CENTERS FOR DISEASE CONTROL AND PREVENTION

NATIONAL INSTITUTE FOR OCCUPATIONAL SAFETY AND HEALTH

ADVISORY BOARD ON RADIATION AND WORKER HEALTH

153RD MEETING

DOUBLETREE BY HILTON AUGUSTA

2651 PERIMETER PARKWAY, AUGUSTA, GEORGIA 30909

WEDNESDAY, AUGUST 16, 2023

The meeting convened at 8:15 a.m. EDT

Dr. Henry Anderson, Chair, presiding.

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Members Present:

Henry Anderson, Chair

Josie Beach, Member

Victoria Cassano, Member (via Zoom)

Bradley Clawson, Member

Arthur Frank, (via Zoom)

David Kotelchuck, Member (via Zoom)

James Lockey, Member

Nicole Martinez, Member (via Zoom)

David Pompa, Member

Genevieve Roessler, Member

Loretta Valerio, Member

Paul L. Ziemer, Member (via Zoom)

Registered and/or Public Comment Participants:

Rashaun Roberts, Designated Federal Official

Nancy Adams, NIOSH contractor

Bob Barton, SC&A*

Kathy Behling, SC&A*

Grady Calhoun, DCAS*

John Cardarelli, DCAS*

Frank "Chris" Crawford, DOL*

Denise DeGarmo*

Michael Elliott, Co-petitioner *

Donna Hand*

Ashton Habighurst, HHS

Mangel, Amy, SC&A*

Chuck Nelson, DCAS

Steve Ostrow, SC&A*

Marybeth Potter

Susan Powell, R.N.

LaVon Rutherford, DCAS*

Scott Siebert, ORAU

Tim Taulbee, DCAS

Brant Ulsh, NIOSH

Diane Whitten

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PROCEEDINGS

(8:15 A.M.)

WELCOME

DR. ROBERTS: All right. We're about one after 8:15, so we're going to go ahead and get started. First of all, I'd like to say good morning, everyone. I'm Rashaun Roberts. I'm designated federal officer for the Advisory Board on Radiation and Worker Health. And again, welcome to Board meeting 153.

I'd like to cover a few administrative matters first. For people who are attending the meeting virtually and are not in the room, the meeting materials for today's meeting, the agenda and other materials, are posted on the NIOSH website under this program. You can find them under scheduled meetings for August 2023. So, you can go to the website and pull up all of the materials and follow along that way. All materials were provided to Board Members and to staff prior to this meeting.

This meeting, as you know, is being conducted by telephone and by Zoom, as well as in person. On the website and agenda, there's a Zoom link which will enable you to hear and watch the presentations through Zoom. If you've chosen to receive audio through Zoom, you should be able to speak to the group and hear the presentations. If you're not speaking, please be sure to select and stay on mute by muting the microphone on Zoom, which is usually located on the lower left-hand corner of your screen.

If you've dialed in, you'll only be able to speak and hear the presentation through the telephone line. Make sure that your phone stays muted, unless, of course, you need to speak. If you don't have a mute

button on your phone, press star six to mute. If you need to take yourself off mute, press star six again. If you're participating by Zoom or by telephone, please identify yourself before providing your comments or questions for the court reporter.

For Board Members who are participating in person here in Georgia, you'll need to use the microphone that's in front of you. Press "push" when you would like to speak and press the same button to put yourself back on mute when you're done.

Also, there is a public comment time at the end of the day. It begins at five o'clock and continues until 6:00 p.m., or until the comments are finished, whichever comes first. So, if you do plan to give comments and you're here or remote, please plan to be ready by 5:00, because we never know how long the comment session will take. And just to note for people in the room, public comments -- who want to make public comments, there's a sign in book outside, and you should sign up if you want to give public comments.

A few more housekeeping details for everyone who's here in person. Restrooms are located out the doors to my right. Once you step out, take a left. The restrooms are right next to a water fountain. There's also water available here in the room. We'll take a 15-minute break around 10:15. Lunch will be around noon. There's an onsite restaurant, I believe, and also nearby restaurants.

Roll Call

DR. ROBERTS: So, with all of that said, let me move into roll call for all Board Members. During the roll call, Board Members should state any

conflicts of interest you may have as you register your attendance. I will note that Savannah River site, and Metals and Controls are on the agenda today, and anyone who's conflicted will be asked to disconnect from the meeting for that agenda item and then to rejoin for the -- for the next agenda item. So, let's go ahead with the roll call in alphabetical order. We do have several Board Members who couldn't be here in person, but they should be on Zoom or on the telephone. Okay, so alphabetically, Anderson?

CHAIR ANDERSON: Present.

DR. ROBERTS: Beach?

MEMBER BEACH: I'm present, and I'm conflicted at Hanford.

DR. ROBERTS: Cassano?

MEMBER CASSANO: I'm here. I have no conflicts.

DR. ROBERTS: Clawson?

MEMBER CLAWSON: Here. I'm conflicted at INL.

DR. ROBERTS: Frank?

MEMBER FRANK: I'm here. I'm conflicted at Pantex.

DR. ROBERTS: Kotelchuck?

MEMBER KOTELCHUCK: Here. No conflict.

DR. ROBERTS: Lockey?

DR. ROBERTS: I'm here. I'm conflicted at Oak Ridge, Portsmouth and Fernald.

DR. ROBERTS: Martinez?

MEMBER MARTINEZ: I'm here. I'm conflicted at Savannah River Site and Oak Ridge X-10.

DR. ROBERTS: Pompa?

MEMBER POMPA: I'm here. I'm conflicted at Pantex.

DR. ROBERTS: Roessler?

MEMBER ROESSLER: I'm here. I have no conflicts.

DR. ROBERTS: Valerio?

MEMBER VALERIO: I'm here. Conflicted all DOE sites in New Mexico.

DR. ROBERTS: Ziemer?

MEMBER ZIEMER: Here and conflicted at Oak Ridge X-10.

DR. ROBERTS: So, everyone's here. Next, if there's anyone participating virtually, either on Zoom or telephone, who's NIOSH staff, if you can, identify yourself.

MR. RUTHERFORD: Yeah, this is LaVon Rutherford. I am conflicted at Fernald.

DR. ROBERTS: Anyone else for NIOSH/DCAS? Okay. How about SC&A, anyone attending virtually?

MR. OSTROW: Steve Ostrow, no conflicts.

MS. BEHLING: Behling. No conflicts.

UNIDENTIFIED SPEAKER: (Indiscernible.)

DR. ROBERTS: I'm sorry, could you --

UNIDENTIFIED SPEAKER: (Indiscernible.)

DR. ROBERTS: I'm sorry, whoever just spoke, if you could repeat, we couldn't hear you.

MS. MANGEL: Amy Mangel. Conflicted at Pacific Northwest National Laboratory.

DR. ROBERTS: Okay, thank you.

MS. GOGLIOTTI: Rose Gogliotti, no conflicts.

DR. ROBERTS: Anyone else for SC&A? Anyone with HHS or contractors who are participating virtually? How about anyone with the departments, DOL, DOE, other departments?

And are there any members of the public who might be on the telephone or online who would like to register their attendance? Hearing none, I again thank you and welcome everyone. Let's go ahead and move further into the agenda. Again, please check your phone or Zoom, make sure you're on mute. If you don't have a mute button on your phone, press star six to mute. If you need to take yourself off, press star six again.

So, with that, I will turn the agenda over to Dr. Henry Anderson, who's our Board Chair, for the official welcome.

DR. ROBERTS: I want to welcome everybody to the 153rd meeting of the Advisory Board on Radiation and Worker Health. We're here in Augusta, Georgia. I want to welcome those who were able to make it through the travel challenges that occurred yesterday and start our meeting. And with that, I'll introduce Grady who will give us the program update.

NIOSH PROGRAM UPDATE

MR. CALHOUN: All right, thank you. Welcome everybody. Glad to be here. It's nice to have in-person meetings again. So, I'll go through these. This -- these were current as of the end of last month, but I do have at least one more update that's going to be -- we'll talk about here. And this is it. Contracts and staffing. As of last -- the end of last month, we had nothing new, but I'm happy to say that we did hire a new health physicist since these slides were made. And this is the first time in, I will bet, three years

that we are -- have all of our slots filled, so that's -- that's good news.

IT update. Basically, the same as I reported last time. We continue to process all cases manually, but we're able to keep up with everything. We're getting them in -- or we're getting them out as quick as we're getting them in, so that's good. And as I mentioned last time, we've kind of prioritized what we want to get working first. The site research database seems like that would be the most helpful to everybody, especially folks on the Board. Then we're going to move into like the SEC viewer, if you used to remember that. Seems so long ago. And then we also have the Board review system, which was always very helpful for us. So, and then ultimately NOCTS, so we've got a couple of parallel paths that we're working on all of these, and hopefully we'll get something in the coming months. But it's going to be -- it's going to be a long time.

We've been very active. Like, with this meeting, we're allowed to travel now. We're doing more in-person meetings. And so, these are some of the ones that we've completed. We completed an outreach meeting at the Hanford area in May. We completed an outreach event -- three of them, actually. I actually did those myself. It was out in the Navajo Nation. It was really nice to see a bunch of people that we really haven't ventured to that area very often. So, that was really nice to talk to those folks. We did that in June. It was hot. But it was -- it was nice, nice to talk to those guys. We have one scheduled for, I believe, today at Fernald -- Fernald/Mound areas, and then we have one in September that we're doing for Rocky Flats.

This is kind of just how we keep track internally of -- of how we're doing since the pause. And I can't get this little "you are screen sharing" off

the -- the -- the screen here, but basically what you'll see is that we had a big uptick in the number of cases and the age of cases right after the pause started in May of 2021. So, it's been more than two years since we've had this issue. So, we want all of those numbers to be down as low as we can. So, we're getting there. And the -- the greater than twelve months is creeping up a little bit, but those are being held up primarily because of technical basis documents for SEC sites that need to get revised. So, moving in the right direction still in general.

Record requests from the Department of Energy. Again, this doesn't mean that these are late. We have 198 outstanding; 14 of these are between 61 and 120 days old; five are between 121 and 180. I guess a lot of these are Rocky Flats and Pantex, and then one is greater than 180 days old. That's Albany Research Center.

This is the case status report. We've actually received 56,465 cases from DOL since the inception of this program. We've returned 54,323 to DOL. We've got about 1190 in-house right now for dose reconstruction, and 952 have been administratively closed by Department of Labor. 48,812 have been submitted to Department of Labor with a dose reconstruction. 1858 of those have been pulled by Department of Labor for dose reconstruction, and 3653 have been pulled for special exposure cohort considerations, because we don't do dose reconstructions pulled for special exposure cohorts or if it's one of the 22 cancers.

Probably -- probability of causation summary. Of the 48,812 DRs sent, about 73 percent of those are less than 50 percent, and 27 percent of those are greater than 50 percent. That just falls in line with how things

have been over the course of this program. Typically, 25 percent to 30 percent are 50 percent or greater, and the rest are below 50 percent. Of the 1190 cases that are active at NIOSH for dose reconstruction, 849 are in the dose reconstruction process, 280 were in the hands of the claimants to review, and then 61 cases we're preparing for dose reconstruction. That just means we're gathering the documentation that's necessary and making sure it's all there and reviewing it.

And that's all I got on that. So, any questions? Yes, ma'am?

MEMBER BEACH: Back -- back on -- back on slide six, you talked about the Albany Research Center being past 180 days.

MR. CALHOUN: Yes.

MEMBER BEACH: What's going on there?

MR. CALHOUN: I don't know. I'll try to find out. We have -- we have an ORAUT person here who's probably looking at that right now for us, and so, I'll get back to you here.

MEMBER BEACH: Okay.

MR. CALHOUN: Anyone else? All right. I'm going to stop sharing this and call up -- up the next presentation here.

UNIDENTIFIED SPEAKER: (Indiscernible.)

MR. CALHOUN: DOL, okay. So, all right. There we go. Frank Crawford are you on? Sorry. I'm trying to get this bar off of here. Frank Crawford, are you on, Department of Labor? We don't hear you if you are. Huh. All right. Well, I can go through these, or we can go to DOE and see if Frank comes on. What would you prefer?

UNIDENTIFIED SPEAKER: Either's fine. I mean, DOE (indiscernible).

MR. CALHOUN: Okay.

CHAIR ANDERSON: Let's --

MR. CALHOUN: I'll stop sharing, and I'll call up the DOE presentation. All right. I'm trying to move the silly bar again. There we go. Okay. Gina, we're ready for you.

DOE PROGRAM UPDATE

MS. GRIEGO-KELLEHER: You ready?

MR. CALHOUN: Yes, I am.

MS. GRIEGO-KELLEHER: It's not -- (indiscernible) changed. So, good morning. For those of you that don't know me, my name is Regina Grego-Kelleher. I am the program manager for the (indiscernible) program at DOE. I have been with this program since day one, since the late '90s, and was with the program until about 2010 when I left and then just recently came back in the last couple of years to help Greg out. So, I'm now managing the program.

And Grady, and we heard you talk about Albany. And so we'll take a look on that and see what's going on with that with that (indiscernible). That has always been the course (indiscernible) slow just because we have few things, but we'll jump on that and see what's going on.

Do I -- do move it or do you move it? What do you think?

MR. CALHOUN: No, I'll move it. Just let me know.

MS. GRIEGO-KELLEHER: Okay, (indiscernible). So, going (indiscernible) just going to give you a couple of updates as to what's going on with the program. And recently, we participated in several outreach

events. We did go to outreach events in New Mexico and Arizona. We actually had our -- our (indiscernible) Legacy Management (indiscernible) POC attend and present because they're much more familiar with the remediation and the mines and mills and DOE activity. And to my understanding, that went really well. They've been waiting to get a hold of an interpreter that spoke Navajo and were able to bring that interpreter to the meeting. So, (indiscernible) it was a very successful meeting. There's some good input and some recommendations going forward with respect to, you know, taking it out to some of the smaller towns because a lot of them don't really drive or can't get to these central locations to participate, so.

One of the other things we're doing is we're working on the MOU with Department of Labor right now. We'll be updating the NIOSH, but right now we're just trying to address some PII redaction policies within the MOU, and there were security clearances, that whole process has changed. And each agency is now required to obtain their own security clearances. But when it comes to DOE, we'll have reciprocity when it comes to the Q clearance, but the agency is responsible for obtaining that clearance where in the past DOE would actually run that process for Department of Labor.

Again, we have a POC workshop in August -- it's either 22nd and 23rd. And it's the first time our POCs are actually meeting in, like, at least 10-12 years. NIOSH and Department of Labor will be participating. Right now we have every site participating either virtually or in person. And we have about 50 on-site participants and about 50 that are participating virtually. So, this is going to be a very interactive workshop, and we want to be able to collaborate with labor and NIOSH into potential process or policy changes

just to make the program much more efficient and kind of fine tune relationships with labor in NIOSH. Since labor is now national versus district office oriented, we want our POCs to have a chance to hear from labor.

Also, one other thing we're working on is a federal register notice for clarifying statutory beryllium vendor language in that if you're a statutory beryllium vendor and you're a facility owned by that vendor, then you would be eligible under EEOICPA. There had been some confusion regarding (indiscernible), now it's (indiscernible) and some other facilities, whether or not they should be covered and which they are.

Okay, Grady, thanks.

Again, as -- as you know, you know, we're responsible for responding to Department of Labor and NIOSH when they make request for individual claims that's employment verification and exposure records. That information is usually uploaded to our SERT system, and then it's -- that's a means of communication with Department of Labor on claims. Also, as you know, we provide support assistance to the Department of Labor and NIOSH and Advisory Board on large-scale research projects or site characterization projects. And -- and the next -- the last thing is that we coordinated and work on a variety of the covered facility designations questions that might come up from the public. When those questions usually come up, we'll research with mainly NIOSH and then make any appropriate changes to the covered facility designation list.

Go ahead, Grady.

When it comes to individual records, again, it's important to note that, you know, claimants often worked at multiple DOE sites. They might have

worked for multiple contractors, subcontractors, and different jobs or divisions over a career. And so, this time, sometimes it can be challenging and somewhat slow the process down when you have individuals who have worked for multiple employers, even multiple sites. So, our sites do -- do, you know, try to get the responses to the Department Labor within 60 days, but in some cases, it might take a little bit more time.

And then another one of the other reasons to (indiscernible) records is that sometimes our -- our sites might have to go to different departments or off site, say, to a records center, so that might actually delay the response for records. And then, for example, I know that one of our sites, they have to go to like, 40 different places for response of records, which might include, depending on the time frame when the -- when the employee worked, they might have to pull hard copy records, microfiche, microfilm, databases. So, yeah, we just want to share with you it's not as easy as we wish it was to find records for our employees, but we do look in the various locations to find those records to be responsive.

Go ahead, Grady.

With respect to some of the large capture projects, we've got North -- we've got North -- PNNL, Pacific Northwest National Lab. We have Legacy Management with Los Alamos, Sandia, Nevada. These are some of our larger research data capture requests. And I do want to mention that Nevada is -- and Sandia and (indiscernible) two (indiscernible) Department of Labor, so they're updating their (indiscernible) database. I believe the (indiscernible) actually with NIOSH.

Okay, Grady.

Again, we were committed to providing our documents. We do our -- we have to do reviews, conduct reviews of those documents and we provide them to the Department of -- NIOSH and Labor. Oftentimes these records have to go through classification review, I want to say, so -- and then they'll have to come up to headquarters and say it's a report. I know the Advisory Board, they will draft reports, and those have to actually be coordinated here at headquarters for review.

Most of our review at the site level typically is about eight work days, but sometimes it can be shorter, and sometimes it can be a little bit longer. And then again, it's just a matter of how many pages that our sites are having to review and obviously, the time frame of those records, historically, what -- what year those records were produced might actually cause a bit of a delay.

Next.

Again, as I mentioned earlier, we do facility research. We do have a database of over 300 facilities, and we have updated that -- that database. So, if you haven't had a chance to look at the website, I would -- I would highly recommend going and looking at it. We now have an option to actually capture the data as an Excel spreadsheet and then print it, whereas in the past, you'd have to do a screenshot and print. So, we tried to make it a lot more user friendly. So, if you've not had a chance to look at that website, I recommend you do.

Go ahead, Grady.

And then the last couple of slides, those last slides are just talking about the former worker medical screening program, that's another program

that's within our -- within our office. We do work as a team with former worker medical screening program. It's independent. They do provide free screenings to all former workers at all DOE sites. Whether you're a federal, subcontractor, contractor, they have set it up to where if there's not an actual program within a particular city or an area, there are providers or -- that can actually perform screenings for -- for individuals. And then individuals are actually eligible for a rescreen every three years -- or on the third year, I should say. And then all of this information is provided to EEOICPA as requested. And one thing about the former worker medical screening program that's very unique in that, you know, these are occupational history or occupational medical professionals with knowledge of our operations at our sites, so that makes them uniquely qualified rather than, you know, outside providers or local city providers, because they really understand site operations. They do a very thorough occupational history questionnaire of these workers. And so, we -- we try to get, you know, all former workers to enroll in this program. So, it's very beneficial, not from -- not only from their health standpoint, but also if they need the information for a claimant worker, unfortunately, maybe a future claim, they have a file.

Okay, Grady.

A couple of the website links to the former worker program. There's brochures. Again, there's information on how to contact (indiscernible) workers. The brochure's -- if you're interset -- interested in downloading a brochure, please do and then we can make copies and hand them out if you would like to do that. Okay, Grady. Go ahead.

Questions?

MEMBER POMPA: Yes, I have a question. My name is David Pompa. Is DOE contacting the employees for verification of employment in case the records are missing?

MS. GRIEGO-KELLEHER: No. DOE office is not -- all -- all correspondence is managed through Department of Labor. So, we basically -- you know, we respond to requests made by labor. So, if there's missing records, that employee would need to coordinate with labor, and then labor may come back to DOE for some sort of supplemental request.

MEMBER POMPA: Okay, thank you.

MS. GRIEGO-KELLEHER: Yeah. And then one of the other things we recommend is that employees, you know, should let labor make the request for the records. I think a lot of times employees will be told they need to contact labor and request their records through Privacy Act Requests or FOIA. That's not necessary because labor makes the request of us and go through those records. So, I'm not suggesting that you can't, but again, it just might confuse the process a little bit because -- but we highly encourage you just to work with labor if you have any questions regarding your records. I know right now labor has you have the ability through labor's portals to actually look at the records that are provided to you. So, I hope that answers your question.

MR. CALHOUN: This is Grady. David, just another possible help with that is that when we do claimant interviews, we go over their employment verification. If there's a discrepancy noted, we will actually contact DOL and just to ask if there's anything that can be done.

UNIDENTIFIED SPEAKER: Hey, Gina, this is Josie. Do you

(indiscernible) --

UNIDENTIFIED SPEAKER: (Indiscernible), Grady?

UNIDENTIFIED SPEAKER: This is (indiscernible). Good morning, Gina.

MEMBER BEACH: Hey, I have a question on Santa Susanna. I know it wasn't in your list on -- on your slide five, but what's happening with records retrieval for Santa Susanna? Do you know anything?

MS. GRIEGO-KELLEHER: Do you mean from a -- from a request for an SEC, or, I mean, is it just in general for claims?

MEMBER BEACH: No, I understand it's been difficult to get in to get records, and I believe it's on the SEC. I might have read it on the DOL slides, but I'm not sure. Oh, Chuck's --

MS. GRIEGO-KELLEHER: Oh, I --

MEMBER BEACH: Okay, hang on. We got -- I think someone's coming up to answer. Thank you.

MR. NELSON: Hi, Josie. Chuck Nelson here. We're getting those records sent to us digitally, and they're actually supposed to wrap up in the next couple of months. So, as they come in, we're reviewing each of them, trying to resolve these outstanding SEC questions/issues.

UNIDENTIFIED SPEAKER: (Indiscernible.)

MS. GRIEGO-KELLEHER: And if you have -- if there any issues, I mean, we're reporting (indiscernible) communication NIOSH, and we'll try to jump on it if you run into any roadblocks.

MEMBER CLAWSON: Regina, this is Brad Clawson. You are -- mentioned earlier about the clearances and stuff. I just have a question on that because many of the Board Members here have clearances, and they're

coming up for review here in the next little while. Are you taking care of that, or is this going to be done through NIOSH?

MS. GRIEGO-KELLEHER: It's going to be done through NIOSH --

MEMBER CLAWSON: Okay.

MS. GRIEGO-KELLEHER: -- review, it would have to be done by NIOSH.

MEMBER CLAWSON: Okay.

MS. GRIEGO-KELLEHER: Unless you have -- unless you have a (indiscernible) with Department of Energy, so, you know, that's completely different. But if it's managed through CDC/NIOSH, then you're responsible for managing the clearance and the investigations. And then once that's

cleared, then we would just have reciprocity for the (indiscernible).

MEMBER CLAWSON: Okay. Because when -- when I retired from the INL, it was transferred to DOE headquarters. And so, that's why I was just kind of questioning that a little bit. I just want to make sure that that doesn't go delinquent.

MS. GRIEGO-KELLEHER: It should not. If you're on our rolls, I mean, (indiscernible) come up, but, you know, I can look into that because you are in -- a little bit more unique for you.

MEMBER CLAWSON: Okay.

MS. GRIEGO-KELLEHER: So, let me just double-check. But if you said -- if you are with the Department of Energy, your clearances should be managed with DOE, but let me -- let me find out since you're with the Board.

MEMBER CLAWSON: If you could, I'd greatly appreciate it. Thank

you.

MS. GRIEGO-KELLEHER: You're welcome.

CHAIR ANDERSON: For the Board Members, I just went through that because mine was canceled, but HHS does it, and you get top clearance from them, and then the Q gets passed over to DOE, and they require further interview information. So, --

MEMBER CLAWSON: Well, I see --

CHAIR ANDERSON: -- you can get access to the records through HHS, but for someone on DOE data, it's been problematic.

MEMBER CLAWSON: Yeah. Or I do have a Q clearance, I just want to make sure that --

CHAIR ANDERSON: You want to be sure that --

MEMBER CLAWSON: It doesn't go (indiscernible).

CHAIR ANDERSON: It hasn't -- and for me, HHS sent over voided. So, now we're going through the process again, so.

DR. TAULBEE: This is Tim Taulbee. Just in follow up, Gina's going to check on it for you, Brad, and if, in fact, yours doesn't need to be reinitiated (indiscernible), we can take care of that. But most of the other Board Members that did not start with DOE clearance, we initiated it, and that's our process it goes through. So, we'll just make sure that yours is (indiscernible). So, thank you for bringing that to our attention.

MEMBER CLAWSON: Yeah, because we've got several of us that are coming up for renewal, and we just want to make sure we don't drop it there (indiscernible). Josie's in the same role as me, so. Yeah.

DR. TAULBEE: Okay. Thank you.

CHAIR ANDERSON: (Indiscernible.) Gina, this is Henry Anderson. Question for you. You -- glad to see you've got the big workshop for the POCs coming up. Do you have an agenda for that? Is that open to the public or to Board Members here at all? Because we have new Board Members that this might be an opportunity to learn a little bit more about that process.

MS. GRIEGO-KELLEHER: Right now, it's just geared for labor and NIOSH and POCs that's working with it. Let me ask and find out what the bandwidth is and if -- if we're able to add more. I don't have any objection, but let me -- let me check with --

CHAIR ANDERSON: I don't --

MS. GRIEGO-KELLEHER: -- (indiscernible).

CHAIR ANDERSON: -- without knowing what the agenda is, we may look at that and say well, it's so part of your administrative activities that no one is interested. But if there is something on there that one of the Board Members would like to listen in on, we'd like to. If we have that opportunity, it would be nice.

MEMBER CLAWSON: Henry, --

MS. GRIEGO-KELLEHER: And I --

MEMBER CLAWSON: -- Regina, this is Brad.

MS. GRIEGO-KELLEHER: I -- I think there are good topics being we're talking process. So, you know, our POCs want to understand Department of Labor and not actually the process for review just so they have a better understanding for records or why certain records are important and then vice versa. Our sites talk about, you know, some their -- their processes

and some of their challenges in obtaining records just so that we're all communicating with one another. And then we're also just talking about records in general. There's -- there's guidance with the National Archives, you know, going electronic. You know, we're going to have discussions with our -- our records managers at headquarters to talk about legacy records and how we're going to manage those records. So, those are -- those are some of the topics.

MEMBER CLAWSON: Regina, this is Brad again. That -- that may be something interesting to us as Board Members because a lot of us do dive into the records and also especially like with Rocky Flats or whatever, where there's a lot of outstanding questions on the record process and stuff. I -- I would just throw it out to some of the Board group members and Board Members that may be interested in that.

MS. GRIEGO-KELLEHER: Well, and what I can do, Brad, I'm just thinking it might even be better to just tailor a presentation to the Board. If there are particular sites that you'd be interested in having a discussion with the -- with respect to their records process, we'd be happy to do that. I mean, we do that now. You know, we've actually done some decent employment verification webinars. We've had camper talk about their process. So, maybe that would -- I mean, tailor to some of the questions that you have and develop a -- some sort of a presentation. That might be better --

MEMBER CLAWSON: Okay. Well, we can -- we can kind of look into that. What's ever the best. One of the things is also education -- educating us as the Board of how this process really works and go into -- and then

there's numerous sites, Santa Susana, for example, or Pinellas, any of these of where the -- where and how are we searching for these files? It seems like we've been -- we've been -- there is really no rhyme or reason to where some of the files end up. But it would -- it may be better to tailor it towards the Board inquiry or what -- but it is -- it is interesting to us, and we want to be able to better understand the process.

