because it goes beyond what was introduced in the overarching issue.

Again, the OTIB-0017 is our shallow dose OTIB interpretation of, you know, dosimetry data for assigning shallow doses and it provides guidance for assigning shallow doses to the skin, testes and breast for non-penetrating radiation.

SC&A reviewed this way back in June 2006 and it was presented to the Board in April of 2018. There were a total of 15 findings and several findings had to do with the clothing-specific attenuation factors should there be different various clothing-specific attenuation factors used.

The response was that the OTIB allows dose reconstructors to choose on the clothing attenuation factor based on whether it's a minimizing, maximizing or best estimate case. Also there were several findings. Again, this is regarding the direct deposition of hot particles on the worker's skin that are not detected, and this is what prompted the Overarching 9 that we just discussed.

There was questions as to whether four millimeter clothing thickness is, is not claimant-favorable, and NIOSH responded that four millimeters assumptions for pants and undergarments and not lab coats. The correction factor cited in Attachment A are not claimant-favorable when the source is near the testes, and the film badge would not measure them as the film badges on the lapel.

NIOSH responded that based on the quality assurance and training and a lot of guidance documents and site-specific documents, that it is (audio interference) correctly by the dose reconstruction, dose reconstructors.

We also mentioned that the OTIB is not claimant-favorable in instances of unknown factors, and NIOSH responded that it is claimant-favorable due to its recommendations for DCFs, LOD, attenuation and radiation type and energy, which should cover unknown factors.

Okay. There was a Finding 12. Again that -- oh this is questions, questions from the Board. The question was with regard to Finding 12 where -- and Finding 12 had to do with there was an agreement that there would be an update on the logical order of the general approach section. The Board member commented that everyone's agreed on this; however, the document is still in abeyance or these issues are still in abeyance because the document hasn't been revised since 2007.

There was a question as to when they thought the OTIB would be revised. At the time, NIOSH thought they were going to have that revision done fairly quickly.

The Board also asked about Finding 7 and the four millimeter assumptions for the clothing. There was a discussion on undergarments are designed to breathe and cannot be considered impermeable, and there was a question as to whether that assumption is implicit in the four millimeters.

NIOSH responded that they did not know the answer to that question, and that additional research would be necessary. So as with the OTIB or the Overarching 9, the Board decided to postpone action on OTIB-0017, and asked for clarification at a future meeting. Again, NIOSH did present information on Finding 7 at the August 2018 meeting, and NIOSH went in and assessed, reassessed attenuation of three different set of clothing. Using the mean value of the new measurements, NIOSH got similar results for strontium-90 and yttrium-91.

However, they determined that for the rhodium and ruthenium, the correction factor differed by a little more than a factor of 2, .5 versus .2. They said that this would all be resolved and the resolution would be a revision to OTIB-0017. As we previously stated, OTIB-0017 has not been resolved yet.

There was a follow-up question by a Board member, who said that their initial question really did not have to do with the thickness of the garment but permeability of the undergarment. NIOSH responded that again, they would take this up and introduce appropriate terminology and discussion in the revised OTIB-0017.

And that, as we just discussed, OTIB-0017 is still in the process of being revised.

Member Beach: Okay, and we should see that in December; correct Tim?

Mr. Taulbee: That is the current schedule according to our project plan.

Member Beach: Okay.

Chair Anderson: Tim, I mean and just in this set here there were quite a number of issues that were pointed to would be addressed in OTIB-0017. Tim, do you have a listing of those for tracking so we don't end up with sending this back to the committee? There's so many of these that are going to be handled on all the different issues, that the likelihood of you

missing one if you don't have a good tracking system is pretty, pretty high.

Mr. Taulbee: Well I think SC&A has done a very good job of listing them for us here.

Chair Anderson: Yeah.

Mr. Taulbee: And we will make sure that they are all addressed, that we haven't missed any. This is part of what has taken so long in getting this revised, is going through and doing the research and resolving many of these issues.

Chair Anderson: 2005 is a long time ago, right?

Mr. Taulbee: Yes, it is.

Member Beach: Yeah, and Henry this will still go back to the Subcommittee. We'll have to review. SC&A, we'll have to assign SC&A to review and then make sure everything was captured so --

Chair Anderson: Yeah. Since this is the last one, I mean now it's continuing. But what is the next steps for your Subcommittee?

Member Beach: Well, we had hoped to have a Subcommittee meeting so we could go through these. I was going to pose that question myself. So should we go ahead and formally close out the ones, and vote on the ones that we discussed here, and then move on to talk about what our next steps are? Would that be okay?

Chair Anderson: I would think so, yeah.

Member Beach: Do you want to list them Andy, or do I need to?

Chair Anderson: If you can do it, I think and yeah. Well or I guess since you, the committee and we went through them kind of one at a time, approved or closed them out, I think we can just simply say we -- if there aren't any further objections, we can accept your recommendations for the set of reviews that you

did, with the exception of those that were held open.

Member Beach: Okay. So we held open -- at the beginning Kathy talked about 052, 014 and 20 which she did not present on, and we held -- we held open OCAS-TIB-0010 and NIOSH Overarching 009. 17 wasn't on the list, but it is -- it is in our grand scheme of things.

So closing out OTIB-0070, IG-001. Closing out on TIB-0010 1, 2, 3, 4, 7 and 9, leaving open 5, 6 and 8, and then closing OTIB-0023, OTIB-0010, PER-012. I think that captured all of them.

Chair Anderson: Good. Any disagreement with that?

Member Ziemer: A question before you take your final vote. On this last one, I didn't hear anything on Finding 1 and 6.

Member Beach: Are you talking about on 17?

Member Ziemer: Yeah. We talked about 2 through 5 and 7 through whatever it was. What's the status of 1 and 6? I didn't have a chance to look that up.

Member Beach: So the Subcommittee closed those two items --

Member Ziemer: That's what I was wondering. Those are already closed?

Member Beach: Kathy -- yeah. Kathy did we --

(Simultaneous speaking.)

Member Ziemer: If they are, we need to --

Member Beach: Are those items that we can close here or would we rather wait until we review the final procedure?

Ms. Behling: I'm sorry. Are you asking me this question?

Member Beach: Yeah. So as Paul brought up, Questions 1 and 2. On your list, we actually closed

those within the Subcommittee, 1, 2, 3. But I don't know if the Board (audio interference).

Member Ziemer: The slides showing 2 through 5 and then 7 through, let's see. Anyway.

Member Beach: Yeah. Well, I'm looking at the main body and that shows all of them so --

Member Ziemer: Oh okay.

Member Beach: Kathy, are you --

Ms. Behling: Yes. I just summarized some findings. I should have put down 1 through 5, because I didn't specifically call out Finding 1. It was sort of embedded in some of the other findings here.

Member Beach: Yeah.

Ms. Behling: But this all should be included in my summary.

Member Ziemer: So that would be --

(Simultaneous speaking.)

Member Beach: Okay. I would recommend that we leave the whole thing open because of the complexity of it.

Chair Anderson: That seems reasonable, yeah.

Member Kotelchuck: Just a -- Kathy?

Member Beach: Dave?

Chair Anderson: Go ahead Dave.

Member Kotelchuck: Kathy, just a mini-typo, but it's worth mentioning.

Ms. Behling: Okay.

Member Kotelchuck: On Slide 39, you want the underpants design to breathe not to breath. So I just thought --

Member Beach: Good catch. Thank you for that correction.

Ms. Behling: Yes.

Member Kotelchuck: I don't want any breath on any.

Chair Anderson: Spellcheck won't catch that.

(Simultaneous speaking.)

Member Kotelchuck: I know it won't because they're both good English, at least for meaning however.

Ms. Behling: At least it induced a little bit of laughter.

Member Beach: Yes.

Member Kotelchuck: Yeah, exactly --

(Simultaneous speaking.)

Member Beach: Okay. I think we can take a vote Andy, if everybody's ready, unless there's some objections.

Chair Anderson: No. Let's take a vote. Rashaun, do you want to go through individual votes to accept or do we want to just use the other of hearing no objections?

Dr. Roberts: Well in my reading of transcripts of how this has been done in the past, I think it's been the, you know, verbal agreement, you know. All in agreement aye; all opposed. So that's how I've read it.

Chair Anderson: Okay.

Member Kotelchuck: All right.

Chair Anderson: So --

Member Clawson: But that was also when we were all sitting at the (audio interference) there.

Chair Anderson: Yeah. I mean it's hard to -- I mean

it's easier to say does anybody object, and if there are no objections, then we can say it was unanimously accepted by the Board.

Member Kotelchuck: Yeah.

Member Beach: Correct.

Chair Anderson: Rather than a cacophony of voices saying "aye," drowning out a one nay. So all in favor or all opposed say --

(Chorus of aye.)

Chair Anderson: Okay. So there's no opposed. So the Board adopts the recommendation as you stated to close out and keep others open.

Member Beach: Okay, thank you, and so your other question was moving forward, and I would recommend -- I don't believe we can have a Subcommittee meeting until we have access to the web or to the O drive; is that correct?

Ms. Behling: I don't know who you're expecting to --

Member Beach: I expect Rashaun. I guess I'm asking Rashaun.

Ms. Behling: If I could just interject something here.

Member Beach: Yes, go ahead.

Ms. Behling: What I can tell you is that there was a lot of tasking that was done during the previous Procedures meeting, and SC&A has completed a number of those. We were able to get the data that we needed so that we actually could go through some of the OTIBs and various things to do our view.