MS. GRIEGO-KELLEHER: Sure, and let's take that approach. I think that would probably be better. When I'm thinking about it, I mean, the POC workshop is the first time we've met in like ten years. I don't want to temper any kind of discussion.

CHAIR ANDERSON: Yeah. And that's what I am looking back --

MS. GRIEGO-KELLEHER: Yeah, because I -- I just -- I just want them to be able to feel comfortable about it. And so, maybe it might just be some wild questions. I just don't want anybody to misinterpret. So, maybe it's just better if we just set -- you know, set up some time and come up with an agenda, and we can pull some sites together for a presentation.

MEMBER CLAWSON: Thank you.

CHAIR ANDERSON: Other questions? Any of the Board Members on the phone?

MEMBER ZIEMER: Henry, this is Ziemer. I -- I'd just like to add a comment to that, if I may. I -- I -- I think I agree with what Regina's suggesting. I don't think we would want in this POC meeting to have those folks sort of inhibited (indiscernible) monitoring how -- how they're going about their process but let them work those things out and then a tailored presentation to the Board, I think, would be very beneficial at some point.

So, I like that suggestion a lot.

CHAIR ANDERSON: Good. Put that on our Board work session list. Any other questions?

MS. GRIEGO-KELLEHER: I was going to say we could even just do it in parallel, so as you're researching a particular site, maybe it's just getting that organization to, you know -- to talk you through, you know, where these records are located to give a better understanding. I know Pinellas has been a challenge, so that might be worth having, you know, (indiscernible) discuss Pinellas. That's a -- that's just a suggestion.

MEMBER CLAWSON: Regina, this is Brad. And that's -- I agree with you 100 percent. I'm just -- you know, I'm trying to understand the whole records issue. You come from where my world was and we had -- we knew our records were very -- right there, everything was there. And now all of a sudden -- and I know because of these sites closing and stuff like that, they've ended up going to different areas. But I'm just trying to figure out the whole DOE's process of records, storage, and management. I do (indiscernible), but this -- this may be better to kind of tailor it towards the Board's outlook and stuff like that. But I do appreciate your help.

MS. GRIEGO-KELLEHER: Sure, not a problem. You know, and just remember too, with respect to records, particularly contractor records, it wasn't until within the last ten years that we had a year clause, you know, issued, you know, actually added to all the contracts that there's an ownership of records clause, so when they leave, they have to turn over those records to the Department of Energy. In the past, we did not have that. So, it's going to be a mess at site, you know, when contractors left.

Some of them (indiscernible) provide (indiscernible) some of them destroyed them based on state schedules. So, we really didn't have control of those records until this program was implemented. Then we, you know, put policy in place so that we actually have control of those records. You know -- you know, EEOICPA program, you know, helped us even though it was not, you know, set up for EEOICPA. In the end, it really did help EEOICPA, because it made sure that we did, you know, sites didn't destroy, you know, (indiscernible) records and those have been very useful for this program.

MEMBER CLAWSON: Very true. Thank you for pointing that out.

MEMBER MARTINEZ: This -- this is Nicole. Can you-all all hear me?

CHAIR ANDERSON: Yes.

MS. GRIEGO-KELLEHER: Yes.

MEMBER MARTINEZ: Okay, great. I just wanted to say I'm one of the newer Board Members, and I agree with what's been said. I think it would be very helpful to have a discussion of the record, like maybe an overview tailored to the Board, as they said. And then I wouldn't want to create more work, but perhaps as any questions come up, maybe we could have a refresher training for, like, site specific, how records are managed, you know, kind of specific to a site, maybe that would be helpful.

MS. GRIEGO-KELLEHER: Sure. And every site is different, so you're right. It's not, you know, one size fits all (indiscernible), so I would -- I would recommend target several sites -- a few sites at a time.

MEMBER CLAWSON: Yeah, Regina, that would -- that would probably be the best, because you -- you hit the nail on the head when you said each site is totally different. Because I'm thinking of Pantex versus Kansas City

versus Pinellas versus Savannah River, whatever, and every one of them is -- is so much different.

MS. GRIEGO-KELLEHER: Okay. Well, we'll take a different action on them. Just let me know who I need to coordinate with and, you know, (indiscernible) a -- the plan.

CHAIR ANDERSON: Yeah, we'll organize that to Rashaun, so that -- that will be who your contact person who'll be -- will follow up, and we all hear about the records, but we don't necessarily fully understand the process. Of course, each one is different, as you say, so if we kind of pick some that we're delving into one at a time, then I think it would be helpful.

Any other questions? And I didn't see any other names pop up, but DOL do we have --

MR. CALHOUN: Yeah, we do. I contacted Chris on the phone here, so I'm going to switch to his presentation.

CHAIR ANDERSON: Oh, good. Thank you.

MR. CALHOUN: He said he's there --

MS. GRIEGO-KELLEHER: Thanks, everybody. Appreciate the time.

MR. CALHOUN: Thanks, Regina.

CHAIR ANDERSON: Thanks, Regina.

MS. GRIEGO-KELLEHER: Thank you.

MR. CALHOUN: All right. Still trying to make this bar go away. It's always a challenge. There we go. Okay, Chris, can you hear us? And I don't know what the HP means. That thing's got to go away, too. All right. Okay, Chris, go ahead. Can you see us, and can you hear us? We can't hear you. Chris, are you on mute? Rashaun says it looks like you're on

mute. I just heard something there. Chris, are you there? Chris? All right. Maybe we'll try again.

Who's next?

CHAIR ANDERSON: Tim.

MR. CALHOUN: Tim, okay.

CHAIR ANDERSON: Tim is next, yeah.

MR. CALHOUN: All right, Chris. Try again.

CHAIR ANDERSON: Tim, I want you to know I've always used the IREP, and then I've forgotten what the initials are for, so I (indiscernible).

MEMBER CLAWSON: I'm not hearing Tim either.

MR. CALHOUN: No, he's not --

CHAIR ANDERSON: I'm not either.

MR. CALHOUN: I'm still trying to get the slides up there. Okay. Go ahead with the (indiscernible) now.

IREP PROGRAM UPDATE

DR. TAULBEE: Okay. Thank you. Thank you, Dr. Anderson and Grady for getting it set up. So, I'm going to give an update on the Interactive RadioEpidemiologic Program, or IREP. Although it makes --

UNIDENTIFIED SPEAKER: Just watch that.

DR. TAULBEE: Oh, wow. Could be interesting here. Before I get going here, though, I want to acknowledge Daniel Stancescu, our statistician did this work. The main reason I'm giving the presentation is that Daniel is participating in more procedural type-questions than statistical-type questions from you all. But hopefully, Daniel's online in case you guys have

some -- some of the stats questions. But anyway, Daniel did this really incredible work.

To give a preview of the -- of what this update is, we're not proposing to change the probability. We're proposing to change probability causation procedure, not the cancer risk models, nor any dose reconstructions, okay. I just want to start out with that to -- so you've got some understanding. What this update will be doing is to correct a slight negative bias in IREP that was observed in some claims and thus generally increase the probability of case -- of causation slightly for claims that are close to the 50 percent line.

Updated -- the update will ensure that no claims are being incorrectly denied compensation when the probability causation is close to 50 percent. And the update likely only impacts a few claims. Right now, two to four is our current estimate, and these would be claims greater than 49 1/2 percent type of scenario.

So, with that, let me get into an overview here. I'm going to go through the background of what the probability causation is. This is kind of a review for folks to understand what it is we're doing, talk a little bit about the quantile computational methods, and then potential computational impact on claims and then what this new procedure is and the expected programmatic impact.

All right. So, just a refresher here. These background slides were presented back in December to the -- during the new Board Member orientation. And it's just a reminder that the probability causation rule is 42 CFR 81. It's the guidelines for determining probability causation under the

Energy Employees Occupational Illness Compensation Program Act of 2000. And what this rule promulgated -- it does is it promulgates the at least as likely as not standard. And that is, is there at least a 50-50 chance that a worker's cancer was caused by occupational radiation exposure rather than by something else. And what we mean by that -- by the way, probability causation is frequently abbreviated as PC or PoC. It means all the same thing, okay. It refers to the proportion of disease in a given population that would not have occurred absent the exposure of interest. We calculate it by taking the radiation risk, which is the risk an individual's cancer was caused due only to occupational radiation exposure and divide that by the RadRisk plus the baseline risk. The baseline risk is the risk of cancer from all other sources. That's how the probability of causation is calculated.

And what we do in IREP is we do sampling from this. So, you've got the cancer risk models and you've got our radiation dose reconstructions, and both of them have uncertainty. And so, from that, we are taking samples and we develop and calculate this probability of causation distribution, which is what you see on the right there. Okay. Now, under EEOICPA requires the calculation of the PC to be expressed as percentage. And so, a PC of 0.5 when you look at that previous equation is expressed as 50 percent. So, the at least as likely is not standard means a claim is compensable if the probability of causation is greater to or equal to 50 percent at the upper 99th percent confidence interval or credibility limit of the probability of causation as specified in the rule 42 CFR 81.2. The upper 99th percentile of the PC is calculated within the NIOSH-IREP software program. Okay.

So, let's look at an example here. This would be a male, age 20 at first exposure. This would be an exposure to one rem of high energy photons greater than 250 keV for 30 years. So, their total cumulative dose would be 30 rem in this particular case, all right. And this would be an individual who had been diagnosed with liver cancer at age 65. So, this is just an example. And in this particular case, I did 10,000 simulations, PC simulations, okay. And the median probability of causation, the most likely probability causation is 20.3 percent. Okay. That's where 50 percent of the -- 50 percent of the values are below 20 percent and 50 percent are greater than 20 percent. The 95th percentile is 46.8 percent. Okay. Under this program, we use the 99th percentile, and that is 58.4. So, in this particular case, this individual would be compensable. All right. That's how we calculate the PC. What you can see from this frequency histogram is that when you get out to this tail, there's very few PC values out there, and this is where there can be changes, shifts in this tail of this distribution. Okay.

So, one of the things I pointed out in December is that NIOSH may periodically revise NIOSH-IREP. And some of the ways we might revise IREP is we may add, modify, or replace cancer risk models. And we've done that in the past. We've added an IH lung cancer model, we have added CLL. And in going through that, we discussed that with the Board, went out to public comment, federal registry notice. And so, that's one of the things we've done with the cancer risk models.

Another way that we may modify NIOSH-IREP is improving modeling uncertainty, and that's what I'm going to be talking about here today. And the final one is improving functionality and user interface of NIOSH-IREP.

Now, when we're making a substantive -- substantive change to NIOSH-IREP, we do notify the Advisory Board for review in addressing recommendations from the Board before completing. We don't consider this to be a substantive change that I'm proposing here today. All right. So, this is -- some of our precedent from that is in the past when we went from 2000 iterations to the 30 runs at 10,000, for example. That wasn't considered substantive change, and this is on that same general order.

All right. So, the quantile computation methods. One of the things that Daniel found and came to me and talked about is that back in the -- if you look at a paper, Hyndman and Fan in 1996, they presented nine sample quantile definitions with the standardized -- with the goal of standardization. By quantile definitions, I mean, this is the 99th percentile is a quantile, okay, that is a value that is calculated. Okay. What surprised me was currently there's no standard definition of a percentile. However, there's multiple definitions currently in use. This was a bit shocking to me that the probabilistic modeling and risk analysis software packages, such as Crystal Ball that we've used in the past, @Risk that we currently use, Analytica that IREP uses and Model Risk, which is a Vose software used in dose reconstructions had different methods implemented to compute percentiles.

Okay. Statistical software packages, such as SAS and R, have multiple methods available within their packages, and they have one as their default. And so, like I said, this was kind of surprising. Here's a kind of brief overview. Here's seven of the nine of them, and I'm not going to go through them all in detail here, but the first one is nearest rank, it's the inverse of the empirical cumulative distribution function SAS uses. It's similar to type

one, but they use averaging discontinuities. We can see that @Risk is using linear interpolation of the empirical distribution function. We go down to the bottom where R and Analytica are using linear interpolation of the modes of the -- and that is the way of order of statistics of the uniform distribution from zero to one. So, they're all different, which is quite interesting.

So, one of the things Daniel did was he looked at a simple lognormal distribution, the geometric mean of 3, with a geometric standard deviation of 6. So, this is a lognormal distribution of the long tail. And the theoretical 99th percentile is 193.808. Okay. And he looked at two different methods, random Latin hypercube and median Latin hypercube. We're just going to focus on the random here. But in small sample sizes -- so, you've got this lognormal distribution. The Monte Carlo, you go through, and you pull your samples, and you pull 2000 samples, and you calculate what is the 99 percentile. And then you do that again and again and again and again. And what you end up with is a distribution of values. And with the -- the box plots here that you see, the red, these are box plots. So, the area within the box is the -- the red diamond there is the average value. The 25th percent value is the bottom of that red box. The 75th percent value is the upper part of that box. And what you see here is that the rank order of @Risk, Analytica are all slightly lower, Excel and Vose are slightly higher, and SAS is right there in the middle.

As you increase the sample size from 2000 iterations to 5000 iterations, they all begin to shrink. Okay. They all become -- become more certain. As we go to sample sizes of 10,000 and 20,000, what you see is they're all converging. They're all converging on the true value. Okay. So,

that is what (indiscernible) -- a little hint here, that is what we're proposing to do here with this update.

When you look at it on a different type of scale, a different method, and this is just plotted so that you can see the increase in number of iterations across the bottom and the relative bias there on the Y axis. And what you'll see is when you get out to 2000 -- or 20,000 iterations and even out to 50,000, they're all converging on the same value regardless of how these were initially calculated. These calculations become significant when you're using low numbers of iterations. When you're using large number of iterations, they -- they all come to the same value, so it doesn't matter. Okay. It's only when you're doing small sample sizes.

So, for a low number of iterations, small sample size, the relative bias can be 1 to 2 percent for an individual type of distribution to show. The type-two methods, SAS appears to be the least impacted by this sample size issue. @Risk and Analytica, which is what IREP uses, appear to have a negative bias at these small samples, and Excel and Vose appear to have a positive bias at these small samples. But all methods are converging at the same value as the sample size increases. Okay.

So, how does this potentially impact claims? What's the potential impact here? IREP uses Analytica's statistical engine. It can result in a negative bias at this 99 percentile when there are small sample sizes. Okay. The bias is more pronounced when there's a large dose uncertainty, so we don't see this every -- in every claim. It's when there's larger uncertainty. The dose -- or a large number of IREP input exposures. These can translate into a probability causation distribution with a longer tail and a larger

distance between PC realizations, okay, and that's where this calculation begins to play a role. Again, as you increase your sample size, this is diminished and they're all converging (indiscernible), and this negative bias goes away.

So, looking at a particular claim here, this is one that's close to the 50th percentile and for 2000 iterations, the PC is 50.41. And as you all know, whenever we have claims between 45 and 52 percent, we don't use 2000 iterations; we use 30 runs at 10,000 iterations. And so, a single 10,000 iteration is 49.66. A single 20,000 iterations 49.81. A single 30,0000, is 49.99. And this varies depending upon the random number seeds. Our overall goal here is to improve the modeling of certainty at the 99th percentile.

So, if you look at the same plan, and I want to focus on the very first column on the left. This sample size is 10,000 iterations, and set one is a set of 30 random seeds. So, each of these blue dots in that first column of data is a different PC value for that particular random number set. All right -- or random number value. When you take the average of those 30 that we currently do, that's what -- when you get that red dot that's large there in the center, that's the average value. But here you can see the range. The range is from 48 percent PC up to about 50.5 percent number one. So, it's a very large range when we're doing 30 runs at 10,000. Sorry.

The -- if we increase that sample size to 20,000, what you see is that range shrinks, okay, and it's shrinking now down to a range of about 49 to a little over -- well, a little less than 49 to 51. So, instead of a range of 30 percentage points, you're down to 2 percentage points here roughly. And

then when you go all the way out to 200,000 iterations, now it's getting much more precise, and you're seeing this range coming down to within a percent, and the average values are all very stable. Okay.

Another way to look at this is to look at the confidence interval of about the 99th percent PC. Okay. So, this is the 95th percent confidence interval. What you're seeing here is not air bars on this. This is the -- the 95th percent confidence interval that we believe the true PC value is. We're 95 percent sure it falls within this range. That's what this is. And it's just a different way of describing what I showed on the previous graph. And here you can see the scale has changed quite a bit here. And when you look at the 20,000 samples -- sample size of 20,000 there, what you're looking at is now that 95 percent confidence interval is now only about a half a percent. Okay. The -- the observed values are much larger, but the 95 percent confidence range is smaller because you do end up occasionally getting some things on tails, but 95 percent of the time it's going to be in this range. All right. So, what are we proposing? Current IREP version 5.9, the maximum number of iterations is 10,000. All right. The new IREP version 6.0, we're going to be increasing that to 20,000. The current IREP EE, which is the Enterprise edition, this is what we use to do the average 30 runs at 10,000 iterations of the final PC. This is the program that we use. The new version of IREP EE version 6 will have the capability being 30 or 300 runs. That's 20,000-plus iterations.

Okay. So, the new procedure that we're proposing here is for claims less than 45 percent to greater than 52 percent. So, this is less than 45, greater than 52. We currently do 2000 iterations in IREP and that's it. What

we're proposing to do is do 20,000 now. So, instead of that large distribution, we're shrinking that distribution down to more certainty. This will also get rid of that slight negative bias that we have and have a more certain value of that PC value. So, that's change number one.

Number two, 45 to 52 percent claims. Currently we do 30 runs at 10,000 iterations. We're going to do 30 runs at 20,000 iterations. Okay. So, it's actually just a small change for that middle link in there. However, for claims 49 1/2 to 50.5 percent, currently we just do 30 runs at 10,000, and what we're proposing to do is 30 run -- or 300 runs at the optimal number of iterations, which would be 20,000 to 70,000-plus.

So, why are we looking to do this. If you look at that 95 percent confidence interval of the 20,000 iterations, and again, that second row there, what we're looking at is that when the claim, that average value is greater than 49 1/2 or less than 50.5, when that confidence interval is that wide that you see there, then we're going to jump over to the far right here of this particular graph, and we're going to do 300 runs at 20,000-plus iterations. It's similar to the 300 runs on the far left side. It's actually 30 runs at 200,000. That's similar to the 300 runs at 20,000. Okay. That's -- they're both about 6 million iterations is how this goes.

And so, what we're trying to do is we're trying to shrink that confidence interval to make sure we make the right decision here. Now, we don't have many claims that fall within (indiscernible) those who do DR -- DR review subcommittee. We just don't have many that are in that very close to 50 percentile range at this time. What we're going to be doing with this range, 49 1/2 to 50.5 percent, is we're going to be using a new tool.

New tool evaluates the width of that confidence interval based upon the individual claim uncertainty distributions. We call it the IREP predictive tool. It'll be run by NIOSH and ORAUT to determine the optimal number of iterations. What this tool is going to be doing -- what it does in the background is it takes -- it conducts 300 runs using only 1000 iterations. And so, you've got a very large confidence interval, but it gets an idea of how many iterations we would need in order to shrink it to less than 0.1. And when you do this through a power function, this is where the statistics play a role in evaluating multiple claims to develop this. The final PC then would be the average of 300 runs at its optimal number of iterations. What's the expected programmatic impact? The overall IREP 6.0 should have a really minimal programmatic impact. Greater position in the PC value will be achieved. The probability of causation runtimes will increase because of the number of iterations. But this really isn't that significant, especially when you consider computer power changes over time. When this program started in 2001 time frame, it took a few minutes to run some of these IREP runs on the computers of 2001 vintage. Over the past 20 years computers have gotten a lot faster to where those same runs now take seconds to run. By increasing from 2000 to 20,000, we're going to go back to taking -- it's going to take a few minutes. It's not going to be a huge impact from that standpoint.

So, the other point here is relatively few claims have PCs between 49 1/2 and 50.5 percent. When you go through this. Our preliminary evaluation of claims -- this is using 2019 data before our IT kind of shut down or transition began -- using that particular data set, we're estimating

two to four claims may now exceed 50 percent. So, and these are all ones that are in that tight window.

Considering programmatically, we've done over 50,000 dose reconstructions, --

(Whereupon, an unidentified speakers speaks with Dr. Taulbee off the record.)

DR. TAULBEE: Oh, okay. I'm almost finished. Can I go --

UNIDENTIFIED SPEAKER: Sure.

DR. TAULBEE: Great. Because I may answer your question.

DR. TAULBEE: Considering programmatically we've done over 50,000 claims, two to four claims is .008 percent that we may have underestimated here. So, it's very small fraction.

Other expected in -- expected programmatic impacts. Let's see... I'm sorry. Okay. We will be initiating a PER from this program evaluation report. That will be initiated once we implement IREP 6.0. However, it's going to take some time due to our current, like I said, our current IT constraints. We're having to work with our contractor a lot to query claims, and we want to do a lot of this work in batch-type processes. We've got to (indiscernible) not tying up the time -- server time during the days.

It's important to note dose reconstructions do not have to be redone. We're not going to be redoing any dose reconstructions. This is purely a PC calculation of already completed claims, already completed dose reconstructions. Because it's a PER, I fully expect the subcommittee on procedure and review will likely want to review this. And part of their tasking and part of what they do is they look at what the change was, they

look at what initiated the change and those methodologies, and evaluate, you know, what to do from that standpoint, whether the subcommittee agrees. Our current targeted implementation is next month. That was when I wrote these slides, but now there are some difficulties with IREP in the ECP that we worked out. I hope it can be worked out in the next week, but that may slip a month or so.

So, in summary, we're proposing to change the probability cause -- causation procedure, not the cancer risk model nor any dose reconstructions. Increasing the number of iterations in IREP will correct the slight negative bias that you see, and that is observed for some claims and generally increasing the probability of causation. Increasing the number of iterations will also improve the modeling uncertainty by decreasing the width of that confidence interval, thus ensuring claims close to 50 percent will be proper -- properly determined.

And with that, I'll be happy to -- oh, sorry. Here's a list of references that Daniel developed. These are very large reports. We are working to get them out on the web to you all, but they're not there yet. We will get them into the ECP so you guys can review them in their -- their current forms. At this time, there's a lot of 508 work that has to be done, 508 compliance work that has to be done.

The last one, last bullet there is the executive summary that Daniel did kind of summarizing the top three, that's the (indiscernible) we recommend that you read. It's about 40 pages, this executive summary. So, it's pretty long. These others are several hundred pages of information, and I'm not sure you want to go through all of those. I'm sure the subcommittee

probably will when we get the PER. So, and with that, I'll be happy to answer any questions. You said Dr. Cassano has a question?

MEMBER CASSANO: Oh, I'm sorry. I had a coughing fit right in the middle of my question. I think you may have answered this on the slide, but I'm not quite sure. Are you going to automatically review all of those claims within the -- between 49 and 5 -- .5 and 50 that were denied using the old system, or how will claimants who were denied be made aware that there is a change, and they -- they may have a little better chance of actually getting their claim approved?

DR. TAULBEE: Yes. All of the claims between the 45 and 50 percent will be reevaluated that we have done date. And I use 50 percent here because if they were compensated at 50.5 already, we're not going to do anything with those. But if they are --

MEMBER CASSANO: (Indiscernible.)

DR. TAULBEE: -- less than 50 percent and were denied, yes, we are going to be --

MEMBER CASSANO: Oh, I'm sorry, now I'm --

DR. TAULBEE: -- reevaluating those --

MEMBER CASSANO: -- now I see it. I don't know why I didn't see it. Actually, I wrote it yesterday. Whatever. Thank you.

DR. TAULBEE: Dr. Martinez, go ahead.

MEMBER MARTINEZ: Hey, thank you. This is super interesting. Just to make sure I understand, you have the radiation risk distribution and then you have the baseline risk distribution and then the Monte Carlo to get the probability -- probability of causation distribution and then the percentile

from there, right?

DR. TAULBEE: That is correct.

MEMBER MARTINEZ: Okay. And so, then when you're talking about iterations, that's basically your number of Monte Carlo samples?

DR. TAULBEE: That is correct.

MEMBER MARTINEZ: Okay, great. So, a couple of questions. One is so, you're doing different runs with the same number of iterations. And so, presumably that's because the random number of seeds would be different for each run?

DR. TAULBEE: That is correct. Yes.

MEMBER MARTINEZ: Okay. And so, how different are your runs typically?

DR. TAULBEE: Okay. I will be flipping to that slide here. What you see on this particular slide is --

MEMBER MARTINEZ: So, each of those is a run?

DR. TAULBEE: Each one of those is a run, yes, with a different --

MEMBER MARTINEZ: Oh, that's --

DR. TAULBEE: -- randoms.

MEMBER MARTINEZ: -- interesting. And so, then -- great. That was my question. I wasn't sure if -- that that's what this was. So great, thank you. And then you kind of answered this, but maybe in more detail. This is -- I guess it's not a key question. Like, why not just do a million iterations, right? If -- (indiscernible) everything a million times, is that the IT restrictions?

DR. TAULBEE: It takes --

MEMBER MARTINEZ: (Indiscernible) IT (indiscernible)?

DR. TAULBEE: It takes significant time to do some of these. And to give an example, like, to establish the confidence interval, that's the dotted red lines across this particular graph, this --

MEMBER MARTINEZ: Uh-huh.

DR. TAULBEE: -- would be 5 million iterations. This took about a day and a

half of computer runtime, just to --

MEMBER MARTINEZ: So, you-all have --

DR. TAULBEE: -- (indiscernible) --

MEMBER MARTINEZ: -- access to a supercomputer? Can we advocate for you to get a supercomputer?

DR. TAULBEE: Well, considering we are doing several hundred claims a month, yeah, it would take tremendous computing power to do that.

MEMBER MARTINEZ: Okay, so -- so, ultimately, it's a computing power limitation, and so you're trying to optimize your resources?

DR. TAULBEE: That is correct, yes. And that's --

MEMBER MARTINEZ: Okay.

DR. TAULBEE: That's one of the main reasons for the IREP predictive tool is that not all of these have long tails associated with them that are problematic from this standpoint.

MEMBER MARTINEZ: Oh. I see.

DR. TAULBEE: And so, --

MEMBER MARTINEZ: Okay.

DR. TAULBEE: -- the IREP predictive tool might come back and say,

yeah, 20,000 is fine. And then another one that does have a longer tail, no, we've got to do 50,000 on this one instead of taking 20 to 30 minutes for that particular claim, it's going to take an hour or so or 2 hours, --

MEMBER MARTINEZ: Okay.

DR. TAULBEE: -- something along those lines.

MEMBER MARTINEZ: And then I saw (indiscernible) IREP (indiscernible) open then you can go and use it, which is cool. And so, when you're updating this, you just have to update kind of the guts behind it, so that -- I mean, my -- my question is motivated by what you all are doing. You want it to be the same thing that's public facing on the web, right?

DR. TAULBEE: That is correct. It will be the same as public facing. Yes.

MEMBER MARTINEZ: Great. Okay. Thank you.

DR. TAULBEE: Dr. Frank, go ahead.

MEMBER FRANK: Thank you. I appreciated the presentation today. And I understand the 50 percent rule. I'm just curious -- this is a very sort of simplistic kind of question. If you've got somebody who comes in at 49.75.8 and you're dealing with dose reconstructions, which have some variability and, you know, inaccuracies, is there any thought to just round that up to 50? I mean, again, the theory is the benefits should go to the worker. Is there any -- if you're getting that close to 49.75, can't you just say rounding off at 50 and give them their benefit?

DR. TAULBEE: Those are discussions that are currently happening internally. Yes.

MEMBER ZIEMER: Could I insert here?

DR. TAULBEE: Yeah.

MEMBER ZIEMER: Arthur, --

MEMBER FRANK: Yeah.

MEMBER ZIEMER: -- you're advocating what I've been advocating for many, many years. It's -- it's much easier to do it than 50,000 iterations. We don't know the value for four-digit figures. You know, 49.75 percent, I -- I --rounding would have made a lot of sense really. And I support this new approach that's being advocated (indiscernible). It gets very close to what you'd get if you round it anyway, so --

MEMBER FRANK: Yeah, but it's a lot of work, it's a lot of computer time.

MEMBER ZIEMER: Oh, I -- I understand that.

MEMBER FRANK: The best way to -- decision to be look, if it's that close, given the other uncertainties in the system, why not just say, you know, if you get that close, you're in?

MEMBER ZIEMER: Well, let me add one other comment, and I know Dave Kotelchuck had his hand up before I did, but Tim, you can clarify. I think the official determination is made by labor, is it not?

DR. TAULBEE: That is correct.

MEMBER ZIEMER: -- know what the number's going to be, but if there's any roundings to be done, I think -- doesn't labor really have to do it?

DR. TAULBEE: Correct. Well, labor makes the final determination, so you are correct there, Dr. Ziemer.

MEMBER ZIEMER: I -- I suppose if NIOSH heavily advocated for that,

that could happen. Anyway, in any event, we understand --

UNIDENTIFIED SPEAKER: I appreciate that and all --

MEMBER ZIEMER: -- we understand a lot of uncertainties are built into it beyond what statistical uncertainties are here. But that as it's made right now, this is an improved approach.

MEMBER FRANK: You can count me as a supporter of your viewpoint that you would advocate because this -- this makes sense to me. You know, it would save time, effort, and -- and not require so much computer effort.

UNIDENTIFIED SPEAKER: Dr. Kotelchuck.

DR. TAULBEE: Thank you. Dr. Kotelchuck?

UNIDENTIFIED SPEAKER: He's on mute.

DR. TAULBEE: You're on mute, Dr. Kotelchuck.

MEMBER KOTELCHUCK: Yes. You can hear me now?

DR. TAULBEE: Yes, sir, go ahead.

MEMBER KOTELCHUCK: Good. I -- I say I'll come back to what (indiscernible), but first, let me merely welcome this approach and this modification. It's essentially, as I see it, taking advantage of the increased power of computation in real time. And far from wishing -- not wishing that there was a computer that could do, you know, six million iterations for everybody, looking at real situations, we can actually make decisions using the computer power on these ones that are really close to 50 percent. Obviously, in the dose reconstruction review subcommittee, we've been looking as -- as -- as -- as has been noted, we've been looking at the blinds. I am really curious to try these -- these new proposed methods on the -- on the blinds that we have. We've had -- we've done 50 blinds. There are --

and moved each time, try to move closer and closer to folks that are at 49.5, 50.2. And we've only -- we've had three -- three situations where the compensation decision differed out of the 50, and those were really right up at the edge. So, this will help resolve those problems and really essentially say you couldn't -- you really couldn't do better with this if I -- and -- and -- we couldn't do better than this if we re-ran it, because we're running it really (indiscernible). So, I'm really pleased with it. Thank you, Dr. Taulbee and thank you, Dr. Stancescu, for looking at this.

Now, I can't say that I understand all the details, because I don't. The -- I don't know what the hypercubes are in this slide, that I trust from folks who know more about computation and statistics than I do (indiscernible).

And getting back to Arthur Frank's comment. Why don't we just do it instead of worrying with that, just take the few between 45 and 50 and just say oh, that's okay (indiscernible) fine, Arthur. We thought about this once before. If we choose to say if you're over 45 percent, what the heck, we're not doing it. But if we said what the heck, we'll -- we'll just say that this is 50 percent, this -- this is compensable. Then what happens when we get to somebody who has a PC of 44.8 percent? Do we say well, you didn't hit 45 percent, or do you say, well, we're close and was that -- I think you can't say that in fairness to everybody. That is, if you do any cut offs at all, there has to be some decision point, and it is -- it may seem at a personal level regrettable when somebody is so close to, in this question, 50, but on the other hand, whatever number you choose, there will have to be some who are compensated and some who are not.

I leave it up to Congress, which is not our responsibility, to think about

how laws might change. But it seems to me, as long as we're doing dose reconstructions, we do have to have a cut off line. Whether we call it 45 percent or 50 percent. It's got to be a line such that you're above it or you're below it. And what is so fine about this new approach is that we're going to get as -- we're going to get so close to the line that we have really 99 percent confidence that the number is below 50 or above.

MEMBER FRANK: I -- I understand that. This is Arthur, but, you know, I wouldn't be advocating for 45. But if you're going to say 50, you know, simple mathematics, you know, if you round off to the nearest whole number, you could just say anything about 49.51 gets rounded up to 50 and that's, you know -- and then, you know, everybody understands rounding to the next number, 49.49, it gets rounded down to 49, you don't make it. You could do that fairly simply and save a lot of time and effort.

MEMBER KOTELCHUCK: Well, we'll then just -- that would just set the limit at 48.9, and then we have to scratch our heads and decide what to do. I can see the (indiscernible) and that's -- spiritually, I -- I -- I -- I support that approach, but actually in terms of trying to make a decision about compensation for individuals who are -- who have cancer and things might be caused by their work, I think we have to have -- the line has to be sharp so that it is fair to all. The same rule for all.

MEMBER FRANK: How -- how many decimal points? That's -- that becomes a question. If you just use whole numbers, 50 or more, you know, under 50 and you round up to the next number, wherever the number comes out, I mean, that -- that's still hard and fast. Just a thought.

MEMBER KOTELCHUCK: Okay.

CHAIR ANDERSON: Now that we've had that rousing discussion, this is something that's been talked over for the last 20 years. For the new Board Members that are coming on, this was one of the discussions we had at the very beginning. As it was explained to me that in the law, it's 50 right there. I do applaud the opportunity that they're fine tuning the pen on this.

But Tim, I need you to explain to me, this is really only going to affect the ones that are 49.75 and up.

DR. TAULBEE: Yes, for the most part. And the reason I say for the most part is we don't know until we complete the entire PER. Okay.

CHAIR ANDERSON: Okay.

DR. TAULBEE: And what I'm looking at here -- I'm trying to pull up this particular graph here. So, we're going to be redoing all of them between 45 and 50 percent using the 30 runs at -- at two -- 30 runs at 20,000 -- 20,000 iterations. Those that fall then within the 49.5 percent and 50.5 percent will get the additional treatment of 300 runs at the optimal number of iterations. So, there's two tiers going on there. It's not just those 49.7.

What we see right now from the preliminary review is that there's a few claims, two claims that we have seen that were like 49.85, and I think 49.89 will go over 50. Some of them will actually drop, okay, from what we've seen because of just the random seeds before, and by increasing more, we're actually getting more certain on this particular graph. So, that confidence interval is shrinking. So, we -- we see a couple right now, but we haven't looked at the multi-cancer claims yet, which are -- there are less of them than what we have in single-cancer claims. And that's part of -- all of

this is part of the PER work. So, when we get to that point and we identify ones that go over 50, then we'll reach out to the Department of Labor and ask them to send back and reopen that claim so that they would then be compensated.

CHAIR ANDERSON: So, I'm trying to -- I'm trying to understand this a little bit. I understand what the numbers that you were saying. Now, this PER, is this going to come before us and be able to review before this is implemented, or?

DR. TAULBEE: We will implement it, and then the program evaluation report will be done. Then it goes to the subcommittee for procedures and review, and then they review all of the steps, the causes, what the recommendation was, how we did this, how we selected the claims to be reviewed. All of that is part of their four-stage process of reviewing our program evaluation.

CHAIR ANDERSON: Okay. That's -- that's what I wanted to understand. Thank you.

DR. TAULBEE: And Josie's, the chair of it. Go ahead, Josie.

MEMBER BEACH: I was just curious. This is going to affect our blinds as well, and our subcontractors if they're able to jump on and see what you've done here. I -- that's a question for SC&A, I'm assuming.

DR. TAULBEE: Once we implement this, it will be really transparent to you all from that standpoint. What you're going to start seeing is the claims would then all be run with 20,000 iterations. Those between 45 and 52 percent, which is really what the DR subcommittee focuses on, --

MEMBER BEACH: Right.

DR. TAULBEE: -- will be 30 runs and 20,000 iterations with the addition of these between 49 1/2 and fifty (indiscernible). So, you do bring up a point that I actually hadn't thought about until you just did, is we will need to work with SC&A from the standpoint of how this IREP predictive tool works --

MEMBER BEACH: Right.

DR. TAULBEE: -- from that standpoint. So, when we do implement that, yes, we will go with that to make sure that they understand how to get that optimal number of iterations.

MEMBER BEACH: Great. That -- that makes a difference. Thank you.

DR. TAULBEE: Doctor --

MEMBER CASSANO: I --

DR. TAULBEE: Go ahead.

MEMBER CASSANO: I have -- I have an additional question, couple of additional questions. First of all, you mentioned that this is not yet going to affect a -- those people with the -- with multiple cancers. So, at this point, you're not going to change the method for calculating the probability of causation when there is more than one cancer?

DR. TAULBEE: No. No, we --

MEMBER CASSANO: Since it --

DR. TAULBEE: -- will be doing that for those as well. It's just we haven't had the time. That'll be done under the program evaluation report. We'll look at --

MEMBER CASSANO: Okay.

DR. TAULBEE: -- all cancers, not just the single cancer ones. Right

now, because of our -- a lot of our IT constraints, it's more difficult for us to get that data and look at that data. And so, --

MEMBER CASSANO: Yeah.

DR. TAULBEE: -- we will when we do the program evaluation report. But the multi -- multiple cancer claims make this much harder from that standpoint, and it was easier for us to look at the single ones first, and that's what we did. But --

MEMBER CASSANO: Okay. Thank you.

DR. TAULBEE: -- all of them will be looked at, all of them.

MEMBER CASSANO: Yeah, I had another question, but my senility got the better of me, and I can't remember what it was.

DR. TAULBEE: If you think of it, chime in.

Rashaun, do we have more questions?

CHAIR ANDERSON: Yeah, I just -- this is somewhat of a statistical question that -- quite a while ago I got involved with using quantile regression and doing dose response in medical things. And for quite a while, when you sent it in to be published, the statisticians didn't like quantile regression, so --because what quantile does is it tries to resolve the issue of a linear dose response. And statistics is based really on a normal distribution and our data, as you show here, tends not to be normally distributed. So, then everything is done to how can we modify this horrible tail into a linear-approved dose response type of thing.

So, quantile regression, frequently what you see in the medical data, the dose response, is at a lower dose, you'll actually have a higher dose response. So, at a -- as you increase the dose, the actual impact is greater

per dose than when you get at the high end or a higher end, then you get a -- the curve begins to not be quite so straight up. And so, what quantile did is you calculated what it was at various quantiles.

This program, the way you've done it, I would say and as I look at it, sort of destroys the benefit of quantile because what you're doing is you're taking the dose response into tiny, tiny quantiles, calculating what the -- the dose response there is, and then you're trying to redistribute them. So, naturally, as you increase your number of iterations, like in the study, when you increase the number of participants in it, you can get a statistically significant finding at what clinically is an insignificant difference in the disease outcome.

So, my question is what we're trying to do here is take the medical you're not -- you're not addressing the dose response of the medical studies, most of which, at -- at the best, use a lognormal distribution. And then you very seldom see the statistical analysis of how confident are you, your confidence interval around that then changes considerably. So, and I don't have any problem with what you're proposing to do, but it's really you're -- you're chasing an end to try to make something very linear, which clinically really isn't there.

So, I mean, that's -- if you look at all of the various compensation programs, most do not go into the -- the 50 percentile probability issue because it really isn't seen there in the medical data very well. If you don't go back to the medical studies that you're basing your risk on, the statistics of that aren't what you're using here.

Here you're taking a very uncertain post response and trying to, you

know, make it absolutely certain on your probability of causation and chasing it and using Monte Carlo because statistically you can, in one sense, early on. But when we were analyzing these various clinical studies, you didn't have that, I mean, the early -- the early work. I did a lot of this was on a handheld calculator. Well, that limited you, what you could do, and you just accepted the uncertainty in that value.

Here we're trying to tell people we're really making it very certain, and I'm not sure we're really adding that. So, I would -- long and short of it, I think we need to go back to what we're saying here and use an administrative approach to how we deal with the tiny numbers. I mean, two cases, if it makes a difference, as you see in your graph there, as you go, actually, you reduce them down, many will be reduced, so you may be more confident with it really wasn't 49.7; it was really 48 or forty -- 48.9. And therefore, it clearly it is not 50 percent. You're more confident that you can deny compensation to somebody.

So, I just think it's useful to go back to if you're relying on quantile regression, what that's actually doing is it's taking all sorts of -- not very many of the strongest on the medical side was if you use four quantiles, that would really give you quite a different outcome than if you just use your linear regression. And the more quantiles, the more linear it becomes. So, why not just use the linear progression to start with?

DR. TAULBEE: I would point out that a lot of what you're just describing there is we did the cancer risk models that are built into IREP, and that's not what we're changing.

CHAIR ANDERSON: No, but that's where the variability is.

DR. TAULBEE: That is correct. And that's --

CHAIR ANDERSON: So, you're saying we're making this outcome very, very, very confident when, in fact, you're just ignoring the tremendous variability that's being impacted into it earlier.

DR. TAULBEE: I understand what you're saying.

CHAIR ANDERSON: So, I mean, in the one sense, it's misleading because we're using this tremendously powerful statistical sampling tool, but what you're sampling, you know, is --

DR. TAULBEE: You still don't --

CHAIR ANDERSON: -- you really can't control that variability. You just have to learn to live with it.

DR. TAULBEE: Thank you. Dr. Kotelchuck, go ahead.

MEMBER KOTELCHUCK: Yeah, one other -- one other word. I do hope that it -- that as this is implemented, that you'll -- that you will make sure that dose reconstruction review subcommittee gets reports, extensive reports, on how things have changed because I think it -- it sort of -- it relates to what Andy said a moment ago. I mean, I -- I think it may help us. It may have some impact in telling us what professional judgments make a (indiscernible) call important and maybe should be considered or looked at in a different way.

So, what I'm basically saying is I'm perfectly happy, of course, that you're going to the procedures subcommittee, but I do hope that we will be kept informed of changes, not just changes above and below 50 percent, but changes within the range that we are changing the procedures for to see if there is any impact on the -- the dose reconstruction reviews that we're

(indiscernible). So, please do keep us rather fully informed. Thank you.

DR. TAULBEE: Thank you, Dr. Kotelchuck.

UNIDENTIFIED SPEAKER: Dr. Ziemer.

DR. TAULBEE: Dr. Ziemer?

MEMBER ZIEMER: This isn't really a question, more of a -- more of a comment. But Dr. Anderson mentioned the issue of the dose response curve and the dependence on that. It doesn't really affect in a way of what you're proposing here, but simply a comment to keep in mind that what we do in a -- this risk calculation and the probability of causation calculation is very dependent on what we assume about the dose response curve. Andy mentioned that at lower medical doses, it seems to go into the opposite way of low doses.

On the other hand, occupational exposure, there's -- there's still -- there wasn't -- there wasn't, at the beginning of my career, the issue of what does the dose response look like at low doses, and by low doses I'm talking about occupational exposures. And that issue is still not only there with us, but it has been elevated in the (indiscernible) community the last couple of years. But that what -- what is the dose response curve, that low dose, because we base most of our -- our knowledge not -- not really on the medical exposures, but on the -- on the Japanese population and that is a really high dose. In any event, that is a larger question that -- that is outside of those posed today.

But that's just for the record, if you can find the answer to dose response of occupational doses is very much in question nowadays and could easily change, and if it does, it's probably years off. Thank you.

DR. TAULBEE: Thank you, Dr. Ziemer.

CHAIR ANDERSON: No other hands are up, so. Dave, you have the last word.

MEMBER POMPA: I have a question. Assuming all these calculation, is there a potential for human error during all this process? And how do you --

UNIDENTIFIED SPEAKER: (Indiscernible.)

DR. TAULBEE: Yes, that's an answer. That's a -- yes, there is a potential. I mean, we have identified at times things we did not expect in IREP, and we made changes and we've documented those over the years where something got coded incorrectly. But again, these initiated program evaluation reports and the claims that were affected, we went back and reevaluated. And those that went over 50 percent then were -- we pulled back from the Department of Labor, and it was corrected. So that's our process.

MEMBER POMPA: Thank you, Tim.

CHAIR ANDERSON: No more discussion and questions. We'll move forward with a break.

MR. CALHOUN: Wait, wait, wait, wait, hold on a second. Can we try one more time with labor?

MEMBER ANDERSON: Oh, yes. Yes.

MR. CALHOUN: Okay. Chris said he's going to --

CHAIR ANDERSON: Chris has got a -- he's got his --

MR. CALHOUN: Chris, are you on? Can you say something? If not, he told me to go through it and just read them to you.

CHAIR ANDERSON: Okay.

MR. CALHOUN: Chris, are you on?

MR. CRAWFORD: Grady?

MR. CALHOUN: That's exciting.

MR. CRAWFORD: At last.

MR. CALHOUN: Okay, hold on a second. Let me get this sharing going. I got a nice picture of Dr. Kotelchuck.

MEMBER KOTELCHUCK: Yeah.

MR. CALHOUN: All right. Can you see that, Chris?

MR. CRAWFORD: No, I'm not on Zoom. I'm --

MR. CALHOUN: Oh, you're not on Zoom. Okay, well, I'm on the first screen.

MR. CRAWFORD: Great. Let's go to slide two and begin.

MR. CALHOUN: There we go.

DOL PROGRAM UPDATE

MR. CRAWFORD: Great. In terms of compensation paid, we see that Part B compensation in amount of 7.7 billion at this time. Part E compensation is a further 6.5 billion and medical bills are $9.4 billion, for a total compensation plus medical bills paid of $23.6 billion with 232,185 cases filed.

Next slide.

Compensation on NIOSH-related SEC and DR cases, we have paid $1.7 million paid on dose reconstruction cases and $188,000,000 approved SEC and a POC greater than 50 percent for 1444 payees in that last category.

MR. CALHOUN: Next slide.

MR. CRAWFORD: Next slide.

Okay. Our numbers always differ slightly, but they're close to the NIOSH numbers We show 57,270 cases referred to NIOSH for a dose reconstruction, of which 55,643 cases have been returned to DOL from NIOSH. 48,778 had a dose reconstruction, 6865 were withdrawn from NIOSH with no dose reconstruction. We show 1627 cases currently at NIOSH. 1137 of them are original referrals to NIOSH and 430 are reworks. Next slide.

MR. CALHOUN: It's there.

MR. CRAWFORD: We have our usual Part B cases with the dose reconstruction and a final decision. There are 38,388 cases in this category for both ADR and a final decision. Final approvals were 13,018, which represents 34 percent of the cases. Final denials were 25,370, which represents 66 percent of these cases.

Next slide.

MR. CALHOUN: It's there.

MR. CRAWFORD: For Part B cases filed, this hasn't been changing very much over recent years. The "other" category includes beryllium sensitivity, chronic beryllium disease, chronic silicosis cases. And it's a large category, as we see, at 38 percent. Cases sent to NIOSH, 30 percent of the cases, SEC cases never sent to NIOSH, 13 percent of the cases. Then there are SEC cases that are referred to NIOSH, another 12 percent of the cases, and finally RECA cases, which are 7 percent of all the cases.

Next slide.

MR. CALHOUN: It's there.

MR. CRAWFORD: Part B cases with a final decision, we have 112,762 cases in this category of which approvals came to 60,761 cases, or 54 percent of those cases, and denials came to 52,001 cases, or 46 percent of the Part B cases with final decisions.

Next slide.

MR. CALHOUN: It's there.

MR. CRAWFORD: Top four work sites are more or less our usual suspects, Nevada Test Site, Hanford, Savannah River Site, and the Y-12 Plant.

Next slide.

MR. CALHOUN: It's there.

MR. CRAWFORD: This -- Grady, we'll do this in double iteration again, if it's okay with you.

We're starting with Savannah River Site where we have 22,000 cases filed within Parts B and E. We had 6671 cases returned by NIOSH with a dose reconstruction. We have final decisions in Part B now, 9284 cases.

And let's go to the next slide and then we'll cycle back.

Continuing on, Savannah River, Part B approvals, 4166 cases. Part E approvals, 5417 cases. The total compensation and medical bills paid $2,021,539,535.

Let's go back on slide three.

MR. CALHOUN: It's there.

MR. CRAWFORD: Now, we're looking at Metals and Controls Corporation. For this site we have 1018 cases filed, of which 475 cases have been returned by NIOSH with a dose reconstruction. We have final decisions

in 989 cases.

Next slide.

MR. CALHOUN: It's there.

MR. CRAWFORD: Continuing Metals and Controls, we have Part B approvals, 480. There are no Part E cases in this AWE site. The total compensation and medical bills paid comes to $78,743,369.

Next slide, please.

MR. CALHOUN: There.

MR. CRAWFORD: In terms of the outreach programs, we are having today, an outreach program at Hamilton, Ohio. And nothing much more to say about that. I don't have any numbers for it yet.

Next slide, please.

MR. CALHOUN: It's there.

MR. CRAWFORD: We're establishing -- we're doing a webinar on establishing survivorship under the EEOICPA. That's on August 23, '23. And as you see, it's an overview of survivorship criteria and eligibility criteria under both Parts B and E. So, this is coming up on the 23rd.

Next slide, please.

MR. CALHOUN: There.

MR. CRAWFORD: Now, previous outreach events in the webinar series, that is the virtual series, include a topic of establishing covered employment that was done in July 2023 with 131 attendees. Another on impairment and wage loss benefits that was done in June 2023 with 132 attendees. Then final adjudication branch roles and responsibilities was presented in May 2023 with 197 attendees. And then a more general

information session was done in April 2023 with 198 attendees.

Next slide.

MR. CALHOUN: There.

MR. CRAWFORD: And here we have the outreach events in the town hall format. There was one done in June, Kayenta, Arizona, probably one you -- one of the ones you attended, Grady. That was in June of 2023, 127 attendees. Also in June, Shiprock, New Mexico, 97 attendees. Also in June, Farmington, New Mexico, with 87 attendees. And then in Richland, Washington, in May, 225 attendees for those town hall events.

And that's the end of this presentation. So, any questions?

MR. CALHOUN: Dr. Frank, it looks like you had a question.

MEMBER FRANK: Actually, it was -- I figured it out because it was an early slide that had 1.7 billion being handed out to 1444 people, and I figured that's far beyond what compensation is, but then I realized it probably included medical costs.

MR. CRAWFORD: Yes.

MEMBER FRANK: Right, which it didn't say it. It just had said it was compensation, so it seemed like an awfully high number. It would have been more than a million dollars per person. But most of that, obviously, then would have been medical costs. Thanks.

MR. CRAWFORD: Thank you.

MR. CALHOUN: Dr. Ziemer.

MEMBER ZIEMER: Thank you. Chris, this is a little outside of the Advisory Board here, but -- and I couldn't remember, but thinking about the beryllium section being such a big fraction of the overall compensation that

labor does, could you remind me, a successful claimant with beryllium disease, what is the compensation?

MR. CRAWFORD: Unfortunately, I don't have any insight into that part of the program. I can ask --

MEMBER ZIEMER: Oh, okay.

MR. CRAWFORD: I can ask that you get a report.

MEMBER ZIEMER: Yeah, it's not that critical. I -- I couldn't remember how much it parallels to what we do here, or if it was a sliding scale for -- beryllium disease is a little more straightforward. If you have it, the exposure was to beryllium, and that part of its straightforward. I just couldn't remember whether it was a fixed payment or -- if it -- it certainly being a plus medical, as we do, but just wondered what it was. Thank you.

MR. CRAWFORD: Thank you. And I'll -- I'll put that question in to our folks at DOL. Perhaps somebody can reply that knows something about that part of the program.

MEMBER BEACH: Hi, Chris, Josie here. Back on that same slide, can you remind us what the SEC classes that were never sent to NIOSH are? That's on six.

MR. CRAWFORD: If a person has a qualifying cancer and is otherwise qualified for the class, there's no reason to send them to NIOSH. In other words, the award is the same no matter what you do with the DR. The only time that we normally get a case that has been SEC approved and is then sent to NIOSH is when they have other non-SEC cancers. Then we do a dose reconstruction for all cancers that are accepted, and if they qualify under that, if they get 50 percent or higher in other words, then the

non-SEC cancers are also covered for medical payments and so forth. The $150,000 payment, of course, is fixed, and that's already been paid in those cases.

MEMBER BEACH: Okay, thank you.

MEMBER POMPA: This is David Pompa. What determines a reworked and not NIOSH?

MR. CRAWFORD: Well, in some cases, there's been a change in the cancer information. We have another accepted cancer that hadn't been in the DR because it came later, after the DR was finished. Employment changes can also cause rework request, and sometimes after technical objections have been received, the claimant produces new evidence, job duties or circumstances on the job or incidents that he or she was involved with. All of those things can cause DOL to ask NIOSH to rework the claim with the updated information in it.

MEMBER POMPA: Okay, thank you.

MR. CRAWFORD: Anyone else?

CHAIR ANDERSON: Okay, so now we can take a break. Thank you. Thank you.

DR. ROBERTS: And, please, we will resume the session at 10:30.

(Whereupon, a break was taken from 10:15 a.m. until 10:31 a.m.)

Roll Call

DR. ROBERTS: I think we have just about everybody, so I'm going to go through roll call for the board again, starting with Anderson.

CHAIR ANDERSON: Present.

DR. ROBERTS: Beach? Present?

MEMBER BEACH: Present.

DR. ROBERTS: Cassano?

MEMBER CASSANO: Here.

DR. ROBERTS: Thank you. Clawson?

MEMBER CLAWSON: Here.

DR. ROBERTS: Frank?

MEMBER FRANK: Here.

DR. ROBERTS: Kotelchuck?

MEMBER KOTELCHUCK: Here.

DR. ROBERTS: Lockey?

MEMBER LOCKEY: Here.

DR. ROBERTS: Martinez?

MEMBER MARTINEZ: I'm here.

DR. ROBERTS: Pompa?

MEMBER POMPA: Here.

DR. ROBERTS: Roessler?

MEMBER ROESSLER: Here.

DR. ROBERTS: Valerio? Valerio? She may be having trouble with the audio. Ziemer?

MEMBER ZIEMER: Here.

DR. ROBERTS: Okay, thank you. Over to you, Andy.

CHAIR ANDERSON: Josie.

PROCEDURE REVIEW

MEMBER BEACH: All right. We're ready to start with the procedures

subcommittee review. I previously reviewed documents that the subcommittee approved and are now out for final Board review and voting on them. Kathy, I'm assuming you're going to run your presentation, correct?