So we are in a position now, we are ready to make those presentations to the Board if that is something that we can do without having access to information on -- we won't have access to the BRS, but we could still make the presentation to the Subcommittee.

Member Beach: Subcommittee. I was going to ask you that, because I realize I've been seeing several of them drop into my inbox. So a couple of things moving forward then. Rashaun, if you could send out a notification for a Subcommittee meeting. I think the Subcommittee can talk about moving forward.

One thing I would suggest Kathy is if you can update that the list that you sent us that had all the documents that need to be closed out officially, if you could just keep that updated, kind of make it a living, breathing document as we move forward through these.

Ms. Behling: Okay, yes.

Member Beach: If that makes sense to other Subcommittee members.

Chair Anderson: And how are you selecting which ones to review next?

Member Beach: I kind of think that would be -- we should talk about that in the Subcommittee.

Chair Anderson: Okay. Well as I'm just asking because going from there to then tasking to getting reports, I think it's good to get this whole bunch here voted away.

I think that, you know it's -- I just don't have a good sense of what do you have on your plate. What are the ones that seem to be most pressing or are you just going through them in numerical order?

Member Beach: Well this lists -- Kathy, I don't think we approved where to start or other than the first two that we did at the last Board meeting. But I believe Kathy you just chose these ones? Was there a method to your choosing?

Ms. Behling: I presented these today because these, except for OTIB-0052, PER-0014 and OTIB-0020, just because these were the ones that had previously been presented to the Board. So I felt that we could

start with these.

Now if we, as we move forward, as I said I do think there needs to be a separate presentation on the OTIB-0052. That's construction trade workers. PER-0014, which is the PER, so associated with the construction trade workers, and OTIB-0020, which is (audio interference) co-exposure.

That should be a separate presentation from my perspective, and then when we move forward, I believe you all adopted the matrix approach. And so I will go into that 31 list of procedures that have been finalized by the Subcommittee, and put together the matrix and submit that to the Board, and then make presentations on that.

That would be a new presentation, new presentation material, things that you have not seen or talked about before.

Member Beach: Okay. So is it your recommendation then to do the three you mentioned next, the 52, 14 and 20 as a -- those three in the next presentation grouping?

Ms. Behling: Yes, yes.

Member Beach: So we could look forward to that at our April meeting?

Ms. Behling: Or December.

Member Beach: Or excuse me December. I'm forgetting December, yeah. So just at the December meeting, correct. Thank you.

Ms. Behling: Yes.

(Simultaneous speaking.)

Chair Anderson: Have these been looked at by your committee, or are they going to go to present to the whole Board?

Ms. Behling: You know, as I went through the

transcripts, these were the most difficult because it seemed to me that although it was discussed at the Subcommittee meetings back at that time, sometimes the BRS wasn't updated as completely and with as much detail.

And it seemed to me that there were some issues that weren't completely resolved at the Subcommittee level. So during the next Subcommittee meeting, which I assume will be before the December Board meeting, I think we need to have a discussion on that.

If we don't feel we're prepared to present this to the full Board, we'll just go into other procedures that have been closed out by the Subcommittee and we'll start working on the matrix for those. Does that sound reasonable?

Member Beach: In my mind, yes it does.

Chair Anderson: Yeah, yeah, yeah. And the other would be to ask, as we've heard NIOSH is working at 17, 017, are there other OTIBs that are under review by NIOSH? I don't think it makes too much sense for the committee and for SC&A to do a lot of work on one that is going to be shortly revised and may address the issues.

Seems to me it's taken a long time to do some of these, and I think the more we can try to streamline it and make it as effective as possible, it's important.

Member Beach: Correct. I do like this approach though, that these are the ones that had come before the Board, and yes there's a couple of them we couldn't close out. But it brings the attention back to them and so we can move forward with them.

Chair Anderson: Yes. No, I mean we got to get caught up and then it's moving forward from there.

Member Beach: Yes.

Chair Anderson: What's the process of the selection?

I mean there's a lot of these that haven't been looked at.

Member Beach: Correct, and some less complicated. I'm sure that will --

(Simultaneous speaking.)

Chair Anderson: Yes, right, correct.

Member Beach: --go through quickly.

Chair Anderson: Okay. Are there any other questions or issues Josie you want to raise, or others?

Member Beach: Just to reinstate to set out, because I know we need a couple of months in advance to maybe get the dates moving forward as soon as possible Rashaun.

Dr. Roberts: Yes, and that's what I -- so it sounds like we want to move forward with the Subcommittee meeting prior to the December meeting, which doesn't give us a lot of time, you know, given that we --

Member Beach: Yes, and with as much leeway before that meeting as possible.

Dr. Roberts: Right, yeah. So we're going to have to relatively quickly get on organizing for that meeting.

Chair Anderson: Get the agenda for it?

Dr. Roberts: Yes, exactly, and get it scheduled.

Chair Anderson: Pick a date and then see what you need.

Dr. Roberts: Yeah. It can be done, but it's going to be tight.

Chair Anderson: Yeah. Okay. I think we've -- we've just about reached break time, so unless there's other issues people want to raise on these or other questions?

Let's see. We're a little bit behind so --

Dr. Roberts: How much time do you want to give, Andy?

Chair Anderson: Do we want -- how much, 15 minutes? Is that okay for people?

Member Beach: Yes.

Dr. Roberts: Okay. So we'll come back -- I'll take role at about 3:30.

Member Ziemer: Actually it looks like we're ahead aren't we?

Dr. Roberts: Yeah, we are ahead. We could go with --

(Simultaneous speaking.)

Member Ziemer: We're not behind.

Dr. Roberts: Yeah.

Member Ziemer: I think we're 15 minutes ahead.

Dr. Roberts: We are, that's correct.

Chair Anderson: Right. I'm sorry, yeah.

Dr. Roberts: So do you want to do a longer break and then come back when the work session is scheduled to begin?

Member Beach: Yes.

Chair Anderson: Okay, sure.

Dr. Roberts: Okay, and I will take roll at that time.

Member Kotelchuck: Okay.

Dr. Roberts: Great, thanks.

Member Kotelchuck: Four o'clock.

Chair Anderson: Four o'clock.

Dr. Roberts: Four o'clock.

Chair Anderson: So you get 45 minutes. Don't forget to come back.

Member Kotelchuck: Not to worry.

Chair Anderson: Okay.

Member Kotelchuck: See you later.

(Whereupon, the above-entitled matter went off the record at 3:17 p.m. and resumed at 4:00 p.m.)

Dr. Roberts: Okay. I have four o'clock exactly, and it appears that the court reporter is on. Let me go ahead and do roll call, starting with Anderson.

(Roll call.)

Dr. Roberts: I have a feeling Loretta might have been trying to speak, but I didn't hear her. At any rate, we do have enough to proceed.

Chair Anderson: Okay, then I'll call the meeting back to order.

Dr. Roberts: Okay, great.

Board Work Session

Chair Anderson: The rest of this afternoon, we're going to be doing the Board Work Session, and we want to begin it with -- at the SEC issues and Savannah River Work Group meeting, the use of the NOCTS database came up for coworker models and other uses.

And so what we, Rashaun and I thought it would be a good idea to go back over when it has been used and how has it been evolving, and we charged SC&A to put a quick review together.

Bob is going to go through that, and then we can have a discussion about do we need to do anything further? Do we have questions specifically moving

forward? Do we want to have a -- assign this to one of the Work Groups to work on, or just think about for future discussion? So Bob, you want to go through?

Mr. Barton: Okay. Let me just get myself off of mute here. Thank you for that intro. Let me just get this back up here, so hopefully it appears on your screen as it appears on mine.

Chair Anderson: Yep.

Mr. Barton: Yeah, thank you. This question did come up. Obviously, there's been a lot of discussion about co-exposure modeling for quite some time now.

And specifically questions arose about the use of NOCTS, which is the claimant, claimant sample essentially from all these different sites and how it applies, and can it be substituted for actually going in and capturing and coding all the data that would be available at the site, which oftentimes can be difficult to do and we'll get into that.

So there are closing columns obviously and basically this is -- it wasn't a full Board item. It's here during a Board Work Session really I think to get you all thinking about it, because it is a tough issue. It's really a policy discussion in my mind, and so this is -- what we tried to do here is summarize some of the more poignant reports over the years that either tangentially address this item or directly address it.

So then we looked through those and then some of the discussions that have happened certainly more recently about it, so that we can get you folks thinking about it and we'll figure out where to go from there. So not to bury the lead, but that is our (audio interference).

There's some interesting -- how appropriate is the use of NOCTS as the primary data source when we go to formulate co-exposure models? Of course co-exposure models are in place for workers who we don't have monitoring records for, which could be for

a variety of reasons. Either they weren't monitored up to the standard that we consider in present day and they should have been, or it may have been monitored but for whatever reason those records are not available, got lost or illegible, that sort of thing.

So there's a lot of applications there, especially in SEC contracts. Now when we started to really dig into this, I mean the discussions by the Board and its various Work Groups, they go back more than -- it says back over a decade here.

Really they've been there since the start, but I think really in 2009 is really when the Board reached the issue of how you assign dose to an unmonitored worker, how you relate the exposure records we do have for monitored workers to somebody who should have been monitored. But again like I said, we just don't have those records to use for dose reconstruction.

So we were tasked at SC&A to go through a lot of these transcripts and really summarize a lot of the relevant documents that have already been produced relevant to this issue. So if you like reading transcripts, this was a great task.

Next slide. All right. These are really the screen name reports that we think really speak to this issue as a whole. You have OTIB-0075 and I'll -- we just finished a discussion where there's a lot of OTIB numbers and it's tough to keep them all straight. But this one, it's really in the title.