MS. BEHLING: (Indiscernible.)

CHAIR ANDERSON: Is somebody's mic on?

MS. BEHLING: Yes.

MEMBER BEACH: All right. Go ahead to --

CHAIR ANDERSON: We're getting some feedback. Is that yours?

MEMBER BEACH: I think it might be mine, but I don't know why.

DR. ROBERTS: You might want to mute.

MEMBER VALERIO: Josie, it's Loretta, just real quick, I'm back on.

MEMBER BEACH: Great. And Kathy, I think you may have been speaking, but I don't know if we heard you.

MS. BEHLING: I just want to (indiscernible) that I'm sharing my screen. Can you see --

MEMBER BEACH: Yes, you are, we can --

MS. BEHLING: Can you see it?

MEMBER BEACH: Yes, we can see it.

MS. BEHLING: Okay. Great.

MEMBER BEACH: Thanks. We'll go ahead and turn it over to you, Kathy.

MS. BEHLING: Okay. All right. Here we go again. Today, we're going to discuss another five documents that have been approved by the subcommittee on procedures review, and these documents include two

technical information bulletins. We will get to review one program evaluation report that we were talking about earlier, and two administrative procedures.

When we started this Board approval process, we tried to capture the essence of all of the work that the subcommittee puts into these re -- into this review process by using an issues matrix -- issues resolution matrix approach. And in general, we -- that approach means that we summarize the description of the document, and we try to include a table that has a description of the finding and a chronology of the events to resolve that finding and then the summary of the final observation and -- and a finding resolution.

Our first document today is TIB -- it's an OCAS-009 -- DCAS-TIB-009, which ultimately is an overarching issue. That -- the -- these procedures are really not suitable for that (indiscernible) more simplistic matrix-style approach. However, we've prepared an alternative and a somewhat more detailed presentation style that will recount this more complex issue resolution process. So, we'll try to walk through that.

TIB-009 provides dose reconstructors with a method to estimate ingestion intakes for energy employees that have no bioassay monitoring. It's title is "Estimation of Ingestion Intakes," and it was issued in April of 2004. It used to estimate ingestion intakes for both the operational and residual periods, and it bases those estimates on ambient air concentrations in the workplace. So, this we reviewed TIB-009 way back in June of 2006. And back then, we used to be given between 25/30 procedures to review called a set. And this was actually reviewed under our second set of

procedure reviews.

SC&A identified a set of related findings associated with surface contamination. And that was (indiscernible) assuming a settling velocity of five microns air -- air (indiscernible) would likely under approach -- underestimate surface contamination levels. We also said that the assumption that people's equilibrium was reached in 24 hours is not scientifically sound or claimant favorable. And we also determined that the surface contaminations could result from other activities such as milling, grinding, cutting, and welding.

In addition, we (indiscernible) findings regarding modeled transfer. And SC&A found that assuming a 10 percent transfer of surface contamination from one hand to the mouth during one -- during a full work day is perhaps unrealistic and unconservative (sic). And SC&A also pointed out that the ingestion may involve other modes of intake, including direct deposition on lips, cigarette smoking, etc.

So, at the time that TIB-009 was reviewed, BRS did not exist. When the BRS was -- was populated with the data from our review of TIB-009, it -- all of -- all of these findings and all these concerns that I just mentioned were actually consolidated into one finding. And that finding stated the fundamental scientific approach to reconstruction -- reconstructing ingestion exposures has flaws that could lead to an underestimate of ingestion doses under certain -- certain circumstances.

When we discussed this finding, the subcommittee determined that this -- since this finding could impact all sites, it should be considered an overarching issue. And therefore, on October 25, 2012, NIOSH issued

NIOSH-OVER-0002, which is workplace ingestion. So, NIOSH responded to SC&A's OTIB-009 review by preparing a white paper, and this white paper is linked to this presentation if you're interested in any additional details in the white paper.

NIOSH concurred that the parameters used in TIB-009 are based on assumptions that were not empirically demonstrated to be valued -- to be valid. And NIOSH addressed that SC&A's review by character -- characterizing findings into two issues. And issue one was the possible lack of association between measured air concentrations and workplace surface contamination. And issue two was the model transfer of surface contamination to the GI tract through inadvertent ingestion.

So, there -- there's the relationship between the air and surface contamination levels, which is issue one. NIOSH analyzed air and smear samples from uranium rolling operations at Simonds Saw and Bethlehem Steel. Also, they looked at smear and air samples during a test rolling at Superior Steel facility, and they assessed approximately 240 air samples and 150 contamination smears from Vitro Manufacturing.

So, they compared the air and smear samples, and they -- and they plotted that -- that data, and this showed that the measured surface contamination levels are proportional to air contamination. Using a linear regression analysis, it was determined that the surface contamination level equaled 116.7, and that value gets multiplied then by the measured air concentration.

For assessing the daily ingestion rate of loose surface contamination, NIOSH used the NRC computer program RESRAD-BUILD, which has an

ingestion parameters that are based on an extensive analysis of the literature. This model uses an hourly ingestion rate that equal to the workplace surface contamination measurements times an effective transfer rate for ingestion and removable contamination. And to determine that default ingestion transfer rate, NIOSH used 1.1 times 10 to minus 4 meters squared per hour. And this value comes from NUREG/CR 5512, Volume 3. Now, this would result in an ingestion rate of 8.8 times 10 to the minus 4 meters squared per day for an eight-hour workday.

So, using the NIOSH-derived surface contamination level of 116.7 and multiplying that value by the NUREG ingestion transfer rate resulted in a daily ingestion of 0.103. And then that value gets multiplied by the workplace air concentration. And the NIOSH-derived value then needs to -- to be compared to the values in TIB-009, which recommends a daily ingestion value of 0.2, which is multiplied again by the measured air concentration of the workplace.

So, NIOSH determined that using empirical data and the NUREG ingestion rates resulted in a predicted ingested intake that was about half of what they are recommending in TIB-009. And although TIB-009's assumptions were simplistic; the estimates of ingestion are within reasonable agreement with the NUREG. And NIOSH also pointed out that TIB-009 includes a 20 percent multiplier for contaminated beverage or food items that's not considered in the NUREG. And given the uncertainty that's built into the values, NIOSH concluded it was not unreasonable to continue using the OTIB -- the TIB-009 approach for estimating ingestion intakes.

In addition, NIOSH pointed out that the ingestion fraction will be above

-- that the ingestion will be a fraction of the inhalation exposure. For uranium intakes, that uptake across the GI tract is low. The ingestion pathway contributes less than 0.6 percent of soft tissues under all solubility types. And the maximum concentration for ingestion would, obviously, be the organs in the GI tract with the highest of 3.4 percent to the lower large intestine when we use a type S solubility material. So, NIOSH also applies -- when they are calculating their ingestion dose, they apply a geometric standard deviation of 3, and in some cases, they actually apply a GSD of 5.

(Indiscernible) NIOSH did point out that TIB-009 has -- was -- had been used inappropriately during the residual period. To use the -- the resuspension factor to estimate air concentrations and then multiply that by 0.2 to calculate the ingestion intakes would grossly under represent the air -- airborne activity that's deposited by the surface contamination.

To -- to apply TIB-0009 during the residual period, it's actually necessary to use the air concentration on the first day of the residual period that's equal to that at the end of the operational period. And thereafter, you can use the OTIB-70 source term depletion method to decrease ingestion over time. And NIOSH indicated that they will review all of the ingestion guidance during the residual period for all sites and issue a PER as necessary.

So, SC&A had a chance to respond to NIOSH's ingestion assessment, and we had several concerns. The first is that the majority of the data on inadvertent ingestion from the hand-to-mouth behavior is in residential settings and may not represent our build -- our industrial environments. Also, the data in NUREG-5512 and RESRAD, that came from -- from Pacific

Northwest Laboratory and represents only one-step data.

So, SC&A had actually identified an independent EPA study on World Trade Center workers used -- that used a model for transferring pesticides hand to mouth. And in that EPA study, it was determined that with soft -- yeah, that on soft surfaces, ingestion was 2.25 cubic centimeters per hour, which agrees with NIOSH, but on hard services the ingestion was 11.25 cubic centimeters per hour. So, NIOSH had a verbal response to (indiscernible) to -- to look through this EPA document and (indiscernible) the document was really developed to identify contaminates of primary health concerns for planned residential clean-up efforts. This method is more of a screening analysis -- analysis of exposures to residents than quantifying exposure to clean-up workers. Therefore, NIOSH believes that the RESRAD parameters were still the best set of data for estimating ingestion exposure for this program.

So, to close this issue, SC&A concluded the (indiscernible) and they said that considering the differences between the World Trade Center study and TIB-009 all the uncertainties involved, the amount of agreement between the hand-to-mouth and effective transfer rates is reasonable. SC&A also pointed out that the difference in hand-to-mouth ingestion models between workers and residents is more due to exposure duration as opposed to the effective transfer rates. So, therefore SC&A recommended closure of this finding, and the subcommittee did close the finding at the February 2013 meeting.

MEMBER BEACH: Okay, thank you, Kathy. And just a reminder, this is the final review. The subcommittee committee did review and close all

findings, and we are bringing it to the Board for questions, comments, and then to accept the recommendation from the subcommittee, if that's appropriate. So, we're entertaining any questions at this time.

CHAIR ANDERSON: Any questions for those online? Well, with that, we'll just do a vote on acceptance.

MEMBER BEACH: Okay.

CHAIR ANDERSON: All in favor -- I should say is anybody opposed, because most everybody is online rather than -- do we want -- should we go through by individual? No, okay. If there's anybody opposed, speak now. Not hearing any opposition, we'll accept the recommendation by the committee.

MEMBER BEACH: Okay. So, we will close OCAS-TIB-009, --

CHAIR ANDERSON: Yeah.

MEMBER BEACH: -- and we will add that to our temporary BRS that we are keeping --

CHAIR ANDERSON: Yeah.

MEMBER BEACH: -- until the real one comes back online. And Kathy, I wanted to thank you again for putting the white papers within your slide presentation. It -- I found it very helpful --

CHAIR ANDERSON: Yeah.

MEMBER BEACH: -- to go and look at that and not have to jump back and forth. So, thank you for that. And then you can move on if you're ready to PROC-0031.

MS. BEHLING: I'm glad we got (indiscernible) so that I didn't have to do (indiscernible) blind evaluation. Okay.

We'll move on to ORAU-PROC-31. The initial title of PROC-0031, the Rev. 0 and Rev. 1 version, titled "DOE Technical Basis Document Development Review and Approval Process," and Rev. 1 was issued in December of 2005. And then with the issuance of Rev. 2 in 2007, the title was changed to "Site Profile and Technical Data Basis Document Development." So, this procedure establishes guidelines of the development, review, and approval of the site profile technical basis documents, and its content is procedural rather than technical.

And SC&A reviewed in that very first bullet, too, I should say, we reviewed Rev. 1 of this procedure. And then that was, again, part of the second set of procedure reviews. And that was initially submitted in June 2006. And then there was a revision made to other documents, not PROC-0031 (indiscernible). And so, it was -- and our review was resubmitted in August 2007, but there was really no change to our initial review of 31.

So, and our review used SC&A's procedure for Q/A reviews of NIOSH/ORAU dose reconstruction procedures. And this includes a Q/A-related document compliance checklist. And as part of that, we identified three findings.

I don't know, did I find it? Finding one identified that Section 4.2.1 incorrectly referenced other sections of the procedure, and NIOSH did agree, and they corrected that error through a page change to the procedure. And based on that resolution, the subcommittee closed the finding.

Finding two states that the procedure refers to sensitive information, but it doesn't define that term. And NIOSH stated that sensitive information is a general, collective description of information that has limited or

restricted out -- access and distribution due to various regulations and agency orders, for example, the Privacy Act, etc. And again, the subcommittee was satisfied by this response, and they closed the finding.

And finding three was about whether the TBD revisions were only prompted by NIOSH and former outreach activities and question whether the Advisory Board and contractor comments are considered. And NIOSH said yes, that the -- that NIOSH does forward comments from the Advisory Board and its contractors to ORAUT for response and follow up. And based on that, the subcommittee closed the finding.

(Indiscernible) PROC-0031, Rev. 3 was issued, and so the subcommittee tasked SC&A with a pre-review of the -- of this version of the procedure to determine if a full review was warranted. We submitted that pre-review in January of 2013, and again, that's linked to this presentation. And it was determined that there were no material technical changes, and that SC&A felt the revision was improvement over the earlier versions and just -- it included more details and was -- more clarity. So, the subcommittee -- or so, the subcommittee concluded that based on that pre-review, additional review was not required, and a note to the BRS was added to that effect.

MEMBER BEACH: Okay. Kathy, let me stop you just for a second. I think you said November 1, 2011, and it should have been 2012. Minor, but just a little correction.

MS. BEHLING: Okay. I --

MEMBER BEACH: Thanks.

MS. BEHLING: -- (indiscernible). I'm sorry. Thank you for --

MEMBER BEACH: No worries.

MS. BEHLING: Thank you. That concludes PROC-0031.

CHAIR ANDERSON: Any questions? If not, any opposed to accepting the conclude -- or the closing comments on PROC-0031 by the committee? Hearing none, we'll approve committee's --

MEMBER BEACH: Okay.

CHAIR ANDERSON: -- or accept the committee's recommendation.

MEMBER BEACH: All right. Thank you. Moving on to OTIB-0083.

MS. BEHLING: Okay. All right. (Indiscernible) but, yeah. ORAU-0083 is "Distribution Models for Insoluble Plutonium-238," and this was issued in April of 2013. (Indiscernible) site workers may be exposed to a ceramic form of Plutonium-238. And this exposure results in a nonstandard urinary excretion pattern. This OTIB was designed to discuss two examples and to provide parameters to be used for running IMBA. The EEs exposed -- the energy employees exposed to this ceramic form of Plutonium-238, they exhibited a non -- or as far as the urine -- urinary excretion, meaning there's a length of time that nothing shows up in the urine and thereafter, it goes back to be excreted. And so, this -- the procedure was actually canceled. I don't know the exact date, but I assume it was 2016 when it was replaced with DCAS Report 5.

Now, SC&A reviewed OTIB-0083 begins with (indiscernible) 2013. We identified 14 findings, and those findings were discussed at the February 13, 2014, subcommittee meeting. I put in the date because if there's any questions, people can go back to the transcripts if they're so inclined to see details of (indiscernible).

Okay. Finding one states that -- that the applicability and target audience is not well defined, and NIOSH considered this just an administrative finding that can be addressed if and when the TIB -- the TIB is revised. The subcommittee did request that NIOSH -- and this is -- for all of these findings, this is the same request that the subcommittee made to NIOSH, that they provide follow-up action at a future meeting.

So, finding two, SC&A does not believe that NIOSH demonstrated that type J -- type J plutonium material is only rarely encountered in the workplace. And NIOSH responded that type J plutonium has only been stored -- observed at LANL, and when this plutonium gets incorporated into a ceramic matrix material, it dis -- displayed -- displays a protected -- protracted period of increasing solubility over time then decreases. The material was present at Mound; however, there were no instances of inhalation. And, again, the subcommittee asked for -- or asked NIOSH to follow up at a later time (indiscernible).

So, finding three states that NIOSH does not explain why Type L solubility was selected to evaluate the doses in certain scenarios. Type L was derived using one incident that occurred at Mound. And NIOSH indicated that Type L was based on five cases of -- of -- with individual bio-variability. And SC&A's example -- (indiscernible) provided an example of an individual that did not fit the Type L model. And they -- they -- that may be because the EE also had chronic exposure. But they -- NIOSH indicated that would prepare a later response -- a written response at a later time.

Finding four. NIOSH did not demonstrate that Type L was commonly encountered in the workplace at Mound or other sites. And NIOSH stated

that this finding is similar to previous finding, finding three, and the TIB actually instructs dose reconstructors to use Type L only under certain circumstances. They didn't -- NIOSH is not sure they understood this issue, so SC&A stated that it's concerned -- this finding is whether this OTIB was going to be used at other sites.

Finding five is there is a (indiscernible) where this Type L, Plutonium-238 mono -- may not characterize the Mound exposures for all periods of time and in all areas of the facility. And again, NIOSH indicated they will provide more details at a point in the future.

SC&A was not clear on whether the technical calculations to derive the limiting dissolution types or examples of calculations that need to be performed at other sites other than -- than Mound. Is something we're going to have to recalculate for each of the various sites was the question. And NIOSH said that it was implied in OTIB-0083 that it will be used at other facilities but agreed that the OTIB does not accurately describe the basis for its use.

Finding seven. NIOSH does not compare organ doses from acute intakes of Type L Plutonium-238 with chronic intakes of types M and S Plutoniums. Again, NIOSH said they really didn't understand the basis for this finding, but they would go back to the report and try to address it in a future written response.

Finding eight. Although NIOSH compares the dissolution curves for Type L exposures with type J and S, it did not demonstrate that Type L is typical of Mound exposures, and so NIOSH said they would attempt to do that and then respond.

Finding nine. The purpose of section 4, and section 4 is a discussion of dissolution models. It does not define the relationship to exposures -- relationship to other exposures to Plutonium-238 that show non-monotonic behavior at Mound and other sites. Their same response, which is will follow up.

Finding ten. There is no guidance in Mound dose reconstruction TBD or in OTIB-0083, which -- which -- of which areas at Mound and which time periods to apply Table 2.1. And table 2.1 is a summary of limiting dissolution types versus (indiscernible) of chronic -- chronic (indiscernible) intakes. And table 2 provides (indiscernible) types versus acute intakes for a single unit sample when a single unit sample is collected. And NIOSH stated that the area intended to use these table values for all areas at all times that plutonium is encountered.

Finding 11. There is no assurance that Plutonium-238 material at other sites will correspond to the Mound site L model, and there's no information in OTIB-0083 on how to deal with exposures to Plutonium-238 material that present lung dissolution when there's a different type M, S, and L. NIOSH will respond.

Finding 12. SC&A finds that OTIB-0083 is somewhat difficult to follow. It doesn't seem to follow is a (indiscernible) sequence. Types J and L Plutonium are introduced in section 4, but they're actually used in previous sections. And NIOSH said they will take responding under consideration.

Finding 13. OTIB-0083 is essentially the same document as a white paper that was issued by NIOSH, and it was -- OTIB-0083 is really only clear for those that participated in the plutonium discussions at Mound. NIOSH

indicated that this is more of an editorial comment about clarity of the document, and they had recommended that rather than this being considered a finding, it be changed to an observation. And the subcommittee indicated that they would like -- they would like for NIOSH to follow up on the -- the response on this finding and then determine after they received their response, whether it should be considered as an observation. So, they kept it a finding at this point in time.

And (indiscernible) finding 14. NIOSH did not present any evidence that Type L is the only appropriate form of Plutonium-238 at Mound, and NIOSH considered this proving a negative issue, and the OTIB does demonstrate that this is not considered to be -- that it is not considered to be a reasonable incident at Mound. And NIOSH will reiterate this in their future response.

Okay. So, at the August 28, 2014, subcommittee meeting, NIOSH provided a follow up about the OTIB-0083 findings, and they agreed that the target audience is not well defined, and they agreed that the concerns about applicability of the Type L model developed using five Mound cases is -- is (indiscernible), but then NIOSH stated that they will rebuild the model based on additional cases at Mound, and they will demonstrate that Type L exposures are standard everywhere Plutonium-238 is handled. And finally, the section -- the last section to define the scope and specifically under which exposures that we can -- they can expect to find the Type L material to be present.

At the November 25, 2014, meeting, there were additional discussions about OTIB-0083, and NIOSH indicated that they will evaluate at which sites

this Plutonium-238 may have existed. And they plan on doing a complete rewrite of OTIB-0083. It is on their project planning chart, and it was anticipated that it would be completed in August of 2015. And NIOSH indicated they will inform the subcommittee on procedure review when the review is completed -- when the rewrite is completed. And thereafter, the subcommittee indicated that they would task SC&A to review that.

All right. In June 2016, NIOSH issued DCAS Report 5, which replaced OTIB-0083. DCAS -- DCAS report 5 is titled "Alternative Dissolution Models for Insoluble Plutonium-238." They issued Rev. 1 in August 2018 and this -- this report provided updated guidance on the evaluation of intakes for workers who were exposed to insoluble ceramic form of Plutonium-238. LANL, Mound, Savannah River, and NUMEC were the only sites with encapsulated insoluble Plutonium-238, and this time NIOSH developed site specific dissolution models for Mound and LANL.

Okay. SC&A completed its review of Report 5 in January 2007 (sic), and that was basically (indiscernible) presentation. This review is (indiscernible) and SC&A recommended that all 14 of the OTIB-0083 findings be closed. We note that Report 5 defined -- clearly defined the target audience and identified the sites that had potential for exposure to this plutonium.

And it also refers to the application of lung model Type L at Mound and other sites, and it differentiates between the sites. And for Mound, the data from various incidents are used to derive the most suitable model for Plutonium-238 to be applied in the installation, and it now specifies how alternative dissolute -- dissolution models for the plutonium to be applied at

different sites.

With regard to findings 7, 8, 12, 13, they no longer apply to Report 5, therefore, that was -- our basis was recommending all four -- 14 findings for OTIB-0083 be closed.

Going on, the review of Report 5 did identify two new findings. Finding one, NIOSH should provide a justification for Mound Case 13 dissolution parameters as the default for all Mound workers. And NIOSH will add explanation -- they indicated they would explanation to the next revision, and so this finding was changed to an observation, and the subcommittee put the observation into abeyance awaiting NIOSH's revision.

Then in October of 2018, NIOSH issued Rev. 1 to Report 5, which added clarification for using the Case 13 as a default for all Mound workers. NIOSH reviewed data and issued a memo to the subcommittee that when you consider it a justification for the Case 13 (indiscernible) discussion of that Case 13 to be adequate. And we're recommending closing this now-observation, and so the subcommittee closed the observation in February of 2021.

And for finding two, using the now Case 13 parameters as a default for Savannah River Site workers contradicts the claimant favorable statement that the LANL model should be used for Savannah River cases. And NIOSH agreed and indicated that they would issue a page change, again, stating that NIOSH advised the subcommittee, they -- that this finding was changed to an observation, and it was put into -- in abeyance until the change was made to Report 5. That did happen in Rev. 1, and the subcommittee then closed the finding in February of 2019.

And that's it for Report 5.

MEMBER BEACH: So, I have to say, I hope everybody was able to track that. It's very complicated. And Kathy, you did a fabulous job on tying that all together and keeping it orderly, so thank you for that. It's a lot.

CHAIR ANDERSON: So, does 0083 still exist?

MEMBER BEACH: No. No, it does not.

UNIDENTIFIED SPEAKER: No, (indiscernible) does not.

CHAIR ANDERSON: Okay. So, we're really voting on -- we're reviewing Report 005 here.

MEMBER BEACH: Both of them, actually.

CHAIR ANDERSON: Both of them, --

MEMBER BEACH: Yeah.

CHAIR ANDERSON: -- okay.

MEMBER BEACH: Yeah, because remember, we're -- we're going back and closing out stuff --

CHAIR ANDERSON: Yes.

MEMBER BEACH: -- from many --

CHAIR ANDERSON: Yes, I --

MEMBER BEACH: -- many years --

CHAIR ANDERSON: -- know.

MEMBER BEACH: -- ago. And so, we don't want to lose track of 0083.

CHAIR ANDERSON: Yeah.

MEMBER BEACH: And those findings were subsumed by 005, and the two findings were closed also, so --

CHAIR ANDERSON: Yeah.

MEMBER BEACH: -- yeah, it's really both.

CHAIR ANDERSON: But for a dose reconstructor who's now looking for what to use, how do they --

MS. BEHLING: (Indiscernible) --

CHAIR ANDERSON: Well, will it -- will somewhere, somebody say oh, 83 --

MEMBER BEACH: They will know that. But (indiscernible), yeah.

DR. ROBERTS: I'm sorry, Dr. Frank has a question.

MEMBER BEACH: Okay.

MEMBER FRANK: Yeah. As a relatively new Board Member, I'm just curious. We're dealing with things that go back, you know, 8-10 years. Why in two -- in 2023, are we dealing with issues that are this old? Do -- do some of these issues take this long to resolve?

MEMBER BEACH: Yes.

MEMBER FRANK: Just out of curiosity.

MEMBER BEACH: So, Frank, when I took over as the subcommittee chair, we looked back at the BR -- it's a BRS, which you haven't had access to, and hopefully we'll have access to it soon. But there's a number of procedures and work products that the subcommittee did over the years that never got finally closed out. And so, what you've been witness to for the last three or four meetings is us really trying to come up to date and do due diligence on closing out these procedures in a way that's clear and is on the record. So, that's how I would describe it. If anybody can describe it better, go for it.

MEMBER FRANK: Thank you. It does make sense to me. It's just, you know, for -- for a relatively new member dealing with things that are ten years old seems unusual, to say the least.

DR. TAULBEE: To answer your question, --

MEMBER BEACH: That's --

CHAIR ANDERSON: Yeah.

DR. TAULBEE: -- Dr. Anderson, dose reconstructors would be using Report 5 and what's in the TBD guidance, which would be referencing Report 5.

CHAIR ANDERSON: Okay. Good. That's -- that's really what I -- what I assumed, but it's -- it's a challenge.

MEMBER BEACH: Yes.

CHAIR ANDERSON: So, --

DR. ROBERTS: Dr. Ziemer has --

CHAIR ANDERSON: Ziemer, Paul?

MEMBER ZIEMER: Yes. The other thing, I -- I think you got to realize that -- this document was used in the past, and if there's any question on fact -- on cases where it was used, we want to make sure that there is a record that the Board actually has -- has seen it. The subcommittee did close them out, but you want to be sure that the record shows that that really meets with the Board approval. So, in a sense, it's validating action of the Board on past cases where you --

MEMBER BEACH: Yeah.

MEMBER ZIEMER: -- you wouldn't want a challenge to come up --

MEMBER BEACH: No.

MEMBER ZIEMER: -- and somebody saying well, the Board never saw this procedure --

MEMBER BEACH: Yeah.

MEMBER ZIEMER: -- (indiscernible). So, I think it does kind of fully close -- close the issue on it, even -- even though it's not currently used.

CHAIR ANDERSON: Yeah. And I think the other is if -- what it's really saying also, is that NIOSH responded to the comments, and that's why it's all now been closed down. So, there were 14 there, and -- and many put in abeyance, and this is really saying it was paid attention to, corrected, --

MEMBER BEACH: Right. And just note, --

CHAIR ANDERSON: -- it's now in Report 00 --

MEMBER BEACH: -- if you get into the BRS and you're looking for something, --

CHAIR ANDERSON: Yeah.

MEMBER BEACH: -- in the future, you'll be able to go back and see what was done, when it was done, why it was done. So, it's trackable, as Paul mentioned, --

CHAIR ANDERSON: Yeah.

MEMBER BEACH: -- and that's important.

CHAIR ANDERSON: Yeah.

DR. ROBERTS: Dr. Kotelchuck.

CHAIR ANDERSON: Dave?

MEMBER KOTELCHUCK: Yeah. Basically, Arthur, we had confidence in what the subcommittee was doing and therefore kind of went along and subcommittee approved, fine, we moved ahead. So, but this is really closing

the loop, as many people have said, you know. And that we're on -- the Board is on record, so it's not just a matter of we have confidence in the people, in the members of the subcommittee. We've approved.

CHAIR ANDERSON: So, is --

MEMBER FRANK: Thank you.

CHAIR ANDERSON: -- any other comments or questions? So, now the vote is -- is anybody opposed to accepting the closure of OTIB-0083 and Report 005 recommendation by the committee, --

MEMBER BEACH: Correct.

CHAIR ANDERSON: -- and nobody is -- I'm not hearing or seeing any opposing hands, so we'll accept the closure of this -- of these reviews.

MEMBER BEACH: Thank you. And Kathy, if you're ready, you got a couple extra minutes there --

CHAIR ANDERSON: Yeah.

MEMBER BEACH: -- to start on PER-020. And you're two-thirds done.

CHAIR ANDERSON: We've lost Kathy.

MEMBER BEACH: Yeah. Kathy, we're not hearing you, so hopefully you're on mute.

MS. BEHLING: (Indiscernible) hearing me now?

MEMBER BEACH: Just barely.

MS. BEHLING: (Indiscernible.)

CHAIR ANDERSON: Try again. Now she can't hear us.

MEMBER BEACH: Yeah, if you're talking, we can't hear you.

DR. ROBERTS: She's not talking.

MS. BEHLING: Okay. Can you hear me now?

DR. ROBERTS: It's going in and out.

MS. BEHLING: (Indiscernible.)

DR. ROBERTS: Can barely hear her.

CHAIR ANDERSON: Just barely.

MEMBER KOTELCHUCK: We can just barely hear you, Kathy.

MS. BEHLING: Okay. (Indiscernible) now?

MEMBER KOTELCHUCK: Still no.

MS. BEHLING: I don't know what happened here. (Indiscernible) hear me?

CHAIR ANDERSON: That's better.

MEMBER KOTELCHUCK: -- barely.

MEMBER BEACH: Yeah, you -- you came in strong at the end.

MEMBER KOTELCHUCK: Yeah. Is it some -- Kathy, is it something mechanical in terms of your --

MEMBER BEACH: Well, we --

MEMBER KOTELCHUCK: -- proximity to your microphone?

MS. BEHLING: I haven't moved at all. Is this any better?

CHAIR ANDERSON: Yes.

MEMBER BEACH: Yes.

MEMBER KOTELCHUCK: It is.

MS. BEHLING: Okay. Let me just see if I can do anything else here. Is that any better?

MEMBER BEACH: Yes, much better.

MEMBER KOTELCHUCK: Yes, --

MS. BEHLING: -- what happened. All right.

What I did want to say about -- regarding that (indiscernible), I can expand on that just a little bit more. As I say -- stated, we -- back in the -- the early, you know, 2005 was our first set of procedures. 2007 was our second set of procedures, then there was a third set. And when we realized, you know, these documents -- there were documents coming out, then they were being changed, we started to review them on a document-by-document basis for a prereport. And that was prior to BRS even being established and set up. Now the -- and I forget what year the -- the BRS was actually implemented. And -- and there were several years where the -- the subcommittee went through these procedures, and we hadn't even -- it was Tim who, I think, had mentioned that we should really be bringing these procedures to the Board. So, there were years early on that that wasn't even something that we were expected to do. So, this is -- and that's why when we looked at backlog, you know, Josie and the subcommittee came up with this design to present this data in the most efficient manner. So, maybe that helps a little bit to explain the lag in you not seeing these -- these very early reports. Does that make sense?

MEMBER BEACH: Yes. Thank you.

MS. BEHLING: Okay. PER-020. You talked about PERS, and now we're go through SC&A's process of reviewing them. And PER-020 is the Blockson TBD revision. And so, when a revision takes place in any document or any site profile and it results in an increase in dose, NIOSH issues a program evaluation report. This PER was issued in July of 2007, and it does determine the effects of Revision 1 to the Blockson TBD.

This revision impacted several exposure pathways. It added

nonuranium activities into the dose reconstruction. It revised intakes for uranium extraction in Building 55. It revised radon exposure estimates, and it also revised doses from residual contamination.

SC&A issued its review of PER in March of 2009. And initially, we do three subtasks up front that deal specifically with the PER, and if we determine that we had the technical basis documents or the technical, really, white papers or whatever was the subject of this PER, we do that under our subtask two. But the first portion of this review was published in 2009, and it is linked to this report. There -- there were three -- three findings identified and presented this review to the subcommittee at the March 22, 2011, meeting.

Finding one. Assigning absorption Type M for uranium and using this absorption type for converting urine excretion data into inhalation quantities may be inappropriate. And NIOSH responded that this is a complex issue, and it is specific to the Blockson site profile as opposed to the PER. So, during the subcommittee's discussion, it was -- the subcommittee did consider maybe reconstituting the Blockson -- Blockson work group to resolve this issue, but before doing that, they asked NIOSH just to assess the impact of the issue and then to report back to the subcommittee.

And NIOSH, in 2012, did report that there was no reason to believe there's anything other than Type M solubility at Blockson, and when SC&A looked at the (indiscernible), we agreed. And at that meeting, the subcommittee closed the finding.

Finding two. Again, assigning a less than 1 (indiscernible) value of 0.02 for uranium and converting that to urine excretion data to inhalation

ingestion quantities may be inappropriate. NIOSH responded that, again, this was a complex issue, same as finding one, but the subcommittee asked them to go back and to determine the impact. And NIOSH, again, indicated that it's the Type M solubility that they expect to find at Blockson, and therefore, the (indiscernible) value of 0.2 is appropriate. And SC&A agreed, and the finding was closed.

Then finding three, using a radon exposure value of 0.112, working-level months per year may not be bounding. And thereafter, there was an SEC that was awarded at Blockson and that stated that the radon exposures could not be modeled, so this finding became moot, and it was closed by the subcommittee.

Okay. Now, also as part of our review of PERs, we do a subtask 4 or a case review. And to this particular case, it was a separate report for this subtask 4, these case reviews. This typically does not get posted on the internet because of too much Privacy Act information. And so, in this particular case, there were two cases that were selected. I'm going to -- I summarize them here. Both cases were actually reworked under the Revision 2 of the TBD, which was shortly after Revision 1 in November 2007.

And SC&A subtask four report for this issue in October of 2013, and we identified three additional findings. We presented our report to the subcommittee at the November 13, 2013, meeting.

Okay. The EEs for both cases worked at Block -- Blockson for many years. Neither were monitored for -- for exposure. Both EEs were diagnosed with qualifying cancers during their employment. As part of the (indiscernible), the original dose reconstruction and the reworked dose

reconstruction and as expected, both the external and internal doses increased. And as a result of this assessment, then SC&A identified three findings.

Since there were three findings (indiscernible) in subtask one (indiscernible) this finding is finding four. In finding four, the internal dose calculation was inconsistent with TBD guidance. The guidance specifies that the ingestion pathway should be used for cancers associated with the GI tract; however, NIOSH used for this particular case that we reviewed, NIOSH used the inhalation pathway to calculate internal dose to the stomach.

NIOSH agreed and as a result of this finding, they re-reviewed all of the cases involving GI tract cancers, and it was determined that there were six cases that were involved that were done incorrectly. However, four of those have been compensated under the SEC, and the remaining two cases were reworked, but there was no change in the compensation decision. So, based on NIOSH's reassessment of all those types of cases, the subcommittee closed this finding.

And (indiscernible) finding five. Calculation of inhalation dose is inconsistent with TBD guidance. Inhalation dose only include -- included intakes for Thorium-232, Uranium-234, and Uranium-238, rather than the list of twelve radionuclides that are identified in the TBD.

NIOSH agreed, and they determined that the inhalation dose for this case had been calculated use -- using an old interim version of their Building 55 inhalation tool. That tool was revised, and SC&A was tasked to review the tool. We did so, and we found it acceptable and found that to be corrected. And based on the action, the subcommittee closed the finding.

As a result of finding five, SC&A identified finding six, which states there may be an error in the Blockson tool. And as we discussed in finding five, NIOSH acknowledged that was the case. They had used the older version of the tool and therefore, SC&A was tasked to review the tool. And although the tool was corrected, SC&A did find a discrepancy between the tool instructions and the TBD. So, subcommittee put the finding in abeyance awaiting a TBD change. NIOSH modified the TBD to -- to ensure that the latest version of the tool agreed with TBD. SC&A reviewed the TBD and agreed that the resolution was appropriate, the change was made appropriately. And so, the subcommittee closed the finding. Okay, and that's it for PER-020.

CHAIR ANDERSON: Any questions?

MEMBER ROESSLER: Yes, Henry, this is Gen.

CHAIR ANDERSON: Go ahead.

MEMBER ROESSLER: Yeah, just a comment. I was chair of the Blockson work group, and I just wanted to comment that this report by Kathy really supports the need for the subcommittee on procedures to do this, to review, and to report, and make it finalized. The last time I looked on the website under Blockson, it appeared that it wasn't finished or wasn't closed. So, hopefully now we can -- that will happen, and we'll know that our work is done. Thank you, Kathy.

CHAIR ANDERSON: Other comments?

MEMBER BEACH: I don't know if there's a connection between the subcommittee and the work groups in that manner, Gen. I think there should be, but I'm not really sure there is. Anybody know if there is?

MS. BEHLING: Josie, this is Kathy. I know that the -- PERs are generally almost always done by the subcommittee as opposed to the work groups. That's how we've done it in the past.

MEMBER BEACH: Right. I think it's still up to the --

MS. BEHLING: Yes.

MEMBER BEACH: I think it's still up to the chairs of the work groups to finish out whatever needs to be finished out. I -- I'm sure it doesn't come through us. So, Gen, just to answer, I don't think that's going to do what you're asking it to do, unless you --

MEMBER ROESSLER: So, what are you --

MEMBER BEACH: -- you would probably have to work with NIOSH to see if there's any other TBDs coming down or if that closes them, just to finish that loop I would say. Good question, though.

MEMBER ROESSLER: So, what's -- I guess, what is the process for doing that?

MEMBER BEACH: Tim's, coming to the mic.

DR. TAULBEE: I think -- can you hear me? Okay. I think this is a unique situation, and I -- I actually think that the process worked properly here in the sense of, you know, we'll do changes, we'll make changes, we'll issue a PER, and at that point, the work group really generally isn't involved. In this case, the subcommittee on procedures review picks up the PERs and they have their process that they go through. But in this particular case, the subcommittee identified an issue where there's a discrepancy between the tool and the TBD and pointed it out. And so, we went back and modified that. I don't know that there is a direct link that we would go back to the

work groups. From that standpoint, I certainly see that we should be informing them, but I think that this avenue that we just did in going through and closing it out, that the work groups would know, which is what Dr. Roessler was referring to. So, I think the process is working okay this way. It would be nice to have more, I guess, communication, but I'm not quite sure how to do that.

MEMBER BEACH: So, I'm going to put SC&A on the spot. I know Bob's here. In your executive review or your review process, I know you keep track of the TBDs and such for the work groups. Is that something that you would take up and write it in, like, as a final for the work group reports?

MR. BARTON: I think that if we had findings specific to changes in the TBD, it probably would be appropriate to move it to the work group, but based on that presentation, it sounds like the work group had been retired at the time this review was going on. Kathy, is that correct?

MS. BEHLING: The -- that's correct. Yeah.

MEMBER BEACH: Thank you. Then there's nothing, okay.

MR. BARTON: You can always bring it back, though.

MEMBER BEACH: Oh, I don't think that's necessary, but if it's retired, then -- then the work is finished.

UNIDENTIFIED SPEAKER: We're all retired.

MEMBER ROESSLER: Okay. So, maybe I need to look on the website and see if my memory is correct, but what I recall is that it doesn't look like the work group hadn't finalized this particular thing. So, I'll -- I'll look that up and get back with Rashaun or whoever's appropriate on that.

CHAIR ANDERSON: Just -- just a -- just kind of a curious question, Tim. Do the dose reconstructors ever -- like, something like this, where the instructions are different from what the TBD says, do they raise that or do they say well, I'm going to ignore this or I'm going to -- what -- what is their process? I mean, they're --

DR. TAULBEE: It doesn't --

CHAIR ANDERSON: Every day they're doing this, and they may --

DR. TAULBEE: They wouldn't --

CHAIR ANDERSON: -- look at that, boy, that doesn't make sense to me. Is there a process for them to -- I mean, this was fortuitous, but the committee was reviewing this. It worked well. It may be a little late, but --

DR. TAULBEE: Right.

CHAIR ANDERSON: -- we got it done.

DR. TAULBEE: Right, no. I mean, dose reconstructors point out things at different times, discrepancies, and we go -- we work to correct them.

CHAIR ANDERSON: Okay.

DR. TAULBEE: So, that's routinely monitored.

CHAIR ANDERSON: That's what I was hoping, yeah. Okay. Are there -- are there any those that opposed accepting the committee's review and recommendation on PER-020? Hearing none, --

MEMBER BEACH: Consider it closed.

CHAIR ANDERSON: -- consider it closed.

MEMBER BEACH: All right. And we're at the last and final OCAS-PER-007.

MS. BEHLING: Okay. Can you hear me?

MEMBER BEACH: Yeah, yes.

MS. BEHLING: Can you hear me okay?

MEMBER BEACH: Yes, we can.

MS. BEHLING: Okay. All right. Yes. A little nervous there. Okay. OCAS-PER-007, Rev. 1, this is a dose -- the title is "Dose Reconstruction Review." The procedure was issued in April of 2005, and it provides guidance to, you know, DCAS personnel involved in assessing performance of contract -- contractor -- contractors, contractor personnel, and self-assessments related to dose reconstruction related to 42 CFR Part 82.

(Indiscernible) the procedure, and SC&A the -- yeah, the (indiscernible) another procedure that was (indiscernible) another second set of procedures, I think, with BRS, and again, that -- that report, that second report was issued initially in 2008 -- 2006 and then revised in 2007, however, no change was made to our initial review of these -- of this PROC-7.

Again, this review was performed in accordance with SC&A's procedure on Q/A reviews, and it used this Q/A-related checklist. And we did identify nine findings. I'll go over those.

Finding one, the procedure needs to clarify the authority that establishes the frequency for the three different reviews. NIOSH responded saying that the procedure was revised in February of 2007, and it now contains two levels of review. And in addition, NOCTS was -- NOCTS reports a random selection 5 percent of the dose reconstructions that are reviewed to go on to -- yeah, to undergo a more detailed review. The subcommittee

tasked SC&A with reviewing the revision, and SC&A confirmed that the procedure was modified as stated, and therefore the subcommittee closed the finding.

Finding two. That the role of the contract oversight team leader should be delineated in section four. And NIOSH responded that in their February 2007 revision, they eliminated all of the responsibilities of the contract oversight team leader, and SC&A confirmed that that was the case, and the subcommittee closed the finding.

Finding three. The procedure is not clear on how the cases are selected for review. And NIOSH responded that based on Rev. 2 of the procedure, every dose reconstruction is given a basic review and approval in accordance with Section 5.1.1. And it noted in addition, there's 5 percent of all dose reconstructions that are randomly selected for detailed review. And again, SC&A reviewed the revision and was satisfied that this finding was resolved and addressed. And so, the subcommittee closed the finding.

Finding four. The procedure requires training for health physics personnel reviews, but it does not specify the procedure covering the training process. And NIOSH again, had a revision that they no longer require training. SC&A confirmed this, and the finding was closed.

Finding five. Revision 1 of your --

(Whereupon, Ms. Behling's audio was indiscernible.)

MS. BEHLING: -- requirements of OCAS-PR-005, which is a (indiscernible) and assessment (indiscernible) procedure.

UNIDENTIFIED SPEAKER: Can't hear.

DR. ROBERTS: Kathy?

MEMBER BEACH: Sorry. Kathy?

MS. BEHLING: Yes?

MEMBER BEACH: You were fading out, so I'm not sure if you moved back. So, you're --

MS. BEHLING: (Indiscernible) --

MEMBER BEACH: So, you're -- so, if you'd start with, I think, finding five again. I think we lost you --

MS. BEHLING: (Indiscernible.)

MEMBER BEACH: -- right at the start. Sorry.

MS. BEHLING: All right. Can you hear me now?

MEMBER BEACH: She's shaking her head no.

MS. BEHLING: (Indiscernible.)

MEMBER BEACH: You got louder at the end.

MS. BEHLING: I don't know what is going on here. Let me see something. (Indiscernible.) Did that help?

MEMBER BEACH: Yes.

MS. BEHLING: Okay. I don't know what that's all about. Okay.

We'll start with finding five again. Revision 1 of PR-007 indicates that a line dose reconstruction verification should be documented in accordance with requirements of OCAS-PR-005, which is the conduct of assessment, but the procedure does not reference that document. So, NIOSH stated that the revised procedure is a standalone document and that PR-005 is listed in section three under the references. And this was confirmed by SC&A, and the subcommittee closed the finding.

Finding six. The procedure didn't specify what it meant by the term

"significant overestimate." Again, this -- in Revision 2 of this procedure, NIOSH no longer includes that term, so this finding was closed.

Finding seven. The procedure could not be limited to radiological workers. NIOSH stated that the procedure is not limited to radiological workers, but -- but the reference to radiological workers under their section describes the likelihood of exposure. SC&A did re-review that, and they are correct, that's the only time radiological workers is -- is mentioned, is under the likelihood of exposure section. So, subcommittee closed the finding based on that review.

Finding eight. SC&A suggested that the up-front record of issue/revisions should provide more detail in identifying which sections were revised, and NIOSH thought this was a good suggestion but also stated that historical revisions or versions of documents are archived, so SC&A concluded that since these historical versions are maintained, perhaps it's not practical to put a lot of detail into the record at issue. This satisfied the subcommittee, and it was closed. However, I will say -- will point out that when procedures are updated by NIOSH, they do include today a pretty detailed discussion of what sections were changed in most of those cases anyway. So, they thought it was a good suggestion, and they are doing that with current procedures.

And lastly, finding nine. Again, the SC&A suggested that maybe including an acronym section would be helpful for the reader. Again, NIOSH agreed with this suggestion and although the acronym section was not included in this revision, and it was not imperative to have it for this procedure, so S -- so SC&A recommended closure, and the subcommittee

did close this. And, again, I will make note that today, all of the procedures, the SC&A procedures, include an acronym section.

So, that is the end of our discussion on PR-007.

CHAIR ANDERSON: Any questions? Just a question for Tim. The -- I like the idea of the historical things being kept. Is that all electronic, or is it all -- is it paper -- paper -- paper? I was going to say, there was a lot of paper to start, but somehow -- I don't...

DR. TAULBEE: That's a really good question, a good point.

CHAIR ANDERSON: Yeah.

DR. TAULBEE: We had a lot -- virtually everything that we had is electronic that we had --

CHAIR ANDERSON: Yeah.

DR. TAULBEE: -- and historical version's kept as well as we go through. When we transitioned from our current system into the Edge computing platform, everything migrated over. Us retrieving those has been a challenge, but it all -- my understanding is it's all still there --

CHAIR ANDERSON: Okay.

DR. TAULBEE: -- from an electronic standpoint.

CHAIR ANDERSON: Good.

DR. TAULBEE: But retrieving it quickly is a challenge right now.

CHAIR ANDERSON: Yeah. But there is a -- there is a tracker device so that if you -- you go into a current thing, it could go back -- it would be something in the current record that would say somewhere else there's this older record or older procedure. I mean, how would you know that it -- that there's a PR-007?

DR. TAULBEE: You would -- you would have to go back into the (indiscernible) folders and the sub -- subfolders along that item. There's -- there's always a -- there's typically an historical version folder, and that's where you would --

CHAIR ANDERSON: Okay. Okay.

DR. TAULBEE: -- search --

CHAIR ANDERSON: Okay. That's what I wanted to know.

DR. TAULBEE: Yeah.

CHAIR ANDERSON: Great, thanks.

MS. BEHLING: (Indiscernible) record at issue with revision applies that tells you how many revisions there have been and then when the original was -- was published and then all of the revisions thereafter, whether they're page change revisions or, you know, up -- one revision or two or three. So, that's all in that up-front record of issues/revisions.

CHAIR ANDERSON: Great. Thank you.

MS. BEHLING: ...that was discussed.

CHAIR ANDERSON: Okay. Any other comments or questions people have? So, anybody opposed to accepting the recommendation to close PR-007? Hearing none, it's accepted.

MEMBER BEACH: Sounds good. I -- I was just looking up the Blockson in the exec -- or in the summary, --

CHAIR ANDERSON: Yeah.

MEMBER BEACH: -- and it just says it was -- last met December 2018, no updates, no new development. So, I -- I --

CHAIR ANDERSON: So, it is --

MEMBER BEACH: -- don't know if it's closed or not.

MEMBER ROESSLER: I think I -- this is Gen again. I think our computer for Blockson and some of the other ones were -- where it was finished, and it seemed like it was written different. Maybe I was just being sensitive to the wording, but I don't know. Maybe somebody else knows.

CHAIR ANDERSON: Do you want to close it? Now is an opportunity.

MEMBER ROESSLER: -- okay.

CHAIR ANDERSON: Okay.

MEMBER BEACH: -- Rashaun's list, but I --

CHAIR ANDERSON: Yeah.

MEMBER BEACH: -- it's not ready. It'll be a --

CHAIR ANDERSON: I'm sorry, I'm seeing the chats here and I want to remind everybody who's in the room here that's talking to identify who you are, because those on the phone can't see that. And now I'm seeing that I'm one of the leading offenders.

MEMBER BEACH: This is Josie, and I do want to thank Kathy for your presentation and sticking with this, Kathy. I know it's a lot of work on your end and keeping it all straight. So, thank you for that report today.

MS. BEHLING: (Indiscernible) welcome. I hope it made sense.

DR. ROBERTS: Okay. Thank you. It looks like we're really close to twelve o'clock, so I think it may be a good time to -- to break at this point. They -- I think there -- that the onsite restaurant isn't open for lunch necessarily. So, I did ask about getting a shuttle to Chili's and other restaurants. Okay. Sorry. So, that's going to leave at 12:00 p.m. if you have an interest in doing that.

I did also want to let everybody know that Dr. Martinez had to drop off due to a previous commitment. She will try to log back on during the public comment period, but she's unsure if she'll be able to do that. But she wanted me to let you know. So, if there's nothing else, we can go ahead and take a break and reconvene at --

CHAIR ANDERSON: 1:45.

DR. ROBERTS: -- 1:45 Eastern. Thank you. (Whereupon, a lunch break was taken from 11:55 a.m. until 1:45 p.m.)

Roll Call

DR. ROBERTS: I do have 1:45 Eastern, so I am going to go ahead and do attendance for the Board in alphabetical order. Anderson?

CHAIR ANDERSON: Present.

DR. ROBERTS: Beach?

MEMBER BEACH: Present.

DR. ROBERTS: Cassano?

MEMBER CASSANO: Here.

DR. ROBERTS: Clawson?

MEMBER CLAWSON: here.

DR. ROBERTS: Frank?

MEMBER FRANK: Here.

DR. ROBERTS: Kotelchuck? Lockey?

MEMBER LOCKEY: Here.

MEMBER KOTELCHUCK: Kotelchuck here.

DR. ROBERTS: Oh, okay. Hi, David. Okay. And I think Martinez has logged out. Roessler?

MEMBER ROESSLER: Here.

DR. ROBERTS: Valerio?

MEMBER VALERIO: I'm here.

DR. ROBERTS: Ziemer?

MEMBER ZIEMER: Here.

DR. ROBERTS: Very good. Over to you, Andy.

CHAIR ANDERSON: Okay. So, welcome back for the (indiscernible) -- welcome back for the afternoon. We'll start with Metals and Control. Is that --

MEMBER BEACH: (Indiscernible) --

CHAIR ANDERSON: Oh, I'm sorry, Chuck. Oh, I got an old one. Okay. Chuck.

UNIDENTIFIED SPEAKER: Andy, do you --

CHAIR ANDERSON: -- and he's heading up right here. I should have known. Thank you.

SPECIAL EXPOSURE COHORT PETITION STATUS UPDATES

MR. NELSON: Can everybody hear me out there? It seems like they can. Raise your hand if you... Okay. So, my name is Chuck Nelson. I'm officially Charles Nelson. I'm going to be doing the SEC update. And we do these at every Advisory Board Meeting, and it helps update petitioners, general public, and Advisory Board with where we are with SEC petitions. So, we'll talk about those petitions that are in qualification or if we have any under evaluation, and those with the Advisory Board or any potential SEC petitions with the A314 process. That's the NIOSH-initiated petitions.

So, this slide was created about three weeks ago, and things have changed. So, I'm going to go over it as is, then I have some addendums for you. So, today we have received 261 SE -- not today, but as of creation of this, 261 SEC petitions. Last time you saw this slide, it said 260. So, I'll talk about that additional one we got. A really interesting one. I won't go in much detail though. We don't have any petitions in the qualification process. We have qualified thus far 153 SEC petitions, and there are no new evaluations in progress yet.

It slipped on me, Grady.

Okay. We have currently ten evaluations with the Advisory Board, and out of the 261, 108 of those petitions did not qualify for evaluation.

Okay. So, a little update. So, in June we got an SEC petition. We named it "SEC Petition 261," and it was related to a B-52 airplane crash on to -- near Thule Air Force Base, and it was over by Greenland. And the thing crashed over sea ice and damaged a nuclear weapon, and there was an associated cleanup. Anyways, there were some Danish people that helped with the cleanup and an individual named himself as the representative. It didn't have any of the signatures necessary to make it an official submittal.

UNIDENTIFIED SPEAKER: (Indiscernible.)

MR. NELSON: What's that? It moved again? Okay.

UNIDENTIFIED SPEAKER: Sorry.

MR. NELSON: So, the bottom line with that one is still a work in progress. We sent a letter to the individual submitting it telling him we need the proper authorizations in place to submit a petition, and we need to know a little bit more about the people that you -- that -- the cohort you want to

petition for. It's really unclear. Thule Air Force Base nor this area over there is listed as a DOE coverage facility. So, more to come on that one.

Also, so -- so, then two weeks ago we got one we named "SEC Petition 262." That one was an inadvertent submission. Somebody had a dose reconstruction that was completed, and the representative misunderstood something that Department of Labor said, so they filed a -- this thing keeps moving on me -- so, they filed a Form A submission, which is a A-314. That's something that if we can't do a dose reconstruction, we reach out to a claimant and say hey, would you like to file a petition, because we -- you know, there's a group of people we can't do those reconstructions for. So, that was an inadvertent submission, so that person withdrew that. But for the record, we gave it a petition number. That way we have all the records in place.

Then we got a petition last Wednesday, and that's from Weldon Springs Plant or Spring. I keep wanting to say Springs. It's Weldon Spring Plant. And that one currently we're looking over right now, getting into the process. So, this slide will look different on the next Advisory Board presentation. We'll have more updates.

All right. How far did this thing move?

Okay. All right. So, the first one we want to talk about that's with the Advisory Board is Lawrence Livermore National Lab. And that's for the period of 1990 to 1995. That's SEC-221. And that's just an addendum. We agreed to look at some later years and some internal radionuclides to see if there's any potential in feasibility. So that's still ongoing.

Next one up, is Han -- boy, this thing keeps moving. Why is it doing

that, Grady?

MR. CALHOUN: I don't know.

MR. NELSON: Okay. I'll move these notes out of the way in case that's causing it. I apologize.