It's Using Claimant Data Sets for Coworker Modeling, and this was first released again back in 2009, so over a decade ago and revised in 2016. It has been the subject of a lot of discussions, especially among the Savannah River Work Group and then the SEC Issues Work Group, and then the Joint SRS and SEC Issues Work Group more recently.

The second one here is an actual really like a pilot study for co-exposure modeling, and actually it develops the guidelines, which is IG-006, which we'll

talk about a little bit.

But again this was -- TIB-0081 was really the first, the test drive to see how all these different concepts that we talked about in the Implementation Guides for co-exposure modeling such as representation, completeness, adequacy, stratification. All those different things sort of came to fruition, where we can actually see it in practice.

And then Report 94 was in support of the Savannah River Site SEC discussions, which really looked into the NOCTS data that we had for subcontractors, which I'm sure you all remember was a big topic of discussion back in April.

So the first of those big three, again TIB-0075. Again this was the -- essentially the technical basis for why it's believed that claimant data is an acceptable substitution. Maybe that's not the right word. I know surrogate's not the right word either.

But the use of claimant data to represent the full worker population as really a mechanism to increase the efficiency and the timeliness of being able to do these co-exposure evaluations.

So TIB-0075 was initially issued back in 2009, and then revised many years later to add in additional data that had been received, (audio interference) received in particular and we're going to get into that.

But also the concept of the time-related one person one sample, which is a way to take a huge amount of data and be able to put it into essentially statistic for each worker by a specified time frame such as one year, and being able to weight it.

So that if you had many samples for a worker during a given year, so that you weren't giving undue weight to any particular sample. So what was analyzed in those, in the OTIB-0075 was three separate data sets where we had essentially adequate database files, where we can look at the full worker population and then also pull out just the claimant sample.

Let's compare the two statistically and we'll see how they shake out. Is there anything that gives us concern that, you know, the claimant population did not represent a representative sample of the full worker population, which is obviously the main question here.

If we're going to be using just claimant, claimant data to develop these co-exposure models, we want to make sure that the claimant data really represents what we would have found if we had gone back and pulled all the records available for the full worker populations.

And so that report, TIB-0075, again this really kind of gets to the root of this entire question. We only looked at three different data sets. You had 112, which was uranium urinalysis from 1950 all the way through 1988. Also plutonium urinalysis that we had at Mound for 1960 through 1990, and then tritium at Savannah River in the 1990's.

And so that report really went out in (audio interference). Can we see anything statistically different between the claimant population and the full database, which we luckily had available for analysis.

So our review of TIB-0075 was really focused on two issues. The first one is obviously the most cogent for today's discussion, is whether we can ever prove that NOCTS data is going to be representative of the full worker data if we had it. And also there's a big focus again on Savannah River at that time, because that was really the vehicle to really test a lot of these concepts that were being discussed about how you go about developing a co-exposure model for the workers who we don't have records for, again for whatever reason.

So what did we find? Well, when SC&A looked at that both back in the 2010 time frame and then when the revision came out five or six years later, we found that in those three cases yeah, it is statistically similar at these aggregate levels. The claimant records are statistically similar to the full worker

population.

So essentially, you know, one can argue that they are adequate for use in developing co-exposure estimates, where you don't have necessarily easy access to the full worker population. But it was only three examples, and that was sort of the caveat. We said yeah, in these three instances then yeah, we agree you're statistically similar.

But again we just, you know, wanted to point out that it is just those three examples that we looked at.

So the second document that I listed there was -- I'm sorry. My house sometimes sounds like a kennel. The OTIB-0081. Again, this is the test drive of how we're going to go about using these guidelines we created for how you go about evaluating representation and completeness and data adequacy.

That was for Savannah, and so OTIB-0081 does that. It provides the co-exposure estimates for, on monitored workers at SRS that we used in dose reconstruction.

This is really the first use, as I said you know, based on TIB-0075, which did the comparison between the claimant population and the full worker population. We're going to use, we're going to use NOCTS' data for Savannah River to develop at least a few of the facets of the co-exposure model.

Now the exceptions were for trivalent actinides, which includes thorium and also neptunium where we just didn't have enough. There was not enough data in the claimant population. So NIOSH went back and coded data from capture log book files, which are essentially hard copy records that have to be entered into an electronic database and go through the appropriate quality assurance criteria, you know, the whole nine yards.

But for the other ones like plutonium and uranium fission products and tritium, we just used the -- or TIB-0081 rather used just the claimant data, not the

full site data. Now we did review, SC&A reviewed TIB-0081, but really at that time the question whether using solely NOCTS data instead of going and capturing and coding the full site population was really beyond our tasking.

So it essentially was not addressed in that review, and that's really why we're talking about it today.

The third report here was 94, which again was developed as part of the SEC discussion for SRS, and this was to take a look at the NOCTS data and answer the question or provide an analysis to look at whether the subcontractor population, subcontractor construction trade workers, were adequately monitored and were those records complete for the purposes of the SEC discussion.

From that report, NIOSH concluded that the subcontractors were monitored and they were represented at least as well as the other SRS workers.

And so that the completeness of the subcontractor data was going to be adequate for dose reconstruction. When we say that, what was really sought after was to say is this data adequate for developing the co-exposure model to handle unmonitored subcontract workers (audio interference).

The co-exposure model was developed for really two stratified groups. One was the, essentially the full operational workers and then the second one was construction workers. That was really the question that Report 94 was developed to address.

In our review of that document, we found that one of the issues was that it sort of homogenized all internal monitoring into one metric, and we're really asking the question well, they were monitored internally but you know, for what? And were they monitored for the correct things?

You know, in some cases especially at a site like

Savannah River, you're going to have the smaller operations involving exotic radionuclides such as like americium and things like, of that nature. But you have to have a huge percentage of the population that's monitored for it but what, you know, percentage of the population who should have been monitored for it really were?

So that was one of the things that it didn't quite break out in that iteration of Report 94. But then furthermore, we found that it didn't substantiate the actual question of representativeness of the claimant data as compared to the overall site population. It wasn't what it set out to do. The purpose of the report was really to take a look at hey, what do we have in NOCTS data and what does it tell us about these important questions?

I think from SC&A's standpoint, we feel like that the concepts of representation really should closely align with what we see in the co-exposure guidelines that we developed in IG-006, and that were approved by the Board in 2019. I believe it was December 2019, and that's are these co-exposures that we're developing, these models that are based on monitored workers, are they developed from workers with comparable activities and relationships in the radiation environment?

And that really, that comes almost directly out of the guidelines. If it's not a direct quote, it's very close. And also representative of the distribution of exposures for the population we're really trying to reconstruct doses for, or provides a plausible upper bound for those workers.

So some specific discussions. Again, part of this -- part of this presentation and the memorandum, which I should have mentioned at the outset, that's on the website for you all to peruse, was to look at some of the discussions that have happened either in Work Groups, in the full Board subcommittees about the application of NOCTS for developing these co-exposures.

As I said previously, you know, as was shown in the Report 94 analysis, that there was a pretty high percentage of the subcontractors in NOCTS who had internal monitoring data. However, we're asking the question well again, monitored for what? Were they monitored for the correct radionuclide based on their job-specific work tasks? How complete was that specific to SRS, where they had a job-specific monitoring program, that if you weren't on a routine program, you're supposed to be on a job-specific program and how complete was that, how effective was that. That was a lot of questions that were discussed.

But again, these are pretty recent. This is 2019 to 2020. In 2019, actually knowledge that, you know, you can look at NOCTS. But at some point the completeness based on that has to be inferred. You don't have the full suite of data that you might have if you went and captured everything that is available for these various sites.

And now this third bullet is very important, because this really gets to the matter of well, we might be losing some information if we're not capturing, encoding and analyzing all of the data for a site. But certainly using what is in the house for NIOSH, which is going to be the claimant population, the NOCTS-based data, certainly has the advantage. It's simpler, it's more timely and it's much more efficient.

But the question before you all today and moving forward, and again this is sort of a kickoff meeting just to get you all thinking about this, does that really meet the intent of what was outlined in IG-006, which was basically the road map that was created over a decade of discussions on how we go about dealing with the unmonitored worker.

So again, a little bit more about some of the general discussions that have taken place. There's a lot of references to transcripts in here. I encourage you all if, you know, to go look at those discussions. They're really fascinating to look back at how far we've come

in developing a lot of these things.

There's going to be a bunch of slides at the end of this presentation that give you direct links to these transcripts, so you can go and read through what everybody said. I will admit that going through them myself, I was a little embarrassed about some of the things I said and the way I said them, but it is what it is. I think the point got across. But what -- some of the particularly poignant observations made in this one is particularly from 2019, is that the worker, you know, there was no literature that really just linked people who had developed illnesses, in this case obviously radiogenic cancers and other cancers, as actually being representative of larger populations.

So we just didn't have necessarily the body of work to make that technical basis judgment. And also noted during that meeting, and again you can go back to the transcripts, is the co-exposure Implementation Guidelines. They prescribe that as representation of the overall workforce, just a subset of that workforce.

Now again from this transcript at about the same spot, it was pointed out that in the claimant population there are people who have developed illnesses and they've been harmed. So, you know, is it -- is it really a question of it being representative or they might even -- the population of claimants may even be biased higher. That point was put forth, and similar type discussions occurred at some of the later meetings and I note them here. But really the issue is just never quite resolved.