Next one is Hanford SEC-57. So, that one is left with all issues closed, and we're working on the coexposure modeling efforts. That one's been a challenge. Been talking with Brad some about how we've split the two time periods of evaluation for this coexposure model, and a lot of issues with the earlier years. But those earlier years are when SECs already exist, so the focus really for us to make some effort -- or our progress is to work on '84 to 2021 and get that coexposure going. There's a lot of things we're working on with that. We did submit a discussion of completeness to coexposures, a white paper. It went to the SEC issues work group, and that went the end of March. And it talks about how we're going to do our completeness evaluations. And we're really trying to get some consistency among our coexposure evaluations. So, that one is taking a little while.

All right, let's see if I'm on the right slide here. Yeah, it's just moving randomly.

So, the next one is Savannah River, which is SEC-103. And, again, we're working on issues to resolve raised by SC&A and the work group. And this afternoon there'll be an update on the Savannah River Site. Next up is Los Alamos National Lab. Again, we're working on issues raised by SC&A and the work group. Little update. They did a data capture and a tour on May 5, 2023, and they finished reviewing some boxes they identified. They also did a tour of the LANSCE facility.

Next up is Idaho National Lab. And again, we're working to resolve issues on that with the work group. Again, another data capture. Went to Idaho National Lab. And that was the week of 6/26/23. And those people, I understand, went on a pretty nice tour of some of the facilities at the site. There is going to be a follow-up trip there. It's just for scanning documents that have already been selected.

We could only move one slide by itself, so I think we're on the right one. Next up Argonne National Lab, SEC-224. Again, working on resolving issues with SC&A and the work group. Report 89 and 97 are under review by the work group.

Next up, we talked about that a little earlier this morning. Josie asked the question about area code IV Santa Susanna, which is SEC-235. And we have some issues we're trying to wrap up with that. And the records center EMC, you see, has been -- actually sent us digitized records. As we get them in, they're going into our site research database and being scanned to see if we can resolve any of the outstanding issues identified by the worker.

Next up, Metals and Controls, SEC-236. And, again, there's a Metals and Controls work group update scheduled here just shortly.

Then, again, we have DeSoto facility, SEC-246. Essentially the same as Santa Susanna, that record -- the same record center is sending us digitized records, and they're coming over to us and we're going through them.

All right. So, I think -- make sure I didn't skip any slides as it's advancing by itself.

Next up is Y-12, SEC-250. That's an addendum to the evaluation

report that was presented in August 2021, and that's been assigned to SC&A. So, we're just standing by on that one.

Then we have Pinellas Plant, SEC-256. NIOSH presented that evaluation to the Board on December 2021, and SC&A was assigned to perform the ER. And I know they haven't issued an interim report, and there is a work group that, I believe, is established. So, I'll save that and maybe any other updates that work groups might have when they do their work session on work group updates.

All right. So, this is the slide showing the sites with evaluation periods still with the Board and the time period and who might be affected by that. So, firstly, is Hanford. That's '84 to '90 for prime contractors. Savannah River, SEC-103. We have it for primes and subs. The prime contractor time period is '72 to 2007, whereas the subcontractors are '91 to 2007. Then we have Los Alamos, it's '96 to 2005. Idaho National Lab, 1949 to 1970. Argonne National Lab West is '58 to '79. And of course, Santa Susanna is 1991 through 1993. And then last four, Metals and Controls, 1968 through 1997. That's for the residual period. DeSoto, SEC-246 is 1965 to 1995, and Y-12, SEC-250 is 1979 to 1994. And finally, Pinellas, SEC-256, is '57 through '90.

And then finally, potential SEC petitions. We're still looking at West Valley Demonstration Project, and looking at the period of '66 to '68. We got a lot of records, so we're looking at those records right now to see if we have any DR feasibilities.

And with that, I'll take any questions.

MEMBER CLAWSON: Well, Chuck, me and you talked a little bit about

Hanford. Could you just expand a little bit on the -- where we're at with that right now, because it's gone to the procedure group, and so is that going to postpone us from having a work group until that's run through?

MR. NELSON: I can tell you we're continuing to work on it. We had internal meetings, and we have more coming up, I think, this coming Friday. And we're pushing forward. Tim might be able to respond to some of that, because he's the one that sent it over to that work group, and I'm not sure he's heard much of anything about that.

DR. TAULBEE: I don't anticipate it delaying anything from that standpoint. This did go to procedures or the SEC issues work group, and SC&A is currently reviewing it, as -- as I recall, that Dr. Anderson sent it over there to them. And what it does is it talks about the completeness, the data completeness and monitoring completeness of our proposed method, too, so it applies to all sites. But Hanford is continuing to work on their -- on following that white paper as their guide right now. So, we're not waiting on the response back on it. Obviously, there may be a change if SC&A comes back and says no, you missed this, this, and this, but I don't anticipate that happening. So right now, as Chuck indicated, the team is pushing forward to address those completeness (indiscernible) from that white paper that we sent to the SEC issues work group.

MR. NELSON: Yeah, and some of the issues with like the monitoring completeness. You look at their program, and Hanford gets a little more difficult in the later years. They had all these contractors running their own monitoring programs, so really got to dig in. And we're trying to get you a good product, so we don't send it over and have a lot of issues with it. And

the completeness white paper actually helped focus the effort some. We're trying to get some consistencies along the different folks on the evaluation, so.

UNIDENTIFIED SPEAKER: How -- the one that -- that we sent over to the procedures people, that is site wide, that is not just Hanford, --

MR. NELSON: Right.

UNIDENTIFIED SPEAKER: -- correct? That's what I wanted to make sure. So, we can be looking forward to setting up a work group and stuff like that to be able to -- once -- once the product is delivered to us.

MR. NELSON: Yes.

UNIDENTIFIED SPEAKER: I just --

MR. NELSON: It is taking some time though. We're running into a lot of issues, and we're still working on it. I assure you of that.

CHAIR ANDERSON: Okay. I -- I -- and you did send me an update on that. I just wanted to get it on the record that -- that we're proceeding forward and that we've got -- we're reaching out to try to take care of these issues.

MR. NELSON: Absolutely.

CHAIR ANDERSON: You do have that on your review, okay. Chuck, I did want to bring up, too, on SEC-256, which is Pinellas. We do have work set up for November 20th, but -- for Pinellas, but reviewing some of these issues.

MR. NELSON: Okay. All right. Well, we've been drafting responses to the SC&A report, so we've been doing that since the day we got it, so we're preparing for that and also a lot of questions we have about different

things and put them in a nice package.

CHAIR ANDERSON: We don't have a Pinellas report through the review -- what do they call it?

MR. NELSON: NEC?

CHAIR ANDERSON: Yeah. Do we have a time period for that scheduled?

MR. NELSON: Are you talking about the interim report that SC&A issued?

CHAIR ANDERSON: I'm talking about the one that's out for -- what do they call it? They're scanning it for Privacy Act.

MR. NELSON: I'd have to know which one you're referring to. Anybody out there, like, if Maddie's there, she knows what he might be talking about.

CHAIR ANDERSON: Yeah, 256, one of you just brought up that.

UNIDENTIFIED SPEAKER: -- is online.

CHAIR ANDERSON: It is online, okay. That's all -- this one -- the copy that I have is internal, so we'll -- we'll look at that and go look in there.

MR. NELSON: All right.

CHAIR ANDERSON: Other questions?

MR. CALHOUN: Yeah, I'd just say -- sorry about that. Are you going to advance your slides, Josie?

MEMBER BEACH: Yeah.

MR. CALHOUN: Okay. So, I'm going to stop sharing here.

MEMBER BEACH: Well, hopefully you're doing mine.

MR. CALHOUN: Oh, I can.

MEMBER BEACH: I don't have (indiscernible).

MR. CALHOUN: Hopefully I can fix this -- this auto advance... (Indiscernible) go back.

(Whereupon, Mr. Calhoun and Member Beach speak off the record.)

METALS AND CONTROLS WORK GROUP UPDATE

MEMBER BEACH: Okay. Hello, Josie Beach. I want to give the update for Metals and Control (sic) work group, and I want to recognize other work group members. Henry Anderson, Loretta Valerio, Dave Kotelchuck, and new to our group, Nicole. And, I guess, I should say Brad, too, right, you're new to our group.

So, all right. First thing, there was some confusion about the class petition at the last meeting. So, this is included, and I'm going to go ahead and read who's included in this class petition. First of all, the petition was received into -- September 1, 2016. The class being evaluated by NIOSH is all atomic weapons employees who worked as facility construction and maintenance workers, including lubricators, oilers, industrial pipe fitters, engineering, technicians, mechanical, electrical, structural, maintenance supervisors, electricians, plumbers, millwrights, carpenters, instrumentation technicians, chemical handlers, waste treatment operators, and all production workers, including machine operators/helpers, and repair and maintenance (commonly called R&M) workers who worked in Buildings 4, 5, 10 in the interior areas, and Building 5, 10, 11, 12, 17 in the -- at the exterior areas at Metals and Controls in Attleboro, Massachusetts from January 1, 1968, through March 21, 1997.

So, that site is located on 100 acres in Attelboro, 30 miles south of Boston. It -- the covered time periods are the atomic weapons AWE operations from January 1, 1952, through December 31, 1967. The residual period I just mentioned was '68 to '97. There is one SEC petition for that covered period under SEC-149, under 83.14 for those earlier years.

Site map. I kind of wanted to include this because it gives you an idea of where the buildings are. And special note, if you look between buildings 11 and 12, -- I don't have a pointer -- but there was a radioactive burial waste site there. It was back in the '50s, and we'll talk about that later on. So, it kind of gives you an idea of the exterior areas and how compact that area was that workers were through -- throughout that whole area during those 29 years.

Is there any way to move --

MR. CALHOUN: Yeah, your upper left and...

MEMBER BEACH: Okay. So, the AWE operations -- I'm just going to give a little background and move forward through what we've been doing. The operations during the AWE period included fabrication of enriched uranium fuel elements and oils for the Navy, the Air Force, government-funded research, and commercial customers. Processing -- they processed the depleted and natural uranium. They had limited R&D, research and development, and fabrication of thorium fuel. They had aloe -- alloys and foils for Brookhaven and others. Production of the electrical beakers contained radium.

So, again, we'll talk about the rad -- the residual period. In NIOSH's evaluation back in 2011, the evaluation pointed out there was potential

existed for significant -- significant residual radiation from that '68 to '97 time period. The AWE areas were all cleaned at the end of operations. There was no covered radiological work done after the AWE operational period.

Operations during the residual period included fuel fabrication for high flux -- high-flux isotope reactors (HFIR) at Oak Ridge National Lab, laboratory, and other government owned research reactors. The HFIR operations exposures were not cond -- covered under the EEOIC -- EEOICPA -- I always stumble on that -- during the residual period. Formal decontamination and decommissioning, D&D, began in 1981. The site characteristics -- characterization surveys were in 1984 and again in 1992 and 1995. The site was released for uncontrollable -- uncontrolled use in 1997, except for Building 1.

The residual period exposure potential for the maintenance and control workers. Maintenance workers supported M&C facilities and had potential exposure to residual contamination from previous AWE operations involving uranium and thorium. The maintenance workers were unaware of radioactive contamination and operated without radiological controls and health physics oversight.

So, what has the work group been up to for the last seven years? In 2017, we started focusing on the evaluation report for Metals and Control (sic). The original exposure matrix predicated on standards OTIB-70 and TBD-6000, the uranium process models for AWEs. NIOSH has sid -- since included six bounding models to address workers'-identified intrusive activities during the residual period. So, we started with the two

procedures. We have six models and potentially more in the works.

NIOSH and SC&A reached a tactic agreement on bounding models, but the work group did not concur. And in 2021, we further -- further requested SC&A for more review. SC&A issued a supplemental review of M&C work group issues in August of 2022. NIOSH has since reported their responses in January of '23. SC&A responded again in April. Metals & Control (sic) work group has met twice this year; once in May, once in July. We have a future meeting scheduled for September 19th. It will be an in-person meeting.

Let's see if I can do that... Without messing up that last --

MR. CALHOUN: Yeah. I -- I -- I didn't figure it out either. Sometimes it was a cursor all the way to the right. I don't know why it does this --

MEMBER BEACH: Okay. Well, NIOSH is currently working on a response to SC&A's April 20, '23rd report -- '23 report, including an updated table comparing M&C with other AWE sites for intrusive activities and monitoring data from the D&D area or time period 1995 to 1997. So, I believe those will be in our hands really -- I thought they would be here before the meeting but should be by the end of the month. Right? Brad's saying yes, so okay.

(Whereupon, Member Beach speaks with Mr. Calhoun off the record.)

MR. CALHOUN: Sorry about that.

MEMBER BEACH: Okay. So, how does M&C compare with other AWE sites?

MEMBER BEACH: There is some degreement -- disagreement on how M&C compares. I'm sure that's a surprise. NIOSH finds M&C to be

comparable to other AWEs in levels of intrusive activities by workers during residual periods. SC&A finds M&C to be comparable to facilities with more intrusive activities, those related to renovations as defined by the NRC and found at Linde Ceramics, which is an SEC class designee in 2011.

Why is this important? The standard models from OTIB-70 and TBD-6000 assume more passive worker activities related to occupancy than, like, other non-SEC AWEs. So, for example, you're just walking through a facility, you're maybe taking readings, so kind of more passively. To address unknowns and uncertainties with intrusive activities, NIOSH developed the six additional bounding models with extremely conservative assumptions.

So, typical intrusive activities and exposure pathways during M&C residual period include sawing, drilling, jack hammering, concrete slab pouring to enable subsurface access. So, when they got into the subsurface, there was cutting, cleaning -- cleaning out pipes and repairing -- repair of frequently clogged drain pipes and radioactive sediments and scale using routinely grinders, power snakes, cutting torches, routine maintenance of utility lines, often in pits and trenches and manholes, at times going through the burial ground between 11 and -- Buildings 11 and 12, excavating contaminated soils, including those near or within the radioactive waste sites, maintenance, movement, and replacement of repurposed AWE equipment. That was a continual program with M&C during those 29 years.

What is a plausible bounding dose or method? So, the SEC regulations permit NIOSH to estimate the maximum or bounding dose for every type of cancer for which radiation doses are reconstructed that could have been

incurred in plausible circumstances. NIOSH must also determine that it has information regarding monitoring data, source contamination, source terms or processes from that site.

Maintenance -- M&C maintenance workers were not monitored. In circumstances to establish dose reconstruction feasibility under paragraph c(1)(i) of this section would require, at a minimum, that NIOSH have access to reliable information on the identity or set of possible identities and maximum quantity of each radionuclide, the radioactive source material, to which members of the class were potentially exposed without adequate protection. The Board is responsible for judging whether a proposed bounding scenario is plausible based on the above information, whether such information is available to NIOSH and can be considered sufficiently accurate under the EEOICP -- EEOI -- sorry -- those are not my favorite.

Okay. Some of our concerns, continued concerns, is the bounding approach plausible for inside subsurface work? Pre-D&D survey measurements that were done in 1995 of pipe sediment may not reflect exposures during the entire residual time period. There is a typo on here. It's 1968 through 1997. 29 years again. Additional uncertainties identified bearing on source term and exposure information, contaminated scale, and the presence of coagulants in drain pipes. NIOSH's use of extreme conservatism to account for M&C's intrusive activities, the high exposure conditions, uncertain facility activities, or unknown contamination source -- sources that results in high bounding vault -- value, but is it plausible? The use of surrogate air monitoring data from Mound excavation project for Metals and Control (sic) dust loading does not account for confined space

effects.

Okay. So, we've -- so, scale is one of the unresolved source terms we've discussed. Metals and Control (sic) drainage pipes contained radioactive settlements -- sediments and scales. Pre-D&D surveys in 1999 found sediments of up to 53,000 picocuries per gram and scale up to a million dpm per centimeter squared. DOE in Branch -- in its Bridgeport Brass hazards assessment identified potential airborne releases when cutting pipes containing the scale. M&C maintenance workers potentially exposed to both sediments and scale when cutting and cleaning out clogged pipes. NIOSH --NIOSH's inside surface bounding model only addresses sediments. They have claimed that the scale is a surveyed level, was an isolated hotspot, not systematic of -- not system -- system -- oh, sorry. My nerves get the best of me up here. -- not as systemic in the drainage system at M&C. NIOSH has not provided evidence that similar or higher levels may not have existed elsewhere in the drainage system.

Okay. Another unresolved source term is the coagulants. So, the coagulants was a vegetable based and/or mineral oil that was used in drying wire in Building 10 at M&C during operations up to 1981. It had the properties of the coagulants. Workers found that it frequently plugged up the drains. It created an unknown physical or chemical concentration effect potentially. Frequent discharge of coagulants may have consolidated and concentrated drain pipe sediments, including existing AWE uranium and thorium. Potentially elevated sediment concentrations in the early years of the residual period due to active coagulant discharge has not been addressed.

Joe pointed this out at our last meeting, and I thought it was a great way to kind of get a handle on the dose, the DR approach. So, the stool, modeled intake for indoor subsurface work is a function of one leg is the radiological source term, the other leg is resuspension factor dust loading, and the third leg is occupancy at -- time. So, two of the legs remain lacking; the source term and the dust loading. Now, I did mention it was 29 years the maintenance workers worked in the subsurface at M&C. Do we really have the data for the third leg, the occupancy time? We are relying on a handful of interviews to determine time spent in the subsurface areas, and is this adequate?

So, the Linde Ceramics precedent -- we talked a lot about Linde during our work group meetings. Linde Ceramics. NIOSH proposed bounding approach that back-applied high D&D airborne activity from jack hammering to the renovation period. The Board disagreed of the uncertainty concerning what acts -- activities actually took place during the renovation and the impact such activities might have had on the resulting dose levels suggested, that the dose reconstruction methods may not account for all exposure scenarios during the building renovation time period. Some of you may remember that was a 2011 discussion quite thoroughly.

The Board also noted that D&D activities were conducted with rad controls where no rad control measures were adopted for renovation. Therefore, the Board was not convinced that the radiological data from the decontamination efforts were sufficiently informative about exposures during the renovation period. And the US Department of Health and Human Services, HHS, concluded that it is not feasible to reconstruct radiation doses

with sufficient accuracy for the renovation period.

NIOSH finds that more relevant source terms that -- NIOSH finds it has more relative (sic) source terms for Metals and Control than it did for Linde. NIOSH notes that the maximum annual dose level for Linde was five rems/year committed effective dose, the CED, jack hammering, were much higher than those modeled for Metals and Control (sic), which were at 71 millirems a year. Two relevant remarks by the Board chair at the time. Some of you may remember this -- this discussion. If the absolute value of the exposure is relatively low, then we are willing to accept more variability in the dose if it's being calculated for an individual. And the second one a couple of years earlier, we may have a bounding dose, but is it a plausible bounding dose, given how little information we have and the fact that most of these people probably weren't engaged in the activity that we have done the dose reconstruction for?

So, what did we learn from Linde? SC&A concludes the use of high exposure or concentration values based on these D&D data to bound or represent that of other workers in a facility on a site for long periods of time would not be appropriate if their exposure potential could be higher, conditions were different, or if there is a lack of information on which to make the judgments. NIOSH disagrees, notes that M&C dose estimates are relatively low, and NIOSH has a more complete data set to characterize M&C and a better understanding of M&C maintenance work than we had with Linde.

All right, so, getting close to the end here. The summary of concerns that are still ongoing. Intrusive work activities by maintenance workers at

M&C during the residual period led to potential exposures where there is no available monitoring data. NIOSH applies the 1995 D&D survey data as basis for an upper bound for residual period exposure for radiological data from one time period to be considered informative about exposures during another time period. There should be sufficient similarity of conditions and processes between the two periods. Although NIOSH has proposed a claimant-favorable inside subsurface bounding concentration of 6887 picocuries per gram, there remains uncertainty about source terms and exposure pathways during the residual period for that long 29 years. There is sufficient information available to account for the exposure contribution of confined spaces, -- or excuse me -- insufficient information -- that changes that sentence -- high-scale releases and released coagulants in the workplace not controlled as a radiation environment, unlike that of the later D&D era at M&C from which NIOSH draws its data. The application of extreme conservatism in formulating the proposed upper-bound concentration to account for intrusive activities, high-exposure conditions, uncertain facility activities, or unknown contamination sources may not be plausible -- be a plausible approach to compensate for inadequate or insufficient information. And what are we doing?

So, NIOSH is going to provide -- I've mentioned all this before -- a formal response to SC&A's most recent paper. NIOSH is going to compare between M&C and the other AWE sites. We did that early on, and I think things have changed just a bit. So, there's a table that they're going to provide for the work group. They're also going to provide the D&D monitoring for '95 to '97. The work group will meet in person September

19th in Cincinnati. Kind of like the old days. Unusual.

That's all I have. Any questions? And then that's just the references that were used.

MEMBER POMPA: Josie, just remind you had said foil?

MEMBER BEACH: Foil, yes.

MEMBER POMPA: What are they made out of?

MEMBER BEACH: I think thorium, maybe, aren't they?

MEMBER POMPA: Thorium?

MEMBER BEACH: There's probably a lot of different foils. Anybody know? Foils?

MEMBER BEACH: There -- so we got a long list of all the things that M&C did.

UNIDENTIFIED SPEAKER: Microphone.

UNIDENTIFIED SPEAKER: Microphone.

MEMBER BEACH: I should use the microphone. So, we got a long list of different things that M&C did. They were a commercial operation, and so they were constantly changing. And so, I think the point I was trying to make there is that it was an ever-changing environment during that time period. And the foils, I'll have to get back to you on that. But I'm pretty sure they were -- I thought they were thorium, but I don't know for sure.

MEMBER POMPA: So, when you mentioned thorium and uranium, so the exposures were there?

MEMBER BEACH: Yeah. The first SEC was for thorium. Yeah.

MEMBER LOCKEY: Hey, Josie?

MEMBER BEACH: Yes?

MEMBER LOCKEY: Jim Lockey. Nice presentation.

MEMBER BEACH: Hi, Jim. You didn't see my red face, though, so that's good. But thank you. Sorry. Go ahead.

MEMBER LOCKEY: I was looking at -- at the -- how the class was -- as defined, and who were the production workers and how long were the production workers there? Is that -- I'm just confused by that. I don't -- who are these production workers from '68 on? Did they stop in '81 when D&D started or -- or what?

MEMBER BEACH: The HFIR project kept going, and so those were -- but they were -- that wasn't involved in this class. They -- it's not a covered source. So, I'm pretty sure the production workers were those folks.

MEMBER LOCKEY: So, (indiscernible) the isotope reactor work?

MEMBER BEACH: I believe so.

MEMBER LOCKEY: So, are they covered? They're not covered.

MEMBER BEACH: No, they're not covered.

MEMBER LOCKEY: That's what I was wondering. And --

MEMBER BEACH: Some -- some of the sources of that contamination is intermixed, and you can't distinguish between the two.

MEMBER LOCKEY: Right. I understand that. And did it -- did everything stop in '81 when the D&D started?

MEMBER BEACH: No, no. Everything in what way? What do -- what do you mean?

MEMBER LOCKEY: Well, the -- the D&D began 1981, so I was wondering when --

MEMBER BEACH: D&D actually started in -- the residual period started

in '68 and the HFIR went on -- somebody have a date for that? Anybody know how long the HFIR kept going?

MEMBER KOTELCHUCK: No, I don't remember right off the top -- top of my (indiscernible).

MEMBER LOCKEY: (Indiscernible) was '68 to '70 to '97 --

MEMBER BEACH: Yeah, that's --

MEMBER LOCKEY: -- (indiscernible) you said decontamination, decommissioning --

MEMBER BEACH: Didn't start till '81. Correct.

MEMBER LOCKEY: Right. (Indiscernible) --

MEMBER BEACH: So, there was that HFIR project -- oh, I'm sorry. I'm talking over you. Go ahead.

MEMBER LOCKEY: What was going on between '68 and '81? Was that the HFIR project?

MEMBER BEACH: I believe it may have been. But then keep in mind, during that time period, they were revamping and putting out different projects -- products during that whole time period. So, the place didn't exactly shut down. There was actually refurbishing and re -- reworking and putting out different things, not necessarily contaminant -- radioactive.

Brant wants to speak.

MR. ULSH: Yeah, Jim. Is this on? Okay. You asked if the workers who were involved in HFIR are covered. That work is not covered, but keep in mind, the residual period is ongoing, so people who are at that site could be in that class, even if they're working on HFIR. Is that -- I just wanted to clarify that.

MEMBER BEACH: Yeah. That's -- yeah.

MEMBER LOCKEY: So, the maintenance people are working around doing the HFIR work are going to be covered, but the actual production workers were not?

MR. ULSH: Well, the work itself -- the HFIR work itself is not covered, but there could be a production worker there working on HFIR who is still going to be considered a covered employee for the residual period.

MEMBER LOCKEY: Oh, I see. I understand. Okay. Got you.

MEMBER BEACH: Okay. So, I just got a clarification. The production workers were not radiological workers. They were working on non-radiological processes. That is a text from Mike, the petitioner, which I'm sure he'll clarify when he speaks later also. HFIR ended in 1981. Most of Building 10 was repurposed for non-radiological work.

MEMBER LOCKEY: Now I understand. That's helpful.

MEMBER BEACH: Okay. And Dave had a comment?

MEMBER KOTELCHUCK: Yeah, I just wanted to talk purely for the -- for our Board in full. There's an awful lot of focus on the subsurface work in Building 10 where they had to take out the concrete and go down and work in the pipes in -- in enclosed conditions. One of the reasons that there's so much of a focus on that is that we were never able to find work records for where the workers were working. They might have been hired as an electrician, they might have been hired in some other capacity, but in the plant, and it was reported widely by the folks who worked there -- it was a non-union plant. People and -- emergencies came up. That's -- that's what the -- these people had to deal with. And the -- when the emergencies

came up, people had to come in.

And so, without any records, the electricians working subsurface for some period of time. All the other employees did. They were rotated around as needed when an emergency developed. So, -- so, therefore, we cannot separate out and say, well, there are people who were working in some of the other buildings but didn't work in Building 10. We don't know who worked in Building 10, except that everybody was eligible. There was no way to separate them out. So, unless we can -- well, unless determine an upper, you know -- a -- the exposure for -- for Building 10 or set a limit on it, we're stuck. And we have to give -- every person has to have the same -- the same dose reconstruction or the same -- the same maximum -- or the same maximum exposure that -- that contains the exposure of each individual.

MEMBER BEACH: So, let me just briefly comment on that. We're bound by the petition class definition as it stands, what I read first off. That would only change if DOL can't administer the class in that way, then DOL could potentially change it to everyone. Right now it's not everyone, Dave.

MR. RUTHERFORD: This is LaVon Rutherford. Can I make a comment on that?

MEMBER BEACH: Please do. Yes, go ahead.

MR. RUTHERFORD: I actually tried to talk earlier and had a little trouble. One, the class definition, although the class evaluated was defined that -- that Josie identified with specific individuals, the determination on the final class if it were made to move forward to the secretary, would be based on be based on the infeasibility time period and the potential exposure to

those workers. We are not bound by the class provided by the petitioner. We are bound -- if we determine that we -- that a special exposure cohort is going to be recommended, we have to set the boundaries on the class based upon the infeasibility time period. When did this infeasibility start and when did it end and who are potentially involved in that. What worker -- workers are potentially involved. I think what Dr. Kotelchuck was saying, that it could have been anyone, anyone that is eligible as a claimant.

MEMBER BEACH: Okay, thank -- thank you. I understand -- understand that better now. And then we are looking at the -- the dosimetry for the workers from '95 to '97 to kind of get a handle on what their records were, because right now, the earlier folks don't have any records. So, that was -- that was another reason we asked for that, for the cut off period, potentially.

MEMBER LOCKEY: Josie, Jim Lockey.

MEMBER BEACH: Hi, Jim. Go ahead.

MEMBER LOCKEY: On slide seven, you said the maintenance workers were unaware of radioactive contamination.

MEMBER BEACH: Correct.

MEMBER LOCKEY: Is that from sixty -- is that from '68 on up until when?

MEMBER BEACH: Yes. '68 up through '97, 1997. They were unaware. Even when the D&D folks came in and started doing D&D work, the -- the workers weren't informed of what was happening or why it was happening.

MEMBER LOCKEY: That was my question. I was wondering about '81

when D&D came in. That's rather -- that's rather incredible that they didn't inform them.

MEMBER BEACH: Yeah, it was. I don't know if you remember the earlier presentation back in 2016, but yeah, a lot of this stuff came out early on. Yeah, it was pretty extraordinary what they -- what they didn't know.

Dave Kotelchuck, do you have another question for me?

MEMBER KOTELCHUCK: Yeah, this is (indiscernible) not a question. But, in -- in 1982, the NRC said that for Building 10, and I believe an -- and another building, but for Building 10, that they no longer needed to have radiological limitations on their work, that that -- they -- they affirmed that the place was -- was clean in terms -- and it was treated like a regular facility.

MEMBER BEACH: Correct.

MEMBER KOTELCHUCK: So -- so, work -- so, it wasn't just simply that the workers were not provided information. The government agency affirmed that it was not dangerous to work there, which in -- in retrospect, seems to me was a mistake. There were problems that kept -- that kept radiological sources that kept being found, and that was -- that was concerning.

MEMBER BEACH: Yeah. And you recall those were swipe samples at surface level. Nothing was ever taken -- no samples below ground during the '81. So -- so, it was just above ground and on the walls.

MEMBER LOCKEY: Lockey. It sounds like it was direct -- it was directed at potential production workers and not the maintenance workers.

MEMBER KOTELCHUCK: It was -- it was kind of a building -- a building

cleanup. So, it was surface contamination and all that. So, it really didn't -- (indiscernible) nothing being done in the building would be in comparison to other places that have been adequately cleaned and (indiscernible) removed, and surfaces cleaned.

MEMBER BEACH: Right.

MEMBER KOTELCHUCK: But I couldn't deal with if they're continuing to do work, move equipment and things like that.

MEMBER BEACH: Correct. To get to the floor. So, any other comments or questions?

MEMBER POMPA: Josie, I have a question.

MEMBER BEACH: Go ahead, David.

MEMBER POMPA: When we talk about the contamination, are we talking contamination exposure internally, ingestion inhalation, and externally?

MEMBER BEACH: Yes, with a potential for both. Yes.

MEMBER POMPA: And we don't have data to support how much?

MEMBER BEACH: The data is from sample swipe data in '81, '82, '95, and then the D&D data that they took when they started digging up the entire site.

MEMBER POMPA: So, the potential could be -- come from not only handling the part, but grinding the part and the jack hammering and so forth?

MEMBER BEACH: Right. That's why I made mention of those. They would go into the subsurface, they would jackhammer through the floor, cut the concrete slabs out, and then they would go in and excavate the dirt, dig

out a pipe. They would try to clean out the pipes which were contaminated or were clogged with, like, snakes, different things like that. But when they couldn't get through, they would have to cut out the pipes and unclog the drains and then re-put pipes together and then bury them again with no -- no -- no idea that was contaminated. So, all that dirt, if it was contaminated, ended up just right around them.

MEMBER POMPA: So, they weren't protected. When you say the concrete, that also creates silica dust, which creates a --

MEMBER BEACH: Yeah.

MEMBER POMPA: -- pulmonary issue.

MEMBER BEACH: Correct. And sometimes they use subcontractors, but a lot of times they -- for smaller jobs, it was their house guys. Yeah. Any -- any other questions? Comments? Okay. Do we have time for petitioners or not -- or is that later? It is, okay. All right. That concludes my update.

CHAIR ANDERSON: Other questions? No hands, okay.

BOARD WORK SESSION

CHAIR ANDERSON: So, now we're going to go to our Board work session and go over work group reports.

MEMBER BEACH: (Indiscernible.)

CHAIR ANDERSON: You could do --

MEMBER BEACH: -- get these over with?

CHAIR ANDERSON: Yeah.

MEMBER BEACH: So, LANL, -- LANL, we heard earlier from Chuck, it

goes from 1996 to 2005. We've been waiting quite a while for two reports from SC&A, and I understand that they are with their editor and they're due out at the end of August. It's 100-page report, and it covers the 102, 103, and 101, the reports NIOSH put out. And then I got a report from LaVon, which thank you for that, LaVon. They are working on two documents, so we're going to see two. The first one is in a memo form, and I didn't write it down. It's just -- I'll read it from his slide, weight of evidence supports NIOSH ability to bound LANL TA 53 doses for 1996 through 2005. That document should be released in September. And the second document they're working on is Report 107, dose estimation from intakes of exotic radionuclides at LANSCE, 1996 to 2005 again. I believe when we get that 100-page report from SC&A, the work group is going to need some time to review, read, and then if the ones from NIOSH come out soon after that, we're probably looking at a work group meeting in the November-December time frame, depending on if they come out when they're supposed to. But it'll be -- it'll be a couple of months that we'll -- the work group will need it in their hands. That's all.

MEMBER CLAWSON: That's all. Yeah. So, I'm going to -- we heard earlier today about Hanford. We (indiscernible) I want to evaluate what we've got outstanding right now and be able to be setting up a work group for Hanford. The other one was Pinellas. Earlier they said that the report was out online. It is not out online. It's -- it's still out -- it's got to go through OGC, and it's got to have 508 prepped before posting.

UNIDENTIFIED SPEAKER: I'm sorry about that. I misspoke. I just checked too. It's not available to the public. I'm not sure why. We can look

into that. It might have just got stuck somewhere in the posting. Report is done. I mean, you have (indiscernible).

MEMBER CLAWSON: So, --

MR. OSTROW: This is -- this is --

MEMBER CLAWSON: -- when will --

MR. OSTROW: -- Steve. I was going to say, this is Steve Ostrow (indiscernible). I also looked, and it's not publicly available (indiscernible) report. SC&A submitted it into the process (indiscernible) exactly two months ago, June 16th, and also, I'm not sure where it is in the process.

MS. GOGLIOTTI: Steve, it needs to be 508 prepped. I spoke with our editor. She guaranteed us that it would be out before the November meeting now.

MR. OSTROW: Okay. Thanks, Rose.

MEMBER CLAWSON: Thank you both. I -- I hope that we get it a little bit before that work group meeting, because I want people to be able to review it and go through these things. It has been out there quite a while, and I hope that we get it to this pretty soon. But anyway, that -- that is in that process.

We have a work group for Pinellas on November 20th that is set up at this time. That's it.

MEMBER BEACH: I forgot to add that LANL, Brant Ulsh has also newly taken over that work group, so welcome, Brant.

CHAIR ANDERSON: Any of those on the line have updates since we last met?

MEMBER ROESSLER: Henry. This is Gen. Did you ask for more work

group reports?

CHAIR ANDERSON: Yes.

MEMBER ROESSLER: Yes. I'm finding you a little bit hard to hear, but I can do an update on ORNL/X-10.

CHAIR ANDERSON: Good.

MEMBER ROESSLER: Okay. Well, our last work group meeting was held in June of 2021, and this is just kind of a review here. At that time, three of the seven findings remained open for NIOSH to address. Whoops, I think I'm shutting off for a minute there. Of the six observations, four were closed and two remain for NIOSH to address. Dr. Hughes, who is our NIOSH leader, reports that NIOSH is working on addressing the remaining issues by developing a coexposure approach for the exotic radionuclides. For this, they're revising the dose reconstruction approach presented, and they're also addressing the dose reconstruction approach presented for iodine at ORNL.

This iodine approach has been removed from Report 90 and will be moved to the coexposure approach. This is being worked on by doing additional data collection and review. A revision of Report 90 was sent to the work group in March 2023, and we looked at that and then asked SC&A to review this revision, and that was at the last Board of meeting on April 20th. Dr. Hughes says that there's not much else to report for now. NIOSH is still researching records, which includes data capture from ORNL. (Indiscernible) address issues with the iodide dose reconstruction approach. This work is ongoing. So, that completes our -- our report. Any questions?

CHAIR ANDERSON: No.

MEMBER CLAWSON: Gen, this is Brad. I just wanted to tell you that your picture was up on our screen, and you're looking really good. It was good to hear your voice. I wish you were here. I've missed you.

I did want to -- I want to make one more work group comment. ANL West, I've got a -- they're preparing the site profile update. NIOSH is scheduling SC&A to review of the work group. There was response to find -- finding ten regarding neutron dosimetry, and they're currently reserved -- resolving internal review comments on the data, to the MT film response. And they're also -- NIOSH is cross-training some new members. We have the role for INL East, so I wanted to do that.

I'd also like to -- on Los Alamos, we went down and had a tour of the LANSCE facility, and I'd really like to tell Juan how much I appreciate that. That was -- that was an absolutely amazing tour that we took, and the knowledge that was into that and the -- trying to understand the work that they are actually performing there and stuff. It was just absolutely incredible. I just wanted to make a comment on that. I really thank LANL and the people that they put in place to be able to have us come down. It was -- it was just a phenomenal tour. I really appreciate it.

MR. RUTHERFORD: This is LaVon Rutherford. Yeah, I wanted to echo Brad's opinion on that tour. That was a phenomenal tour. It's one of the best tours I have ever been on. And if DOE's listening, I've already told them that it was definitely a great tour. Thank you.

MEMBER BEACH: Okay. I can't let the INL tour go without someone saying something about it, because that was one of the best backdoor tours I've ever had and saw more things at INL than I've seen in several previous

tours and in my time training. So, I can't remember the gentleman's name. John, do you remember?

DR. CARDARELLI: Connor Williams.

MEMBER BEACH: Connor Williams. He did a phenomenal job. We really appreciated that tour also. I can't let that pass.

CHAIR ANDERSON: Any other pats on the back we want to pass along today? Okay. Any other updates? Dave? You're on mute.

MEMBER KOTELCHUCK: Thank you. I was -- I just wanted to say that I --finally did -- gave a report to the dose reconstruction review's methods work group. They had asked the question -- I believe, actually Nicole, I think, you had asked me a while ago to define the role of -- of the working group, and I tried to answer it in a letter sent out to working group members. And we have been focusing in the past years on looking at professional judgments, particularly -- specifically with respect to the blinds that we've been doing. We've done 50 blinds already. So, that -- that was done.

And I -- I had asked -- I've asked Rashaun who'll be in touch with our SC&A folks about updating some of our reports. And then I would like to schedule a meeting after those reports are done or on the way to being done. We'll start to schedule a meeting later on this year. So, I just wanted to mention that.

Also, from the dose reconstruction review subcommittee, we have been waiting for a very long time to get the case reviews. The case -- NIOSH could get done on set 30 -- set 30, the various cases so that we can go over them. We have not had a meeting in over a year from our

subcommittee. We had in the past been very active. Now, I realize we may not be high on the priority list, but I am asking again that people try to finish the NIOSH reports soon so that we can get back going again and meet our goal of reviewing 1 percent of all of the dose reconstructions that have been completed.

CHAIR ANDERSON: Thanks.

MEMBER KOTELCHUCK: That's it.

MS. GOGLIOTTI: Dave, if I could clarify, I believe we've already discussed the 30th set.

MEMBER KOTELCHUCK: I thought we had discussed --

CHAIR ANDERSON: The 31st.

MEMBER KOTELCHUCK: I thought we had discussed 29 and completed and we were doing 30, but let's forget about the numbering, if in fact, it is number 31 we have, basically we're waiting for NIOSH to get some cases done that we can review.

MS. GOGLIOTTI: The 31st set, we just recently completed the one-on-one's for, --

MEMBER KOTELCHUCK: Yes.

MS. GOGLIOTTI: -- and they're currently with the editing team. They need to get reissued with the edits that were requested from the one-on-one's. So, NIOSH doesn't have access to those case files yet.

MEMBER KOTELCHUCK: I see. Well, I didn't realize that that was the -- that was the delay. But we do -- we really want to get going again. The last time -- the last time that the subcommittee met, we were doing the last two of the blinds, and that was in April of last year, so.

Ms. Gogliotti: I agree it has been a while. We are very close to wrapping up the 32nd set, we'll be hoping to start the one-on-one discussions with those soon.

MEMBER KOTELCHUCK: Okay. Well, hope we can move the process along.

MS. GOGLIOTTI: And if I may, I just have another update. At the last meeting, you -- the Board requested that we put together a training for our new Board members on dose reconstruction. And that meeting has been scheduled for September 21st. And I can send out an invitation to all Board members if they're interested in sitting in on that. But it is scheduled for new Board members.

MEMBER KOTELCHUCK: Great, thank you.

CHAIR ANDERSON: Yeah, thanks, Rose, for all that. Other comments, updates? I think we had a good update from NIOSH on the activities, so the others that are still underway. There's reports due from SC&A, but the committees haven't met.

Do you want to make any other comments?

DR. ROBERTS: Yes, sure. So, during the April Board meeting, there were three comments that were submitted to the public record, all of which concerned Pinellas. So, there was a comment about records at the University of Albuquerque, another comment about neutron generator work being moved to Santia between 1992 to 1994, decontamination and decommissioning of Pinellas was 1994 to '97. So, the DCAS director has responded to the commenter about both of those.

And then finally, I believe I read a letter or comment submitted by a

represent -- representative during the meeting. And then one of the issues raised is that petitioners would like the Board to delay a decision until SC&A can review 16,000 pages of new records captured by ORAUT in 2022. So, I believe that's being worked on. And I believe that's all the comments that were submitted in April.

Okay. Are we ready to go on scheduling? Okay. So, for the next Board meetings, I think we're pretty much caught up on the schedule. We are scheduled to meet again December 6 and 7th of this year, I believe, in the Livermore area, California. We have a teleconference scheduled for February 14th of 2024. Another face-to-face or in-person meeting, April 17th or 18th of 2024. So, right now we need to schedule another teleconference for June of 2024 and in-person in August of 2024. So, if people want to consult their calendars. Start with --

MEMBER CLAWSON: Could I just ask one thing?

DR. ROBERTS: Yes.

MEMBER CLAWSON: We -- you know, the Board, we meet every -- three times a year and everything else like that, and we prepped months or whatever back and forth. But I would really like, especially coming next year, that we stay away from December and these major -- when we've got a lot of major holidays and everything else like that. They -- they make it very difficult for travel and everything else like that.

I'd just like us to -- I don't know how other Board members feel, but I'd like to try to keep them away, especially in December time period where there's so many things going on either before or after, you know, if possible. I know that we try to do it every three months, but I'd like to see us kind of

try to stay away from that, the major ones.

DR. ROBERTS: Sure. Do other Board members have a reaction to that?

MEMBER POMPA: I agree on December because (indiscernible).

(Whereupon, several Board members speak simultaneously.)

MEMBER FRANK: The problem -- this is Arthur Frank. The problem is do we do it earlier, which runs into November and Thanksgiving, or do we do (indiscernible) January where the weather is even worse than December?

MEMBER BEACH: I was going to --

UNIDENTIFIED SPEAKER: (Indiscernible.)

MEMBER BEACH: I was going to comment the same thing. Maybe earlier in the month of December after the November holiday. But if -- if you change December, then you have to change every single time period to keep it on kind of the rotation that we're on. So, -- so, I would agree with earlier in December, rather than switching months, because which way do you go?

DR. ROBERTS: Well, currently, our December meeting is like the 6th and 7th, so it's --

MEMBER CLAWSON: Early.

DR. ROBERTS: -- earlier.

MEMBER BEACH: Earlier than that.

DR. ROBERTS: Yeah.

MEMBER FRANK: Next year it could be the 3rd, 4th, and 5th, Tuesday, Wednesday, and Thursday of the first week.

DR. ROBERTS: Okay. Dr. Cassano?

MEMBER CASSANO: Yeah, I just -- I agree with trying to move it. My December looks like it -- it's crazy. I'm in Oklahoma for two days before, and then I'm going out to Livermore, and then I'm back in Florida for -- for other stuff. So, December is just crazy in general, you know. But if you were -- I agree. If you move it, you're going to have to move it to before Thanksgiving, and then everything would be one month earlier. Then February is a lousy month, too to travel from anywhere, I think. So, I'm not sure there is a solution.

DR. ROBERTS: Okay. Any other comments?

MEMBER BEACH: Well, I guess for -- it's probably a one-day meeting. What's the preference? A Tuesday, Wednesday, or a Thursday? Which one works better for most people? The beginning of the week? The middle of the week? Like this one is Wednesday. Does that mess up everybody's full week?

MEMBER FRANK: Well, Tuesday is said to be the lightest travel day of the week, so it's easier to travel on Tuesday and Wednesday, and go home.

MEMBER BEACH: There you go.

MEMBER CASSANO: Are we talking about December? Are we talking about --

MEMBER FRANK: Talking about next year --

MEMBER BEACH: Yeah, December.

MEMBER FRANK: -- in December.

MEMBER CASSANO: December this year December, or next year December? MEMBER BEACH: This year.

MEMBER FRANK: Next year.

MEMBER BEACH: Because we have a meeting -- a meeting that we didn't know if we'd have two days. So, my question was, if we're only going to meet one day, what's the best day to meet, Tuesday or Wednesday or Thursday? Staying away from Mondays and Fridays?

MEMBER CASSANO: Well, we have to travel on Monday --

MEMBER BEACH: Correct.

MEMBER CASSANO: -- if we're going to meet on --

MEMBER BEACH: Correct.

MEMBER CASSANO: -- so I would say keep it on Wednesday, the 6th, and you travel on --

MEMBER FRANK: Yeah, Tuesday.

MEMBER CASSANO: -- Tuesday that -- yeah.

MEMBER FRANK: Especially for those of us on the East Coast who are going out to California.

MEMBER CASSANO: Yeah.

MEMBER FRANK: It will take all day to get there.

DR. ROBERTS: I see other hands raised. Paul?

MEMBER ZIEMER: Yes. I -- I didn't come to this meeting for certain reasons, but Wednesday, I think, is the best bet on that. Tuesday is not a bad travel day. Usually Thursday or the weekends -- Mondays and Fridays, you got a lot of business travelers.

DR. ROBERTS: Okay. So, and in -- Dr. Cassano, did you have another comment?

MEMBER CASSANO: Oh, no, I'm sorry. I forgot to lower my hand.

DR. ROBERTS: Okay. All right. Well, here's an uncomplicated

meeting, the teleconference for June. So, I have a calendar. I'm just trying to identify the best week to do that teleconference.

UNIDENTIFIED SPEAKER: (Indiscernible) travel on Tuesday and meet on Wednesday?

DR. ROBERTS: I think so.

UNIDENTIFIED SPEAKER: The 7th/8th. Do December 7-8 instead of --

DR. ROBERTS: Okay. December 8th.

UNIDENTIFIED SPEAKER: -- 6.

MEMBER CLAWSON: December travel is the 5th, right?

MEMBER BEACH: Yes. Yeah, it would be the 5th with the meeting on the 6th.

MEMBER LOCKEY: So, if we're traveling on Tuesday then, December 5th with the meeting on the 6th?

MEMBER BEACH: I'm wide open for June, so whatever date everybody agrees on.

MEMBER FRANK: The week of the 17th through the 24th?

MR. CALHOUN: That's basic --

DR. ROBERTS: Are you -- are you saying that's a good week for you?

MEMBER FRANK: Yes.

UNIDENTIFIED SPEAKER: Hello? I'm sorry.

MR. CALHOUN: Oh, did you turn me off?

UNIDENTIFIED SPEAKER: Go ahead.

MEMBER BEACH: Grady, there's some at the end of the table?

MR. CALHOUN: All right, here we go. I actually am off two weeks of

June, so I'm only available the week of the 9th through the 15th and the 23rd through 28th. But it's a call. I mean, you can do it without me, you know. The gang is here.

MEMBER FRANK: The week of the 24th?

MR. CALHOUN: Yeah, that works for me.

DR. ROBERTS: Okay. So, that could work. Tuesday? Wednesday? Thursday? any day better than the other?

CHAIR ANDERSON: Not at this point.

MEMBER BEACH: Yeah.

CHAIR ANDERSON: It will come up.

DR. ROBERTS: I'm sorry? Someone --

MEMBER FRANK: Wednesday.

DR. ROBERTS: Wednesday is best?

MEMBER CASSANO: Either one, it doesn't matter.

DR. ROBERTS: Okay. So, Wednesday, June 26th, and typically we start at 11:00 a.m. Eastern. All right. And now we need to turn to August. And I would say later in the month. I'm wondering how the last week of August works for people. Traveling on a Tuesday, I guess. This would be a face-to-face potentially. So, if we decided traveling on Tuesday, meeting on Wednesday, that would be August 28th and possibly the 29th.

MEMBER CASSANO: This is Torrie. That's gets into the Labor Day weekend travel, and if you're anywhere near DC or beaches or anything like that or even New York, it's impossible to -- you know, it's going to be impossible to travel that week.

MEMBER BEACH: Is there a problem with the middle of the month like

normal?

DR. ROBERTS: Yeah, for me it is. What about the week of the 4th?

MEMBER BEACH: That's fine with me.

MEMBER FRANK: That'll work.

MEMBER BEACH: It's actually better. Back to school at the end of the month, so.

DR. ROBERTS: Yeah, I think it varies for different school systems.

MEMBER BEACH: Yeah, oh, that's right.

DR. ROBERTS: Okay. So, are we talking the 7th and 8th then? Okay.

MEMBER FRANK: Any thoughts about where that might be?

DR. ROBERTS: No, not right now.

MEMBER BEACH: I want to throw out Attleboro, Massachusetts.

DR. ROBERTS: Right. But we have to -- we have other meetings first...

MEMBER BEACH: I just wanted to throw that out. Sorry.

MEMBER FRANK: So, are we talking on the 7th and 8th or we talking the 6th and 7th, traveling on Tuesday, the 6th, meet on the 7th?

DR. ROBERTS: Travel on the 6th, meet on the 7th, possibly the 8th.

MEMBER FRANK: Okay.

DR. ROBERTS: I think we're up to date. We usually try to plan about a year out, so I think we are good to go. So, thank you.

MEMBER FRANK: I'm only suggesting because of the difficulty we had and the discussions we've had about December, should we try to move it all the way to the December meeting as well? That first week of -- plan on that first week of December, the 3rd and 4th?

DR. ROBERTS: Sure. Probably (indiscernible). So, everyone is good with, I guess, travel the 3rd, meet the 4th, and possibly the 5th.

(Whereupon, various members and Dr. Roberts spoke off the record.)

DR. ROBERTS: So, this is December 2024. So, traveling the 3rd, meeting the 4th, and possibly the 5th. Okay. Well, that gets us ahead of the game. Thank you.

CHAIR ANDERSON: I do have one thing. I think -- I believe that we still got -- we've got for dose reconstruction and stuff like that, I think we've got (indiscernible) the new DR (indiscernible).

(Whereupon, various Board members and Dr. Roberts speak off the record.)

CHAIR ANDERSON: So, we're on break until a little bit before 4:00? Is that okay, everybody? Okay. Thank you. So, we're on break.

(Whereupon, a break was taken from 3:14 p.m. until 4:00 p.m.)

DR. ROBERTS: Okay. It is about 4:00 p.m. Eastern, so I'll do a quick roll call for the Board starting with Anderson.

Roll Call

CHAIR ANDERSON: Here.

DR. ROBERTS: Beach?

MEMBER BEACH: I'm here.

DR. ROBERTS: Cassano?

MEMBER CASSANO: Here.

DR. ROBERTS: Clawson?

MEMBER CLAWSON: Here.

DR. ROBERTS: Frank?

MEMBER FRANK: Here.

DR. ROBERTS: Kotelchuck?

MEMBER KOTELCHUCK: Here.

DR. ROBERTS: Lockey?

MEMBER LOCKEY: Here.

DR. ROBERTS: Martinez?

MEMBER MARTINEZ: She shouldn't be because (indiscernible) did. Pompa?

MEMBER POMPA: Here.

DR. ROBERTS: Roessler?

MEMBER ROESSLER: Here.

DR. ROBERTS: Valerio?

MEMBER VALERIO: Here.

DR. ROBERTS: And Ziemer?

MEMBER ZIEMER: Here.

DR. ROBERTS: Andy?

CHAIR ANDERSON: Next up, Savannah River work group update, Brad?

MEMBER CLAWSON: Is it on?

UNIDENTIFIED SPEAKER: Is it turned on? Is it on?

SAVANNAH RIVER SITE

MR. BARTON: Well, good afternoon, everybody. My name is Bob Barton, and I will be presenting the Savannah Site SEC update, basically letting you-all know what the work group's been up to recently. While I get

to give the presentation, I want to recognize Ron Buchanan and Joe Fitzgerald who unfortunately couldn't be here today, but they're the primary authors and really deserve the credit for this.

There is a couple of recent milestones for how we got here. July 12, 2021, the Board sent a recommendation letter to the secretary of HHS, and it appeared in the Federal Register of October of 2021. April of the next year, 2022, SC&A issued a focused review of ORAUT Report 92 and the remaining petition SEC 103 evaluation report period 1991 to 2007. And you notice how one talks about Report 92. We'll mention that one a few more times before this presentation is over because SC&A feels it's the real crux of the matter here. January 2023 NIOSH issued a response to SC&A's focused review and a previous item in January 2023 to the Board. And in March the work group met again via teleconference.

So, here's the actual recommended SEC definition. It's rather boilerplate, so I really don't want to read the whole thing in, but it's basically subcontractors from 1972 through December 1990, and the only real designations are that it does not include the prime contract workers since it's du Pont up until early 1989 and Westinghouse Savannah River Company after that. So, this is, again, from the recommendation letter on the previous SEC. The reason we're kind of going over this, it's just to recall how we got here and what we're talking about now, which really appear to be (indiscernible).

But from that recommendation letter from July 2021, subcontractors and construction trades workers, or CTWs, conducted a broad range of work activities. They may have worked in high contamination and high airborne

radioactivity areas, and they may have been utilized for short-term, high-exposure work tasks. It goes on to say subcontractors, CTWs may have been transient and not have worked for long periods at SRS and also may have been intermittently tasked with nonroutine jobs on the work permits, and thus were not likely enrolled in the routine (including termination) bioassay monitoring program.

Further, the letter goes on, the Board finds there to be insufficient information, including a lack of job-specific radio bioassay monitoring data for subcontractor construction-trade workers, and assurance of workplace monitoring and source term data to enable NIOSH to estimate with sufficient accuracy all potential internal doses from radionuclides associated with fuel handling, reactor operations, fuel reprocessing, and/or research activities, to which the proposed class may have been exposed during the time period in question. And again, we already established an SEC for subcontractors '72 to 1990.