So what is actually in the Implementation Guidelines? The Implementation Guide says that user friendly data is a useful starting point. So you can look at the distribution of who was monitored, when were they monitored? Are there noticeable gaps? Also the Implementation Guide says that you can use NOCTS to verify the completeness of if you already have a site-specific data set.

So basically you can use the claimant population to

verify the completeness of a larger data set you have for the full worker population. And so we believe that, really that the intent as written in the Implementation Guide as it stands is that NOCTS is really used as a backup to validate or check did you -- did they monitor the right people, the right job categories, the right locations, the right time periods?

But it, as it currently stands, doesn't provide guidance or indication that you can simply use NOCTS as a substitute for site-specific data sets when you're trying to go in and develop these co-exposure models.

So just to sort of sum things up here, we absolutely agree that NOCTS has a lot of great features that allow us to do these evaluations in an SEC context, in establishing whether if you have a site-specific database how complete is it or are you seeing gaps in what is being provided by the site.

But what we didn't see is anywhere where the Board really voted or gave their blessing that you could essentially substitute NOCTS data in lieu of actually going and capturing what available records there are for full monitored population. But again, one thing that the -- the counterbalance here is that it does take a lot of time, a lot of effort and a lot of (audio interference) to go in and do that kind of work.

Because a lot of times, you might be able to get an electronic database from a site, and a lot of times we won't. What you're left with is boxes of records that then have to be entered into a suitable database that NIOSH can then analyze to create their co-exposure distributions. So it's a process, it's a process, and the question again I'd like to reiterate is that is the information that we're potentially losing by not going through that process of actually capturing the full suite of monitoring records for a given site, is that outweighed by the essentially what is a lot more efficient?

The question is can we consider the claimant population as basically a random sample? Because if

not, it's a semi-random sample of the workforce, and is it -- is it close enough that we can use it without running against a lot of the policies that were set out in the Implementation Guide.

I think this last bullet here is that, you know, the real question is can we ever really know if the claimant population is representative of the full population? Right now we have those three examples I talked about that were in OTIB-0075, in which SC&A agrees with NIOSH. Statistically, they're very similar.

But the question is can we use that as the technical basis to say, basically create a universal programmatic assumption that the claimant population represents the full population when we go to make these co-exposure models. I think that was my last slide, and I have a question slide here.

Also, I was given the honor of giving this presentation today, but I know Joe Fitzgerald and Ron Buchanan are also online, and they've been at the center of a lot of these SEC and co-exposure model discussions. So I guess before turning it over to questions, Joe or Ron? If you're out there, do you want to add anything that I missed or perhaps bungled a little bit, you know? Come on in.

Mr. Buchanan: No, I don't have any extra.

Mr. Barton: Okay. Then I guess on to questions.

Chair Anderson: I guess Bob a question, and one question I'd have. Where this came up was with SRS, which is a very complicated site, very large site with a great deal of data. The question then becomes is that unique? I mean is this, the use of the data at a Hanford, which is another big site, or some of the other very large sites, is there a certain size of the database or the NOCTS amount of data that's come in over what period of time and what kind of malignancies are being claimed?

That we could have kind of narrow this down to say well, it might be worth looking at in some sites. But

in sites where there really isn't a whole lot of data, especially for specific subgroups of workers, it's worth looking at from the standpoint of, you know, it just started out as a secondary data source to confirm or to help support, you know, was a random sampling done of workers or were they systematically screened sort of thing.

Any sense of looking at the various sites or data that's available and could we potentially look at what would be the core amount that's needed?

Mr. Barton: Yeah. That's a very difficult question, and as you read through some of these transcripts, you can see that the Board has struggled with that for a number of years. I would point out that even at Savannah River, where just the size of the site meant you were going to have lots and lots of data, that even for certain things, you know like those trivalent actinides, NIOSH said well, you know, the claimant says this is not adequate for that. We need to really go back and code in more data and really get the full suite.

For americium, that was the case. They went through and they captured all the log books and they coded all of them, and that was part of the co-exposure model.

(Simultaneous speaking.)

Chair Anderson: There were some, some differences in years that are being missed and things like that as well. So --

Mr. Barton: Right, and it's -- it's difficult because I certainly understand. I mean we totally agree with NIOSH that that's a lot of effort to go and do that. It's a lot of effort, it's going to take a lot of time. So the question is is it ultimately going to give us a better answer to the point where (audio interference) that that level of effort and the time it takes is going to be worth it for the program?

I'm not sure you can answer that question

universally. And that, that is really I guess the subject that I wanted to be broached today, was could we come to a universal programmatic assumption where we say listen, the claimant population is going to be close enough to a random sample to where we can use it.

And really I don't -- I'm not sure how you answer that. You can't answer it analytically unless you're going to compare each site, and unless you have a database to compare it to, it's difficult unless again the Board adopts the policy position that we believe the claimant population is close to a random sample and is representative of the full site population, where we have infinite resources to go gather all this data, encode it and analyze it.

It's a question that takes on different nuances for every site you look at. But again I point out that yeah, Savannah River had a ton of data, but even then for certain operations like the trivalent actinides that were separated, it was necessary to go and grab the full site population, and that's probably going to be the case at a lot of these larger sites.

You mentioned Hanford. I mean even sites like Fernald come to mind where, you know, you had 400,000 uranium bioassays, but it wasn't that simple of having that, you know, incredible number of data points because there were other operations going on with thorium.

So I mean I think each site's different, but the real question is I think higher level. It's can we make an assumption where we can say that the claimant population is a suitable representative sample of the full population at these various sites?

Chair Anderson: Comments, questions others have?

Member Ziemer: I'll throw something into the mix that has occurred to me, and I can throw it out there. I'm not prepared to answer my own question, but there's one area that we probably can't address that couldn't make the argument that the two populations

are not the same, but not in the way we're thinking about it.

It's very possible that the claimant population has a bias toward underlying conditions including genetic issues that would make their susceptibility for equivalent doses, their susceptibility to cancer or risk, their personal risk factors higher. It would have nothing to do with the monitoring issue, which could be completely representative of both groups.

Chair Anderson: Yeah.

Member Ziemer: So and if biological factors were more of a determinant, then that would argue that the populations are only different in that respect, but not in the respect of how they are monitored. It's just a thought to put into the thinking as we're going forward, because we have that issue of no studies showing that the monitored or that those with claims were -- the idea being that perhaps they had higher doses might be. But no studies show that.

But if we're talking about biological susceptibility and biological risk, that's not an issue we deal with per se.

Chair Anderson: Right.

Member Ziemer: (Audio interference) thought as you think about this whole picture.

Member Clawson: This is Brad. In dealing with this at Savannah River and everything else like this, they're wanting to come up with a one-size puzzle fits everything. And as every one of us that has worked on any of these sites or dealt with these sites, every one of these sites has their own unique characteristics and processes that we just can't capture in this population.

It to me was I understand about the time, the expanse and everything else like that. But guess what? If we don't have the data, we've already got something in place right now to be able to take care

of that, and that's the SECs. But to be able to come in and try to be able to use all this NOCTS data and everything else I think is not right, and it's not -- it's not what the system was set up to do in my personal opinion.

Member Ziemer: Well inherently I think it would be hard to argue that the NOCTS data is somehow biased for just those who were claimants. That's all I'm saying.

Member Ziemer: Yeah. I understand what you're saying, and I'm just -- you know, we've been, we've dealt with this one for a few, you know, quite a while, I think the last four years, and I -- I have not seen anything that has shown me that it would be the best route to go.

Chair Anderson: Yeah. That's another question too that you have stop to think about is that a person inhales a particle, and whether that particle may only be temporarily stuck in their throat, it may be stuck in their lungs temporarily. But you never know when it's going to be that, as a lot of people like to use the term "that magic beebee" that triggers something.

There's just no way of knowing this, you know, exactly why it will trigger in some people and other people it won't. Two people working side by side, one can get a whole, get a rather large dose and the other one won't, just based on a few feet of difference. Or somebody will have contamination on their hands, and they will go eat, whereas the other guy washes his hands.

Now you've got a problem here that -- particularly among a lot of these people who weren't monitored. Like a lot of the contract crafts and stuff are escorted. Well, your escorts are trained. They're not going to go eat without washing their hands. A lot of those craft, some of those craft guys probably will. They are used to that.

So I mean, you know, when and where that location is of that contamination or that wound is, it's a

crapshoot and there is no way to use NOCTS data and sit there and say well, these guys got this. And a lot of times it's where they got it and how it set there before it moved on. That is a question that we cannot answer.

Member Kotelchuck: Henry.

Chair Anderson: Go ahead.

Member Kotelchuck: I have a different kind of question about the design of Bob's study. Two out of the three data sets were urinalyses, and of course what you get in the urine may come from several different routes of entry. That's considered a virtue. I would have hoped that you might do something that didn't involve the human body intervention by saying, taking the -- taking the film badges of the entire population out of the NOCTS population, and wouldn't get into how, what route of entry is going to result in a certain amount of material in the urine.

So, so two out of three -- so I would have liked to -- I would have hoped that you could have found some other plants where or those plants where you could look at film badge data.

The other thing is the tritium dose. That's done, measured with scintillation counters primarily.

Mr. Barton: I believe that all three would have been based on urinalysis. I think that tritium, it's called dose because it's so easy to calculate a dose based on tritium urinalysis. I will definitely kick that over to NIOSH to confirm that. But I believe all three studies were urinalysis.

Member Kotelchuck: Aha, okay. That to me is a fairly serious limitation in terms of broadly applying or seeing whether we can broadly apply NOCTS to the entire population. And as I say, I think film badge data, if we can get it and I suspect there are places where we can get it, would be helpful in trying to make a decision, help us understand.

I don't disagree with what, you know, other people said. I may be skeptical at one level of use of NOCTS data for the whole sample. But in a study, I think we need to have something beyond three urinalyses.

Chair Anderson: Other comments people have or thoughts? We aren't going to resolve -- we aren't going to resolve this today, but what I'd like to do is --

Member Beach: Andy, before you jump -- before you go forward, is there any path forward for validating the NOCTS? I know there have been some samples and I believe it was addressed today. But is there any other work that can be done?

Mr. Barton: Well, to answer your question Josie, and Joe might be able to step in here too, there's really -- there's really kind of three paths forward I guess. The first one would be say we looked at it in those three cases which were the urinalysis cases that Dr. Kotelchuck was just discussing, and we believe that's going to be applicable across the entire program.

The second one would be we could take a look at more sites, you know, and what's the correct number of sites? I don't have an answer to that. I'm not sure there is an answer to that. It's really again this boils down unfortunately it's a policy question.

The third option there is that you don't believe that you could ever sufficiently validate it to be able to make a programmatic assumption for all the sites. One thing that I think we point out in our memo, I didn't have a slide on it, but LANL is coming up for the series or reports.

I know LaVon updated earlier today on that. I'm not sure if we'll get into that discussion later in the Board Work Session. That might be another opportunity to take another look at it. I guess the question for you all is, you know, we take a look at that and we'll find out. Is that going to be enough? I think that's kind of a fundamental question that needs to be wrestled with.

Member Field: Bob, this is Bill. I had a question. In one of the earlier slides, it was stated that there was statistically similar. I think I understand what you're meaning, but when you talk about statistically similar, were you talking about the exposures were the same, or that it was statistically similar in the work groups that were archived?

Mr. Barton: It was the analysis of those young results. So you come up with, it's called a time weighted one person-one statistic, and when you compare the distributions, you have a distribution that we had developed based on the all worker population, which you essentially had that data for, and then you compare it to the claimant population for those same three sites.

The two distributions that were developed for those workers were statistically similar.

Member Field: I was just wondering if something like Monte Carlo could be done to look at -- to really try to model the uncertainty and the prediction of well, how well they actually do represent it?

Mr. Barton: Well, certainly something akin to that occurred recently for Savannah River. I don't want to necessarily start --

(Simultaneous speaking.)

Mr. Barton: --trying to describe the statistics of it, but they have this bootstrap analysis that was done to compare the two populations to see, you know, what differences there are really. I think that level of statistics was done for those three cases, and the questions is the three cases in NOCTS. It's not an easy question.

Member Field: Yeah. So I guess it's a matter of statistically similar versus how predictive can you be.

Chair Anderson: Well, and it's -- you're trying to assign doses to the unmonitored workers. And so part of it is are the unmonitored worker represented?

Are they similar to the ones who were monitored? And that's somewhat problematic in that they weren't -- I mean (audio interference). They weren't monitored because they -- and that was partially at Savannah River as well, that they didn't need to be monitored.

So you know, and that's always hard to know. Did they have a protocol in place that they should have been monitored but they weren't, or so I think there's all of those kind of questions that come into play when you're using this database to assign doses to unmonitored workers. So it really becomes are unmonitored workers representative of the overall population, or are they somehow a selected group and were they not monitored but at higher risk? Those are kind of difficult questions to answer.

Member Ziemer: So Henry, are you suggesting that we should have some (audio interference) sort of like we do for surrogate data, to say what conditions do you have to meet to use NOCTS data.

Chair Anderson: Well I, I don't know if we can do that. I mean that would be my question to Bob, and I would -- I think the simplest thing is kind of what we did when we reviewed the -- when our committee looked at those three examples you gave, we said on a -- you know, it may well work there. We stopped short of saying this is now a universal principle that we can adopt.

So it's kind of -- the fallback here is case by case. Well that isn't terribly helpful because you don't know until you've put all the effort into trying to dig out all the old data, which again year after year of finding more boxes of -- well that's going to provide the answer kind of moving forward.

But if there could be some generic or general characteristics that we want to look for to say that, you know, then it may be worth exploring at a specific site, rather than saying you can or you can't.

Mr. Barton: Well, I think, I think you really hit the

nail on the head there, because how do you -- how can you validate it for any given site unless you already went through the process of gathering that data and comparing it? And so that's really the question.

Chair Anderson: Yeah.

Mr. Barton: The other thing I would say is you were mentioned, Dr. Anderson, that you know, are the unmonitored workers represented by the monitored workers? But it is one step further than that because we're looking at only a subset of the monitored workers, which is in the claimant population.

And then there's certainly factors that Dr. Ziemer pointed out that go into, whether it's biological factors that go into it, the timing, you know. There's a lot that could go into it.

But the question is, is it close enough to a random sample of the worker population such that we can consider it a random sample and thus use it as a representative data set for all cases where we need it where we have an unmonitored worker and you don't have data for them and you need to reconstruct their dosing.

Member Clawson: Let's just take a look at something else too. We're trying to do this for the unmonitored worker. This is a compensation program for people that have been injured and so forth like that. So we're trying to take all of this other information, and to me trying to use this like this is just smoke and mirrors, because we are never going to get to the point that we can actually say yes, this is totally representative of it, because we don't know what the people that are unmonitored got.

Bottom line, that's what it comes down to. We can guesstimate and everything else like that, but that's not -- that's not what we're here for. We're doing the best we can, but we've got to do it with the information that we have and be able to put our stamp of approval on it.

I've been against this. I have a hard time with our coworker model, but guess what? That's what we agreed to have and that's what we pushed forward with and work with.

Member Ziemer: Brad, we're still required if we can bound it. We don't have to have the exact value for workers.

Member Clawson: Well, and that's true Paul. But what if we don't -- what if we have insufficient data?

Member Ziemer: Well then we can't bound. Then we can't bound. I'm just saying that not having individual data is not the criteria.

Member Clawson: Right. We have but --

Member Ziemer: --whether we can bound it or not.

Member Clawson: But when we have insufficient data and we can't do that, we have the process of an SEC.

Member Ziemer: Oh yes, right. Nobody's arguing that.

Member Clawson: And to me, what we're trying to do is step away from that and try to use this other stuff. Let's just be brutally honest.

Chair Anderson: I'll ask Bob, since you're our contractor that did this work, do you see any, any things that your group could do that would help us move forward, or are we really left with we either have to say do it or don't do it, or do we go to case by case, and if NIOSH thinks that they need a -- this is their only option for co-exposure determination, have them put it forward and then we on a case-by-case review it.

Mr. Barton: You know, I can't see a way that we could ever just put a number on it and say as long as we've reached this level of justification, that it will fly in all cases. However, that doesn't mean that more examples. In addition to the three that were done in TIB-0075, it adds to a greater level of comfort for

lack of a better phrase.

Chair Anderson: So do we have any sites that are -- I mean that there's past sites and there's sites to come. Some of those that are coming up, I think you mentioned might be ones where NIOSH is looking at using NOCTS data for a co-exposure model. Is that, are those examples we maybe want to do some exploring with?

Mr. Barton: Well, I think that these questions would certainly come up during that process. I did mention LANL, but I don't want to step on NIOSH's toes about what they have in development. I don't know what that is. But yeah, again this is -- this is sort of again, sort of a kickoff session --

Chair Anderson: Yeah.

Mr. Barton: --just to get everybody thinking about it, because I think, you know, what we're -- we'll eventually have to deal with it at each site. The question is, is there something -- can we convince ourselves or get a level of comfort where we can say no, the claimant population isn't a random sample, but it's a semi-random sample and we're confident that we're not somehow missing something by not capturing all the information that is available.

The only way to maybe perhaps move it beyond just a philosophical discussion is to, as these sites come up, to specifically look at, you know, what are we basing our co-exposure distributions on? Is it based on NOCTS and what did NOCTS tell us? What are, what are the limitations for the population?

But again, I wish, I wish I had a more definitive answer on how to answer this question but there simply isn't one. It's a philosophical question about whether you're claimant population is a suitable subset to use, to substitute in for going and capturing everything.

Chair Anderson: Other Board members have any comments? I think -- I mean what I'm hearing is

there continues to be considerable skepticism about the appropriateness of the NOCTS data for the purposes that have been proposed. So it's kind of user beware. If NIOSH feels that they can make a stronger case on some sites for this than others, they just have to be aware that there's going to be some skepticism raised and therefore they're going to have to do perhaps a better job in justifying the utility of this for a specific site.

I don't know. Do other members have any thoughts? Do we want to --

Member Beach: Well Andy, I know we're expecting our LANL report sometime in September. So that Work Group would be convening against soon after that or after SC&A has a chance to look at that. It may be that that will come up for discussion and we'll have a little more tools.

Plus I want to go back and read all the different transcripts that Bob pointed out that I didn't have a chance to get to before this meeting.

Chair Anderson: That's fine.

Member Beach: But it sounds like moving -- moving forward, it sounds like we're going to be reintroduced to this a lot.

Chair Anderson: Okay. That's kind of my sense, that it's not going to go away in the matter, and the question is with what we have now, do we have a definitive way forward and I would say no. I would say your LANL group is going to be one and we just have to think about this some more and maybe that's your Work Group. That's the one we need to look to to work on this issue.

Member Kotelchuck: And Henry, I agree with you. I don't see that we're going to be able to make ever a definitive statement about when we can or can't apply it, and therefore we're just going to have to continue on with people suggesting use of NOCTS and we look at it case by case. It's not going to go

away as you say.

Chair Anderson: Yeah. I mean it's a real tempting database to use. It's now been in place quite a long time and has gotten quite large. So if it would meet, you know, sufficient criteria it would be a boon to be able to use it. But I'm not sure we're there right yet. Any other -- I mean we have some other issues for our Board session today.

We just wanted to introduce this and get those that haven't been thinking about it thinking about it. Again, if any of the others of you want to say a few words or think about it more. But it's something I'm going to raise again for the Board to think about over time.

But I think Bob, you've done a good job bringing together the history of it. I didn't realize it went back to 2009, so it's -- when you think in terms of the other criteria for what used to be coworker modeling, how long it took to come up with those guidelines, I don't expect a simple solution for this one here. Paul, any other thoughts?

Mr. Barton: I was just going to add that I think part of it is that when we've developed -- when the Board developed those guidelines that are IG-006, NOCTS is mentioned in there, just not necessarily in this way. It's used as a tool that we can look at well, even among this subset of the worker population, let's look at who was monitored. There's a great example in there from Nevada Test Site, where we were able to look at the claimant population and say well, who was monitored at Nevada Test Site? It turns out that involves a lot of the rad tags and the security people, who didn't necessarily go past the check point.

And so that was the reason, one of the reasons why the SEC was recommended there. That's the utility of using NOCTS not just absolutely, is that it can give you a great wealth of information because we have information on job titles and various other things. But the guidelines as they stand right now don't address whether we can sort of make a blanket assumption

that claimant population can replace the full suite of data were we to go get it from these various sites.

I think that's -- that's really were it arose from, because the guidelines as written right now are not clear on it so --

Chair Anderson: Yeah. Well there's also I've talked to quite a number of workers who felt they really didn't deserve to be compensated. So even if they had the cancer, their family would make a claim. So there's all sorts of as we talked about the genetic risk factors. There's also as we know now with COVID and the vaccines and testing and all of that, there's also social personal issues of I was paid for my work and I did the best I could, and nobody's really to blame.

So we don't really know how all of those factors fit into it. So any other last comments? Then I guess we'll wait to see the LANL report when it comes out, and I don't know if any of the NIOSH folks want to weigh in now or not.

Mr. Taulbee: This is Tim. No, nothing really to weigh in at this time. I'm not sure the LANL reports are going to move more in that direction, but we'll see.

Chair Anderson: Okay. Well that's, yeah. Okay. At least you know where some of the concerns lie, so you just have to beef up the support if that's the direction you feel we have to go.

Mr. Rutherford: This is LaVon Rutherford. I will say that the LANL reports at this time have no intention of using the NOCTS database in itself.

Chair Anderson: Okay. Well then we'll just push it off until it does raise its head again. Okay. Any other comments on this? We appreciate the work you did Bob and your group in pretty short order, and I think there's some support documents that are going to be helpful to us as we move forward.

So Rashaun, I think there's some -- what other Board issues do we have here?

Dr. Roberts: We, I think it makes sense to transition into the Work Group and Subcommittee reports, if folks have things to report for those.

Chair Anderson: Okay. Work Group reports.

Member Kotelchuck: Well yeah. I'll start.

Chair Anderson: Go ahead Dave.

Member Kotelchuck: I'll start with Ames, the first one on the list, because it's a strange conclusion. We have never met, which is really unusual. However, as soon as Tom Tomes went over the data, it was reported directly to the Board that we just didn't have enough data and we gave it an SEC in December of '17.

Since then, he's been trying to do some data capture so that he can update the Site Profile, which makes sense. I, it's just been very slow and I gather Tom by the way will be retiring soon. So, so I feel like -- I feel as Chair of the group that we've been waiting to get the data, so that we could have a meeting to talk about updating the Site Profile.

But until we have -- until the data is complete as best we can, there's nothing much to do so we haven't met. If anybody can say, Tom is not on the call I believe, if anybody could say, you know, that work is now well enough done that we're ready to hold a meeting, I'd be very glad to hold a meeting. But otherwise, I'm just watching and waiting, and then --

Mr. Rutherford: Dr. Kotelchuck?

Member Kotelchuck: Yes.

Mr. Rutherford: Yeah, this is LaVon again. Yeah. Tom is definitely retiring and passing that on. We haven't identified a person who's taking that over. Part of the issues with Ames is it isn't to that 835 area, that we're dealing with similar issues at LANL and other sites, and we're kind of seeing how things are playing

out.

We've done a lot of data captures and we've pulled data, we've had interviews. But we're kind of seeing how some of this is going to work out in order to update, make a final conclusion on that period. So I would suspect -- I mean at this time, you know, as things progress with LANL I think you'll see that we will update and move quickly on Ames after that.

Member Kotelchuck: Oh, very good. I would appreciate it. Now on -- I mean I just want the other Board members to not figure that we're doing nothing because we have never met. We're keeping up with it and I appreciate when we'll get some further data when the issues are resolved.

And I'll be glad to hold a meeting, and I hope the Board members who are members of the Subcommittee, of the Working Group will remember who they are. I know who they are. But I don't want to scare them. As soon as I hear, we'll start meeting.

Chair Anderson: We don't need to go through all 58 pages here. I mean I thought the status, the Work Group Subcommittee activities report was very comprehensive. I would only ask the chairs is there anything wrong there or additions that we need to put into this, because I think this is a very helpful document just to keep track of all that's going on for quite some time.

So if there's changes or additions or I think early on when the memberships were circulated, people didn't realize they were (audio interference). They thought they were and they weren't. We want to get that all current. So if you haven't looked it over, please look it over for those who have been involved, and hopefully this does accurately reflect what's going on. But it's really quite comprehensive.

Member Kotelchuck: It was a good -- it was a useful report.

Chair Anderson: Yeah.

Member Kotelchuck: Summary report.

Member Beach: Andy, there was one missing and I sent it to Rashaun, and now I don't remember which one it was.

Chair Anderson: Right.

Member Beach: I was trying to go back and look through my notes. It's like Rashaun, do you remember which one I emailed you and --

Dr. Roberts: I don't actually.

Member Beach: I don't think you ever responded to me, so I'll look through my emails. I think Joe actually caught it and Joe's on the line. He'll know which one it is.

Chair Anderson: There's a Work Group Coordination Report as well. It's an Excel spreadsheet.

Member Beach: Okay, it was missing off that spreadsheet.

Chair Anderson: Yeah.

Member Beach: Okay. Well, we'll go back and look or I will.

Chair Anderson: Yeah. Well I guess we'll encourage everybody to -- it all came, and it was a lot to read. If you see something that ought to be added let's -- these are the documents we want to keep current and work from.

Member Kotelchuck: Yes.

Chair Anderson: So Board coordination, executive summary there. That's a little more manageable.

Member Kotelchuck: Yep.

Chair Anderson: And Rashaun, the public comments? There were many there.

Dr. Roberts: Okay. So are we done with the Work

Group reports and --

Chair Anderson: I mean do we have -- we have a couple of ones that are scheduled to meet shortly so --

Dr. Roberts: Right.

Member Kotelchuck: Right.

Dr. Roberts: So we have the Subcommittee on Dose Reconstruction reviews.

Member Kotelchuck: September 29th. The 29th's set.

Dr. Roberts: Okay, and I think that may be the only one currently. Okay. So if that's all people have to report, then I can continue. So from the April 2021 Board meeting, there were a few comments that were offered by the public, and the vast majority of them really revolved around raising questions and voicing support for adding the SRS SEC. So there wasn't much beyond those kinds of comments.

In terms of planning meetings, I just want to make sure that I have everything correct with what we have determined already. So I think we have established that our telephonic, our telephone planning meeting for the December Board meeting will be on Wednesday October 20th.

And then we have scheduled the two- day meeting, which will in all likelihood need to be done virtually because I don't anticipate that there will be a change in travel policy. And then we have a lot of -- a lot going on with variants and surges in cases across, you know, the country.

So I'm anticipating, as Andy had said earlier, that that's going to be another virtual two-day meeting, and that we have scheduled for Wednesday the 8th and Thursday the 9th of December. And if anyone recalls differently, please let me know. But from -- that's what I have down so far.

Then we have the next teleconference scheduled for

Wednesday, February 16th, 2022. So those are the ones that I think we have established the dates around. We could talk about setting the date for the April meeting, which hopefully would actually be in person at that, at that time. I know last time we said we were going to meet in Spring this year, but those plans went ka-bosh. So I'm hopeful --

Member Beach: I thought we -- Rashaun, I thought we did have those dates. I have listed the 26th, 27th and 28th. I think the meeting was 27-28 is what.

Dr. Roberts: 27-28, okay.

Member Beach: That's what we talked about last time.

Dr. Roberts: Okay, so 27-28, okay. Does that --

Chair Anderson: Yeah. I've got a question mark on 26 but --

Dr. Roberts: That would have been the travel, yeah.

Chair Anderson: Yeah.

Dr. Roberts: Okay. So 27-28, and did we set anything for June of next year?

Member Beach: No.

Dr. Roberts: Okay. So then starting with that, I mean we could go ahead and try to tentatively identify some dates now for that one. And that would just be a teleconference.

Chair Anderson: For June?

Dr. Roberts: For June of next year. So if we're keeping to our Wednesday-Thursday pattern, we could go for some time in mid-June of next year, the 15th or the 16th of June.

Member Beach: Those work for me.

Chair Anderson: Yeah.

Member Kotelchuck: Fine, fine.

Dr. Roberts: Okay. So maybe --

Mr. Calhoun: I can't make the week before.

Member Ziemer: I'm good, either one.

Dr. Roberts: Okay. But Grady, that was -- was that you? So you, you would be available for like the 15th of June?

Mr. Calhoun: Yes.

Dr. Roberts: Okay, perfect. Okay, so we'll say tentative.

Member Beach: And we're starting those at 7:30 now instead of 8:00; correct?

Dr. Roberts: Yeah, yeah. I think 10:30 Eastern, yes, yes.

Member Beach: Okay.

Dr. Roberts: Okay. So I will put that down, and then, you know, usually we'd like to go ahead and plan out by about a year. So let's go ahead and talk about August, probably targeting middle month like we did today. Would that be okay? So something like the 17th and 18th of August 2022.

Chair Anderson: So the June meeting, that's a potential -- that's just a call?

Dr. Roberts: That's just a call.

Chair Anderson: Yeah, okay.

Dr. Roberts: The August meeting would presumably be in person.

Chair Anderson: Yeah.

Member Beach: Those dates work for me.

Dr. Roberts: So okay.

Member Kotelchuck: Yeah, that's fine.

Dr. Roberts: Okay. So --

Member Ziemer: What was the August date?

Dr. Roberts: The 17th and 18th.

Member Ziemer: Yeah, okay.

Dr. Roberts: Would that be okay?

Member Ziemer: Yes.

Member Beach: Uh-huh.

Dr. Roberts: Okay, the 17th and 18th. Okay.

Member Ziemer: Rashaun, are you anticipating that by April we might be meeting in person, or is this really just too early to even think about?

Dr. Roberts: I really am hopeful that we can actually have that face to face meeting. But as you know, things could take a turn. So --

Member Ziemer: So wait and see.

Dr. Roberts: Yeah, and as Andy said, it would just be nice, especially if there are new members, to be able to actually come together physically in person. But you know, we're kind of at the mercy of what's happening.

Member Ziemer: Well, we have plenty of lead time before April, so we don't need to decide right now.

Dr. Roberts: Right, exactly, exactly. Okay. Well it looks like --

Chair Anderson: What are the -- what are the August dates again?

Dr. Roberts: It is 17th and 18th of August.

Chair Anderson: Okay.

Dr. Roberts: Okay, great. So again, we have a

teleconference February 16th, which is a Wednesday. For April the 27th and 28th of next year. A teleconference set for June 15th of next year, and then the presumably face to face meeting August 17th through 18th of next year.

Chair Anderson: Any thoughts about a site for August?

Member Beach: Or April.

Chair Anderson: Or April.

Dr. Roberts: Yeah. April would be the in-person.

Chair Anderson: Yeah.

Dr. Roberts: Yeah. Doesn't that kind of depend on, you know, various factors that may be too early to tell at this point?

Chair Anderson: Well, if we have any sites that are going to be discussed or we have SECs to finalize, it would be nice to have it near the --

Dr. Roberts: Right, near that particular site.

Chair Anderson: If not, Brad and I will just pick a place where there's good fishing.

Member Clawson: Amchitka sounds good.

Chair Anderson: Yeah, I know.

Dr. Roberts: Well, I think we have time to discuss and decide, unless people want to offer candidates now.

Member Schofield: The Bahamas.

Dr. Roberts: I'm with you, yes. Okay. Well, we can circle back to this. But that really concludes the business session, unless anyone has anything else.

Member Kotelchuck: Nope.

Dr. Roberts: Okay well --

Chair Anderson: Are there any public commenters?

Dr. Roberts: Actually I was given a public comment to read into the record, and that's the only thing I was contacted about prior to this.

Chair Anderson: Okay. If not we could -- if not, we could take a break for 15 minutes.

Dr. Roberts: Yes, and I would just remind, if there's -- there are members of the public who do want to speak, to please be on the line at 5:30, because we will start at that time. And your, your comments should be limited to five minutes.

So how about if we reconvene? If we're going to take a break Andy, we could come back at 5:25.

Chair Anderson: Okay, sure.

Dr. Roberts: Does that sound okay?

Chair Anderson: I mean unless you could read in the public comment?

Dr. Roberts: I think I may need to wait until the actual session.

Chair Anderson: Okay.

Dr. Roberts: So I think I'll do that.

Chair Anderson: Then let's come back at 5:25.

Dr. Roberts: Okay, great. Thank you.

(Whereupon, the above-entitled matter went off the record at 5:14 p.m. and resumed at 5:26 p.m.)

Chair Anderson: Okay.

Dr. Roberts: Okay, let me just check in for the court reporter. Are you on? Okay, thank you, and Andy, if you don't mind, I can do a quick roll call.

(Roll call.)

Dr. Roberts: So Andy, I have a quick question for you just to kind of get coordinated. Did you want to run the comments session?

Chair Anderson: No, you can. I mean is there any -- I don't -- you're going to read one in. If not, you just -- you just do it.

Dr. Roberts: Okay, that sounds good.

Chair Anderson: But if we had a list of names, I'd be happy to go forward, but we haven't got that.

Dr. Roberts: Yeah, yeah. Not this time, and like I said I got the one comment. But yeah, maybe I should wait until everybody's back at 5:30 and if we don't hear from anyone else, then I just read it Andy.

Chair Anderson: Okay, great.

Dr. Roberts: So just sit tight for a couple of minutes.

Chair Anderson: Anyone else have any issues under Board work that are -- they would like to raise?

Dr. Roberts: Actually, I did want to make mention about the circulation of the current membership for the Work Groups and the Subcommittees, and Josie yes, I remember that you made a comment about something being missing. I also received some other comments about people either not being on the Work Group that they were noted as being on and etcetera.

So what I'm going to be doing is cleaning up the membership list and recirculating it, just so we can be clear of who's in what groups and then make sure that all the groups are listed. So that's just an FYI.

Public Comment

Dr. Roberts: Okay. I'm going to pull up the note.

(Pause.)

Dr. Roberts: Okay. So I have 5:30 Eastern Time, and I just wanted to welcome everybody back. This is the

Public Comments Session, and so if there are any members of the public who would like to make a comment, please feel free to do that now. And again, you have about five minutes to complete your comment. So would anyone like to?

Ms. Degarmo: My name is Denise DeGarmo, and I would like to make a comment.

Dr. Roberts: Sure, please do.

Ms. Degarmo: Okay, good afternoon. Let me take a minute to introduce myself. I'm Dr. Denise DeGarmo, the Petitioner Representative for the Pinellas Plant on SEC Petition 256, which is currently in the evaluation process.

NIOSH has said it expects to release this report in September, meaning it could be under consideration during the December Board meeting. Thank you for allowing time for public comment. Many of you may know me. For those who may not, I'm the recipient of numerous grants which helped fund over 20 years of research on nuclear weapons facilities and their workers, and I've had the honor of presenting my research globally.

I received my Ph.D. in Political Science from the University of Michigan-Ann Arbor in 2001, which a specialty in International Relations, a focus on security and nuclear weapons and comparative politics, and (audio interference) financial resources in the environment.

I'm a professor emerita in the Department of Political Science at Southern Illinois University-Edwardsville, where I taught for more than 15 years. During my career, I've successfully published over 30 peer-reviewed books, journal articles and government publications.

In the past, I've conducted research for former President Barack Obama when he was the junior Senator from Illinois, and former Congressman John Shimkus, also from Illinois, regarding the Dow

Madison Special Exposure Cohort Petition, and some of you may be familiar with my work on that petition.

As the primary petitioner on the Pinellas Plant SEC, I would like to make a few comments regarding this petition, in the hopes you will take my comments into consideration between now and the December Board meeting. The overall history of General Electric's Pinellas Plant and its contribution to the United States' nuclear ambitions is well-documented.

In short, the primary mission of the Pinellas Plant was to produce precisely timed neutron generators, which served as the triggers for nuclear bombs. While ooh and ahh over the brilliant technological advancements made at this nuclear weapons facility, we seem to have forgotten the names and faces of those workers who made these accomplishments possible.

Rather, we have reduced them to a claims number used to process them through the burdensome program known as the DEEOIC. Let me provide you a brief introduction to some of those workers who will be affected by your decision, whether it is in December or later.

A Sunday visit to Pinellas most certainly involved a trip to church with Worker No. 1, when no one else would listen to his pleas for help while suffering from excruciating pain and disfigurement associated with incurable squamous cell cancer of the salivary glands. God was his last hope. The only thing that eventually released his suffering was his death.

Worker 2 suffered from multiple bouts of breast cancer, in which she was left disfigured, sorry. In which she was left disfigured. Although frail, she never hesitated to engage in conversation around the kitchen table. We focused on days spent at the Pinellas Plant, remembering the friends who died from cancer, praying for those friends who were still alive but infirm, and how plant managers had a cavalier attitude towards safety and downplayed workers' exposures.

Worker 3 became a second parent to me. We spent hours drinking coffee, reminiscing about her days at the plant. She was never quite sure what she worked on, but was told it was classified. She spoke often about her spouse, who also worked at the Pinellas Plant, and he died from brain cancer. I was at Worker 3's side when the doctor told her he had found a malignant neoplasm of her upper lobe and left bronchus. When Worker 3 succumbed to the cancer, I was holding her hand.

Worker 4 died from invasive pulmonary adenocarcinoma. Worker 4 and I would always meet at the local IHOP. We drank coffee and ate pancakes while discussing the details of his employment at Pinellas. He was so excited when he was hired by General Electric because GE offered good pay and a health benefits package.

Worker 4 had no idea that his job would expose him to some of the most dangerous radioactive materials on earth. He was furious that Pinellas Plant allowed him to be exposed to radiation without his knowledge and consent. Unfortunately Worker 4 passed away suddenly, only hours after our last breakfast date.

The basis of the Pinellas Plant SEC Petition 256 rests on a little-known report entitled "The Department of Energy Environment Safety and Health," dated May 1990, the Tiger Team assessment of the Pinellas Plant. The Tiger Team descending on the Pinellas Plant on January 15th, 1990 with the mission of providing independent oversight and assessment of the compliance and management of environment safety and health programs, while identifying root causes for non-compliance.

When the Tiger Team completed their mission at Pinellas, there were 177 findings. Obviously I don't have time to discuss all 177 points, so I will limit myself to the key findings of the Tiger Team that impacted the health and safety of workers.

Workers were exposed to hazardous airborne particulates because the ventilation systems were

not tested and maintained in a manner consistent with generally accepted industrial practices. The radiological safety controls associated with the accelerator and X-ray machines were lacking in formality and were not in compliance with generally accepted standards.

The personal dosimetry program at Gen did not ensure personal radiation exposures were accurately determined and recorded. Accreditation of the dosimetry system was not completed, along with the formalization of employee exposure investigations by 1990, as required by DOE Regulation 5480.11.

The facility and site did not ensure effective implementation and control of radiologic protection activities. The Health Physics internal appraisal program was not in accordance with the DOE Regulation 482(1)(b), Section 9.D and DOE Regulation 5480.11.85. The radiologic procedures at Pinellas Plant did not provide for the control and use of radioactive materials and radiation-generating devices in regard to safe operations.

The plant lacked formal documentation of investigations into personal exposure anomalies, and supervisors were not required to acknowledge the facts surrounding the assignment of radiation exposure to their personnel. The contamination control program did not ensure that workers were protected from unnecessary radiation exposures.

The bottom line is that this report calls into question the ability of NIOSH to accurately estimate radiation doses for employees. The dedication of the Pinellas workers to serve their country in a time of need translates into their extinction. As you know, they died from their war wounds, cancer.

Cancers resulting from years of radioactive exposure they knew nothing about. Their medals of honor consist of breathing tubes, ostomy bags and scars of cancer surgery. Their fight for freedom has relegated them to wheelchairs and walkers. Please remember that there are real people behind the claims numbers

and medical diagnoses.

This special exposure cohort petition, Petition 256 is for them and should be approved. This SEC has certainly been a collaborative undertaking between worker and researcher. I could not have written this petition without the support of the workers of the Pinellas Plant.

Another person who proved invaluable to the petition process is NIOSH SEC counselor Josh Kinman. I thank him from the bottom of my heart for providing clarity and insight into a very difficult submission process. He was a great sounding board. Josh, you are a wonderful asset to the NIOSH organization. Thank you to the NIOSH staff health physicist and others for reviewing this petition in the most thoughtful of ways.

I'd also like to thank Oak Ridge Associated University as providing a safe environment in which workers were interviewed. They finally felt that someone was listening to them. I hope you will do the same for these workers as you consider this Petition when you receive the report. Thank you, and I will be submitting a written copy of my statement for the official record.

Dr. Roberts: Thank you so much.

Ms. Degarmo: Thank you for the opportunity.

Dr. Roberts: Is there anyone else in the public that would like to register for comments?

Ms. Hand: My name is Donna Hand.

Dr. Roberts: Hi Donna.

Ms. Hand: Yes. I'd like to also put in some comments. Specifically, is that the Board has statutory duties and that must be done, and part of that is to recommend the SEC. According to the regulations, once the SEC has been accepted or qualified, then a full evaluation will be done.

Right now, we're just having the evaluation done by NIOSH, where in the past you would have the Work Group and SC&A do it at the same time as NIOSH. I wonder how come the Pinellas Plant SEC is not getting that same treatment. You're waiting for the report from NIOSH itself, and it's been delayed and delayed and delayed.

Again, the NIOSH are the -- the stipulation in this action is 180 days. Well, once they receive the Petition, and it's been going along a lot longer than 180 days. This information has been at NIOSH. This information has been at the Working Group. Whenever the Working Group held meetings, we (audio interference) the Site Profile Technical Basis Documents.

This information was brought to previous SEC petitions, that it has been qualified for the Petition now, the 256. You also know that the metal tritides at Pinellas Plant, there's five different ones. You also know that they, you know, the tritium was not only the gas but -- and the heavy water everything, but it was also the particles itself, the plate.

Peter Darnell, the previous person at NIOSH that was qualifying whether, you know, you can do the dose reconstruction or not as well as Brian Gleckler and even Grady Calhoun, was well aware that they had problems with it (audio interference). You also have documentation in the file since 2004 that the tritium dose ranged from anywhere between 6 millirems all the way up to 398 millirems, but yet they took the average of 126 millirems. Then all of a sudden they said no, we're only going to use 100 millirems.

Again, this is just using the information based on the (audio interference) files, and that the actual site itself or the documentation from the site itself. That's the problem that you have. The basic law says to characterize the working environment that the worker is in.

So I don't know if you care if you're a construction

worker, you're maintenance, if you're a janitor or if you're the actual person that worked on the trigger itself, you know, doing the metal tritides, the supervisor.

What was their environment that they were working in? Can you characterize it? None of the radiation doses of the Pinellas Plant workers are given a neutron dose, and the law says you shall have the neutron doses. They're not given any of the radiation devices that generate radiation, you know, like the industrial X-rays that they have to look through to see, make sure the (audio interference).

So these issues here, as well as Landau badges saying that, you know, we had to send them back, we couldn't read them. That was all in the documentation that was received by NIOSH in 2004, because when I did a Freedom of Information Act, it took them two years to copy all that material, and I have three Banker boxes full of that information that you have.

You also stated that the RTGs, well we're not going to, we don't have to do those because they were already encapsulated and there were still thermal neutrons getting out. They did the encapsulation of the equipment themselves right there. It was a warehouse-type facility. They didn't have, you know, the cubicles.

So again, I would request that we have a task to where a Working Group and SC&A do an evaluation at the same time, so when this comes before the Board, the Board will have all the information to decide on the SEC. Thank you.

Dr. Roberts: Thank you for your comments. Anyone else care to comment at this time?

Well not hearing anyone at the moment, I'll go ahead and read the comment that was sent to me.

"Good evening Dr. Anderson and members of the Board. My name is Terrie Barrie from the Alliance of

Nuclear Worker Advocacy Groups. Thank you for this opportunity to make public comments.

"I raised concerns at the last Board meeting in April about NIOSH's use of the NOCTS database for their co-exposure models. My opinion hasn't changed since then, despite reading NIOSH's and SC&A's reports. Let's take a look at the practical side of using this database.

"NIOSH says in the 2016 revision of OTIB-0075 that the complete data set for Y-12 contains bioassay information for 7,527 monitored workers. The NOCTS database only contains information for 1,585 claimants. In other words, only 21 percent of the monitored workers have filed a cancer claim five years ago.

"Cancer claims are filed every day with DOL. DOL sent 6,582 cases to NIOSH over the years, with 197 cases currently at NIOSH as of 8/8/21. There may be more cases at NIOSH this week, but DOL did not update that page before I submitted these comments.

"I'm pretty confident that more claims have been sent to NIOSH since 2016. Has NIOSH updated the number of bioassay information to reflect this? How are they going to handle receiving new bioassay data? Will they revise the methodology, the plan weekly as they collect new bioassay records from a new claim? How would this be less labor intensive than using the complete database?

"And if NIOSH doesn't plan on updating the methodology weekly, how would that be claimant-friendly let alone be a reasonable method for dose reconstruction? Historically, NIOSH as always assumed that the bioassay and any other monitoring data they have for a site is accurate and followed the best practices of the time. I do somewhat understand that it may be acceptable, but some data may be excluded for one reason or another.

"But the footnote on page seven of the OTIB says

that NIOSH excluded five workers with extremely high urine results from the complete database. Their reason is that if they included those five workers with extremely high urine results, 'that the claimant data set would always agree with the complete data set.'

"Like I said, I do understand that it is not unusual for statisticians to not include some data. What I don't understand is why the exclusion of the workers with the high urine levels would be a fair analysis. Obviously, NIOSH thinks the records are accurate. Otherwise, I think they would have mentioned that they weren't.

"I also have a concern that workers, that if the complete data set is not used, it is likely that monitoring data will be missed and skew the entire methodology NIOSH comes up with. For example, I know a Rocky Flats worker who publicly testified that he had one of the highest systemic burdens of plutonium at Rocky Flats. He did not have cancer, so no claim was filed.

"If only the information from NOCTS is used, his bioassays would not have been used in the claimant data set. He did not work alone. He had coworkers who would have experienced the same exposure as he did. How can NIOSH claim that this is an effective way to develop dose reconstruction methodology that would be reasonably accurate? I thank you for this time to offer my comments."

Okay, and that's the end of the comment. So I'll ask again if there's anyone else in the public that would like to comment at this time?

Okay. Well I'm not hearing anyone at the moment, so let me hand it back to you, Andy.

Chair Anderson: Okay. I'll accept a motion for us to adjourn until tomorrow at 1:00 p.m. I think it's the same dial-in or connection numbers. We don't need a new one?

Member Ziemer: So moved.

Member Beach: Seconded.

Chair Anderson: Okay. We're ready to go.

Member Clawson: Let's do it, come on. Okay.

Chair Anderson: Have a good evening everyone.

(Whereupon, the above-entitled matter went off the record at 5:50 p.m.)