So, the question really before the work group right now is when did information become sufficient to enable dose reconstruction with sufficient accuracy. And that's the remaining SEC period for subcontractors '91 through 2007. In its 2022 focused review, SC&A examined the following information: basically, how the program was run, job-specific bioassay policies, procedures, and practices and for implementation during this time period. The assurance of the workplace monitoring, essentially data completeness, the degree to which these job-specific bioassays were actually submitted. And the representativeness and scope and the matching of radionuclides in Report 92. And we'll get into what "matching" is, because it

creates an important concept in these discussions.

So, the way this is really structured is SC&A 2022 had five main conclusions, so with each conclusion, I'll give what the SC&A review said, NIOSH's response, and basically a preliminary SC&A response to the response. Now, these responses to the responses have not had to be formalized in document form, which is something we owe the work group. We'll all see that when we get to the path forward.

So, conclusion one. The sampling premise is not sufficiently grounded in actual SRS practices. And it's, again, back to Report 92. Our Report 92 is basically an evaluation of subcontractor bioassay and SRS. The basic idea was let's go get a bunch of RWPs from the site, capture them, take those list of names to identify subcontractors, and we'll see how many of them were actually monitored. NIOSH responded that well, the transition between the SRS operating contractors, that's du Pont and Westinghouse, did lead to an increase in RWP job-specific bioassays because in the earlier '90s, it was really reliant on procedures versus actual RWP forms that specified bioassay requirement. And they also go on to say that the use of these RWP forms with bioassay checklists that was seen later in the '90s lagged behind the procedure-based bioassay collections. And the main conclusion here, and it's repeated at least two other times, I believe, is really the absence of bioassay requirements on these RWPs is irrelevant in the context of cumulating a coexposure model.

So, this is SC&A's initial response through discussions in moving forward. We noted the RWPs were not implemented really to any extent at WSRC by procedure until 1992 with the revision of the 5Q Manual, so

basically, the RADCON manual for SRS. And we found that demonstrable implementation of RWP job-specific bioassay requirement does not appear in the work place until about 1994 and 1995. So, from '91 until about '93, we're seeing, you know, 3 percent, 4 percent, and sometimes 0 percent. '94 that number of RWPs that actually had the job-specific bioassay requirement jumped to 60 percent, and by 1995, it was over 80 percent. So, they clearly were phasing in the actual bioassay requirements on the actual RWP.

SC&A believes that these RWP requirements for bioassay are really the only valid marker for job-specific bioassay program performance, and in the face of SRS nonconformance findings in 1997 and 1998 (indiscernible) a little bit -- actually, looking at the RWPs and whether the workers were monitored is of upmost importance.

The second conclusion: Results for direct and effective monitoring may be overstated. Once again, Report 92 was designed to take a look at RWPs and find out how many of those workers were monitored. But also, this term "effective monitoring" refers to workers who are on the same RWP but maybe were not monitored directly, however, but their coworker was basically working next to them in the same environment doing the same work, you can say they were effectively monitored because those records would be included in any subsequent coexposure model.

So, the SC&A review. We said that NIOSH ought to address all of the radionuclides listed in the RWPs. I believe the language was something like at least one sample per worker would be considered directly monitored. So, therefore, the percentage of these matching results of directly monitored to effectively monitored may be overstated.

In the NIOSH response, they agreed that they did not address all the radionuclides but have since updated those tallies in the 2022 response. And I guess, more importantly, NIOSH contends that their conclusion has not changed. The coexposure model can still be constructed. SC&A's initial response, again, we know that they updated their tallies with weighted point estimates, and you can find those values in Table 5, and we note that they're very similar to the values in SC&A's 2022 review.

Conclusion three: This gets into how you match one worker who's monitored on an RWP with another worker who maybe is not monitored for the matching, so that effective monitoring bioassay. 2020 review found that during the '91 to '98 period, plutonium coworker matches on the same RWP were nearly 96 percent. But if you include additional criteria, for example, requiring the same date, same time of day, and the craft, this percentage basically gauging how well the workers were monitored, you get down as low as 45 percent.

NIOSH noted in its response that while not documented directly, the criteria they used was a subcontractor on the same RWP, same date, same time. In addition, a laborer could not be used as a coworker for another craft.

So, in summary, coworkers used for effective monitoring matching, we only have the same or higher exposure potential than the unmonitored worker, and that SC&A's requirement of the same RWPs, same time and same craft are just -- are too restrictive and do not need to be considered when treating or creating a coexposure model. So, our initial response to this is that our 219 -- 2019 reviews first looked at report 92 didn't find

instances of irregularities between having the same date or the same time period. But again, the NIOSH 2022 response updated the tallies, which seem to have improved that condition. And we do know that using the coworker's data from another craft for effective monitoring matching requires that the coworker's craft had the potential to have the same or higher exposure potential than the unmonitored worker. So, we essentially agree on that point. We think maybe the difference is how confident we can be that we can make that determination.

The fourth conclusion. I just said, RWP specified job-specific bioassay data are incomplete. In SC&A's 2022 review, the RWP required job specific bioassay data should be assumed to be substantially incomplete in the course of demonstrating monitoring data completeness and representativeness for use in a coexposure model until at least the end of 1996. Now, why would it be '96? They really noticed a problem in 1997 when they found that, for at least for a certain period of time, 79 percent of the required job-specific bioassays were not being submitted. In other words, 21 percent were complying with the RWP requirements. But in 1997, SRS went back and did 100 percent resampling of all those workers who missed their bioassays and measured them. So, it seems like 1996 is an important date in the development of the program.

NIOSH disagrees that the SRS self-assessments in response to regulatory issues in 1998 indicate monitoring data incompleteness from a statistical standpoint, or that binding bioassay program inadequacy is relevant to constructing a bounding coexposure model. Essentially, there's so much data out there that the missing portion, which is the job specific,

really wouldn't have an effect.

This next bullet in the NIOSH response is about something called the TRACK database, which we're just getting into over the last few months. These were basically a tracking system set up by the lead internal dosimetrist to track suspected intakes among workers. And this could be because there was an incident or field indicators, such as an alarm sounding or contamination sound, basically said you need to track this guy a little bit more to make sure you're following his bioassay. That's something we'll be looking at.

So, our preliminary response to this is if it can be demonstrated that, sure, the most highly exposed workers are fully captured in the TRACK database beginning, I guess, sometime in 1991, according to the interviews. They would certainly be useful and a powerful piece of evidence, but also for-cause bioassays are to follow suspected intakes and might not necessarily be representative for all missed intakes. The 1999 self-assessment by the site contractor also found deficiencies in how personnel were identified through special bioassays, which would be found in the TRACK database. And we maintain that the only firm verification of job-specific bioassay completeness was that performed in 1997, which again, found 79 percent incomplete.

Just for the early years, what SC&A and NIOSH did was look at simple fractional markers, what fractional percentage of the workers on these RWPs were monitored, whether it was via job-specific bioassay or routine. And we think this is the best measure to get around the -- our heads around the issue.

So, conclusion five is really sort of the overarching one. The 2020 review says in order to establish feasibility, the coexposure model needs a balance of the implementation of RWP and completeness of the actual coworker data. And NIOSH responded and basically said they accept SC&A's position that the first four conclusions that we just talked about are sufficiently addressed, then SC&A would consider NIOSH's conclusion valid to support development of a coexposure model.

So, preliminary response. Our conclusion five, the original one in 2022, also contained this quote: A conclusion about the feasibility of the coexposure model for workers lacking bioassay results for nonroutine work may be reached by balancing the programmatic limitations, the RWPs, and job-specific bioassays with the available suitable coworker bioassay data as given in Report 92. SC&A does believe a coexposure model for subcontractor, CDWs cannot be shown to be feasible -- feasible unless and until data completeness and representativeness are demonstrated by both the RWP-related bioassay performance and SRS procedure implementation. The lack of both is really what figured into the designation of the previous SEC to begin with.

So, what's the summary status here of the SEC issues? Based on the SEC designation for the prior years, so that's again '72 to '90, SC&A's position remains that acceptable coexposure models for subcontractor, CTWs can be developed for the post 1990 period when both RWP required job-specific bioassay are shown to be sufficiently complete and representative for subcontractors and also evidence of program adequacy is available to show that Westinghouse assured required bioassays were performed and

submitted. And again, SC&A conclusion five acknowledges that an SEC cutoff date for sufficiency of information to support coexposure modeling needs to balance the two above considerations. How much data we have is completely representative balanced with the actual program implementation. So, workers path forward. One of them -- this is a NIOSH action item is to seek further corroboration of the interview statements about things really following procedures rather than RWP requirements, especially in those early years in the '90s. To verify -- and also get more information about the TRACK database to verify a conclusion of the most highly exposed workers in the bioassay data set, which, according to the interview, occurs at some point in 1991. Like I said before, these next three are SC&A's action items. We owe the work group a formal response based on the work discussions and documents to date. The response to response to response. SC&A is -- this was an idea Dr. Lockey brought forward at the March meeting. He's basically saying well, regardless if you have missing jobs specific, (indiscernible) going to assess it when you compare subcontractors CTWs to prime contractors. Whatever data you have, let's see what the comparison does. And so, SC&A was tasked with evaluating the feasibility of that. In other words, do we have the data sets that we can separate out subcontractors and comment on the futility of such an exercise. And then SC&A's looking at (indiscernible) at least, because that would be a very important (indiscernible).

So, that's it. That's all I got. I have a reference slide here, but I'd be happy to field any questions. Everybody's tired.

MEMBER POMPA: I have a question.

MR. BARTON: Yes.

MEMBER POMPA: This is David Pompa. How does (indiscernible)?

MR. BARTON: I'm not sure I understand the -- how efficient were the --

MEMBER POMPA: How efficient or how accurate were the RWPs? You took a look at a lot of RWPs?

MR. BARTON: We did. We an actual statistical sample during the early '90s because there were not on site that we could find for the SEC period before 1991. Basically, just tried to get all the ones we could find. There were quite a bit. There were quite a bit. And the presentation kind of intimates they evolved over time. At first, when we're looking at (indiscernible) in the 90s, there's no bioassay requirements. As they developed into the '90s, that's when you start seeing actual checklists and places to enter, say, plutonium or -- or whatever it may be. So, it evolved -- evolved over time.

MEMBER POMPA: One more on coexposure. (Indiscernible) with a worker on 510, and this individual was like 2 feet shorter than I was. We worked on nuclear material, and when we get over the similar readings, this individual has higher readings because they're dissimilar (indiscernible) plutonium.

MR. BARTON: Well, in this case, we're really talking about bioassays, urine analysis results, which I don't think it would necessarily have the same effect, height effects. But again, that goes to the issue of matching. We have an unmonitored worker to kind of establish a match, you know, if the jobs are different, how different are they? Was the monitored worker more

highly exposed? You know, there's a lot of professional judgment that goes into that. To the extent that you can tease that out of RWPs is sometimes a little bit different than people coming and going, sometimes at different times, sometimes you had different craftsmen, and they're doing different things.

For example, you might have some carpenters come in and build an enclosure and then they leave, and you have a pipefitter come in, cut the pipe open. And then maybe later you have a laborer to clean up. And then after all that happens, the electricians come back in and take the whole thing down. In that narrow context, I wouldn't say that they're matches at all. So, to the extent that we can use the RWPs, again, it's going to take some professional judgment.

MEMBER POMPA: Do you feel comfortable enough that the coexposure is pretty accurate?

MR. BARTON: Well, the whole issue here is whether the missing type of bioassay, which was job specific -- in other words, they weren't on a routine program or weren't on a routine program for a specific radionuclide. So, they go in to do a job and say that they're not getting monitored for plutonium. And the RWP will say everybody in here needs to be monitored for plutonium. When you have a situation like what was found in 1997, it's sometimes difficult to know what that missing bioassay would tell you about the different exposures. Again, they refer to essentially nonroutine situations. Again, workers who aren't on a routine program or maybe weren't on a program at all should have been covered by these RWPs and the job-specific requirements.

MEMBER BEACH: Hey, Bob, I'm on your worker path forward, and forgive me if I ask something you already mentioned. Can you give us some timelines? I see that you have a path forward. When do you expect that TRACK database and when is your report back to NIOSH going to be ready? So, maybe just some timelines.

MR. BARTON: We do have the TRACK database. Dr. Cardarelli provided that shortly after the meeting. We also have a whole set of electronic data files, that third bullet there, in which you can tease out subcontractors. Now, again, that comes with a caveat that you still don't know what that missing data is going to be.

MEMBER BEACH: Right.

MR. BARTON: So, you might be comparing more routine versus routine. But all three items are progressing, and we're nearing the end of the technical portion. I would say a reasonable estimate would be early to mid-October.

MEMBER BEACH: So, it's a lot of work it sounds like?

MR. BARTON: It's a reasonable amount of work. It might take that long or perhaps a little bit longer because of the requirements of sending those things back to the site for their clearance and then the DOE headquarters for their sign off.

MEMBER BEACH: Okay, thank you.

CHAIR ANDERSON: Any other questions? No hands online, so.

MEMBER VALERIO: Actually, this is Loretta. This is Loretta. I have a question.

CHAIR ANDERSON: Go ahead.

MEMBER VALERIO: Can you hear me all right?

CHAIR ANDERSON: Yes.

MEMBER VALERIO: So, I may -- I may have missed it, but my question to Bob is after 79 and even after 1998, when they did the -- that 100 percent resampling of all workers for the job-specific bioassays, do you have data on if that 79 percent increased after 1998 or around that time frame?

MR. BARTON: Well, two things happened --

MEMBER VALERIO: Or would that be part of the TRACK database?

MR. BARTON: We haven't finished analyzing the TRACK yet, but again, that's -- that's really incident intake data and, you know, situations where there's definitely a suspected intake. I think the change in 1997 and '98 is that in '97, they went -- went back and sampled everybody. And then as part of their radiological improvement plan, they put in a lot of -- you know, more safeguards to assure that people were, in fact, submitting their required job-specific bioassay, up to and including not letting you work if you didn't do it around that time.

MEMBER VALERIO: Okay. But to clarify, this is job -- just job specific?

MR. BARTON: That's correct.

MEMBER VALERIO: Okay, thank you.

CHAIR ANDERSON: Any other questions, comments? Last chance. Thanks, Bob.

DR. ROBERTS: Since we do have -- I guess that concludes the Savannah River Site (indiscernible). Brad, do you have anything else?

MEMBER CLAWSON: No, it's just we're -- no, it's just we're still in limbo, and we'll try to get (indiscernible) and press forward. We're still -- we're still looking for a date to -- a cutoff date, but we're (indiscernible) that this data is sufficient and accurate to be able to use it. So, that's -- that's the only thing (indiscernible).

SCHEDULING

DR. ROBERTS: Well, before, I guess, we take a break, because we have a half hour before the public comment session, since we were setting up dates for board meetings next year, let's circle back because we kind of skipped to December, and there was an October teleconference that we need to go ahead and set up. So, we may as well just go ahead and do it now.

So, we're looking at October 2024. How's the week of the 13th? Okay. Josie's out the entire month. Do other folks have issues with the week of the 14th, or do we need to move to the twenty -- the week of the 21st?

MEMBER FRANK: Is this just a call?

DR. ROBERTS: It's just a call.

MEMBER FRANK: 14th would be better.

MEMBER CASSANO: Yeah.

DR. ROBERTS: So, we can --

UNIDENTIFIED SPEAKER: (Indiscernible) 21st.

DR. ROBERTS: Okay, so that's out. I think there might be a government holiday there around, but --

MEMBER CASSANO: That's on Monday.

DR. ROBERTS: It's that Monday, okay. Okay.

MEMBER FRANK: How about Thursday, the 17th from 11:00 to 1:00?

DR. ROBERTS: That could work. Does anyone have any conflicts with that?

MEMBER CASSANO: Well, I don't know at this point, but Thursdays are usually not good for me because of some -- some weekend activity. So, I would prefer to Wednesday, if that's possible for everybody else.

DR. ROBERTS: Is that good for other folks?

MEMBER FRANK: I've got a university committee meeting from 11:00 until 12:00. I guess I could miss it. Tuesday would be better.

MEMBER BEACH: So, the 30th of October?

MEMBER FRANK: No.

DR. ROBERTS: Okay. What about the week of the 6th?

MEMBER CASSANO: That's okay.

MEMBER FRANK: Yeah, Wednesday --

DR. ROBERTS: Wednesday --

MEMBER FRANK: Wednesday, the 9th?

UNIDENTIFIED SPEAKER: The 9th?

DR. ROBERTS: Yeah.

MEMBER FRANK: Yeah, that’s good.

DR. ROBERTS: That could work? Okay. So, again Wednesday, October 9, 2024, 11:00 a.m. Eastern, and it's just a teleconference, so I will put that down. Thank you.

Okay. I think that unless anyone has anything else right now, we can

break for about a half hour, give or take a couple of minutes. If everybody could be back by a couple of minutes before five, that would be great so we can have our public comment session promptly at 5:00 p.m. All right. Thank you.

(Whereupon, a break was taken from approximately 4:30 p.m. until 5:00 p.m.)

Roll Call

CHAIR ANDERSON: Are we ready to get started with the public comment session?

DR. ROBERTS: (Indiscernible.) So, starting with Anderson.

CHAIR ANDERSON: Present.

DR. ROBERTS: Beach?

MEMBER BEACH: I'm here.

DR. ROBERTS: Cassano?

MEMBER CASSANO: Here.

DR. ROBERTS: Clawson?

MEMBER CLAWSON: Here.

DR. ROBERTS: Frank?

MEMBER FRANK: Here.

DR. ROBERTS: Kotelchuck?

MEMBER KOTELCHUCK: Here.

DR. ROBERTS: Lockey?

MEMBER LOCKEY: Here.

DR. ROBERTS: Martinez? Pompa?

MEMBER POMPA: Here.

DR. ROBERTS: Roessler?

MEMBER ROESSLER: Here.

DR. ROBERTS: Valerio?

MEMBER VALERIO: I'm here.

DR. ROBERTS: And Ziemer?

MEMBER ZIEMER: I'm here.

DR. ROBERTS: Okay. Great.

PUBLIC COMMENT SESSION

CHAIR ANDERSON: So, what we'd like to do is start with individuals who would like to speak about Savannah River, that are here from Savannah River. We didn't have any sign up in person, so those on the phone or any of you wishing to make a statement of some kind. We have 40 participants on the phone, so don't be afraid to speak up.

DR. ROBERTS: Mike Elliott (indiscernible).

CHAIR ANDERSON: Okay. So, Mike Elliott.

MR. MIKE ELLIOTT: Yes. Good afternoon, Dr. Anderson.

CHAIR ANDERSON: Thank you. Go ahead.

MR. MIKE ELLIOTT: Good afternoon. Okay. Well, good afternoon, everyone. As Dr. Roberts mentioned, my name is Michael Elliott. I am a co-petitioner for SEC Petition SEC-236. I want to thank you for this opportunity to address the full Advisory Board and the other meeting participants on the call today.

I am a former employee at the Texas Instruments M&C site. I worked at the Attleboro facility during the AWE residual period. In my capacity as

facilities environmental manager, I served as a project manager for what we referred to as the nuclear decommissioning project. That was the final D&D activity that transpired between 1992 and 1997 to achieve termination of special nuclear material license No. 23, and release of the entire (indiscernible) with the exception of where Building One, as Ms. Beach pointed out earlier.

Let me first take a moment to clarify some of the issues that came up during the M&C work group review update presented by Ms. Josie Beach, our work group chair. To help clarify this, I'll start off by saying it's important to understand that M&C, the Attleboro site, was a commercial contractor to the atomic weapons program and other government contracts. It was not a government-owned facility.

So, as soon as the AWE operations period ceased at the end of 1967, the buildings were -- where the nuclear operations had been conducted, were quickly repurposed for non-nuclear production activities. In the case of Building Ten, an approximate 100,000 square foot building which housed the majority of AWE operations, approximately 90 percent of the building footprint was repurposed for non-nuclear production operations, such as the wire department, a ceramic PTC materials manufacturing operation, thermoplastic molding materials, coinage materials, and support operations such as facilities, construction, and maintenance workshops, R&D labs, production tool shops, and engineering offices, where I sat. There was only one remaining nuclear operation for the production of high flux isotope reactor, or HFIR -- we -- we called it HFIR -- fuel elements under contract to Oak Ridge National Labs. And that production area only occupied, you

know, maybe 10 percent of the footprint located in the northwest corner of the building.

The HFIR operations ceased production of operations in 1979 and completed its D&D activities in that portion of the building to 1981. And as Dr. Kotelchuck correctly pointed out earlier, a year later, in 1982, the USNSC declared the building interiors were released under (indiscernible) use, and the only obstacle to holding commissioning was cleanup of a former 20.32 below where you have the waste burial site between Buildings 11 and 12.

But it's important to point out that at no time during this residual period was there ever any health physics monitoring or controls or measurements of any kind that were put in place for nonnuclear workers. Even in these areas that were previously, you know, used -- used for AWE operations.

With the exception of the HFIR workers, all production workers in the building were non-radiation workers or non-nuclear workers. These production workers were working on non-nuclear production lines that I previously mentioned a moment ago. These workers were working in areas where AWE operations had previously been located. And in some cases, for example, the (indiscernible) Lewis Mills, they were even working on mills that had been used during the AWE operational period to produce products for AWE contracts. For the most part, production workers would have been assigned to certain production lines or equipment and would not have moved around much. However, in the case of facilities construction and maintenance workers and equipment RM workers, as Dr. Kotelchuck correctly stated, these workers could have been dispatched to address

whatever urgent matter needed to be addressed on any given day. So, if there was a flood one day or power (indiscernible) another day, it was all hands on deck with construction and maintenance workers.

During the earlier update by Ms. Josie Beach, she effectively and clearly summarized the status of the -- the, you know, questions and the debates surrounding SEC petition -- SEC-236. Listening to her presentation, it is clear that even now, after seven years of intense analysis by all involved in the M&C work group, there are still more questions remaining than there are answers. NIOSH would have us believe that they can estimate a bounding dose for any member of the class with sufficient accuracy, but when one digs down into the foundation of their model assumptions, the three legs of the stool analogy that Ms. Beach used, she clearly demonstrated the tenuous and unsubstantiated basis of NIOSH's exposure modeling. NIOSH models are lacking sufficient accuracy for source term, for dust loading, and for occupancy time. I've stated this on numerous occasions, and I know for members of the M&C work group, I probably sound like a broken record, but the only facts we can say with absolute certainty as follows: There is no measurement on monitoring data for any member of the class of workers under consideration during the AWE residual period. Work was performed with no radiologic -- no radiological controls, no health physics training, and no awareness of the radiological hazards. Workers unknowingly came in direct and intimate contact with elevated levels of residual radioactive contamination that had been released in an uncontrolled manner during the AWE operational period. There are no known contemporaneous written records of the nature, extent, and duration

of construction and maintenance activities that M&C workers performed in contaminated areas during any part of the AWE residual period. All we have as -- and quoting Josie again, is the distant memories of a handful of M&C workers who were interviewed decades after the period in question, not all of whom were construction and maintenance workers.

Notwithstanding these limitations and the tenuous foundations of its exposure model, NIOSH continues to purport that it can estimate a bounding dose to any member of the class of workers for any cancer with sufficient accuracy. In her summary slide, Ms. Beach articulated the work group's concern that, quote, the application of extreme conservatism in formulating the proposed upper-bound concentration to account for intrusive activities, high-exposure conditions, uncertain facility activities, or unknown contamination sources may not be a plausible approach to compensate for inadequate or insufficient information. My understanding is that the question of plausibility is really a policy question for the Advisory Board to decide. So, in an appeal to the wisdom and professional judgment of the Advisory Board Members, the petitioners respectfully request that the Advisory Board exercise its statutory authority and recognize this class of workers under the SEC provision of the EEOICPA. So, thank you again for the opportunity to speak today. I'm happy to take any questions that (indiscernible).

CHAIR ANDERSON: Thank you. We definitely don't engage in asking questions or (indiscernible) what you may have said. So, we really appreciate that you've come a number of times and certainly talked with the committee members, and we appreciate all the work and effort and time

that you've devoted to the project. Thank you very much.

MR. MIKE ELLIOTT: You're very welcome, Dr. Anderson. I'd like to give a little shout out to Peter Darnell, who was a -- a -- a NIOSH/DCAS member, who was one of the people who interviewed me in October of 2017. And as my interview came to a close, I asked Mr. Darnell, well, how -- you know, what -- what's -- you know, what's this formula to, you know, run one of these SEC petitions, you know, actually succeeding, you know, and -- and -- and getting a favorable decision. And he looked at me, said, Mike, it's people like you who -- who, you know, come and keep advocating on behalf of the petition. So, I took his words to heart, and that's why I'm here.

CHAIR ANDERSON: Thank you. Anyone else online? Any site? If you're trying to speak, take yourself off mute, because I see a lot of... Then let's move on to Denise DeGarmo.

MR. RANELLI: Hello?

CHAIR ANDERSON: Oh. Yes, and who is this?

MR. RANELLI: This is Bob Ranelli (ph) from the Pinellas plant.

CHAIR ANDERSON: Okay, go ahead. Sorry, go ahead.

MR. RANELLLI: (Indiscernible) research, my -- my suspicions today is about NIOSH and their conflicting role. And it's regulation 42 CFR 10(k)(3) (sic) they're basing on benefits to a lot of the employees at the Pinellas plant. And if you research that (indiscernible), you can see that it conflicts with the Act, with the -- and, you know, the Act (indiscernible) and people can look at, like I said, what these people do when there is relevant evidence and data capture or a lot of employee. And all they did was said

(indiscernible) that the probability of causation is less than 50 percent. The basis on this -- on this, essentially, is related to the length of time of employment as gathered by, like I said, that regulation and the cancer.

Well, there's one employee that has malignant melanoma and 13-and-a-half years at the plant, and they say -- they said many times, no matter how much information was given to them, due to low-level radiation and high-level radiation from (indiscernible) welders, because we did have the radiation accident, and that you can find on unusual occurrence report NDE 8803. This was April the 20th of 1988. This is when GE operated the plant. It was identified as a radiation accident.

Well, there's nobody that -- there isn't anybody on record that has received benefits, but they put in for benefits, and they were denied on that -- I'll repeat, again, the regulation 42 CFR 10(k)(3) (sic). Any questions? Hello.

CHAIR ANDERSON: Yes. Sorry. No, no, that's okay. I had put it on mute so not to interfere. So, thank you very much for your comments. Did you --

MR. RANELLI: Okay. I --

CHAIR ANDERSON: Did you want --

MR. RANELLI: I -- I can --

CHAIR ANDERSON: -- to give us your name?

MR. RANELLI: -- add one more thing.

CHAIR ANDERSON: Go ahead.

MR. RANELLI: My name Robert W. Ranelli (ph), and I'm an advocate for a lot of the employees. We know that they were exposed. We know that

they have conditions (indiscernible). Their life has been limited, you know, through these exposures. Now, I -- I talked to some people from Moffitt Cancer -- Cancer Center. They gave me information about low-level radiation, and these are people that are exposed in the medical field, and they have these different cancers. I don't know why it can't be applied. I think more research should be done on the performance measurements that OMD, that (indiscernible) budget has given to them -- to NIOSH for efficiency. Okay. So, they're efficient, but doesn't that conflict with the intent of the Act and the law to compensate these people, the people, the employees that have been damaged through exposure to radiation.

CHAIR ANDERSON: Thank you very much for your comments as you were very --

MR. RANELLI: Well, that --

CHAIR ANDERSON: -- review on that is moving forward.

MR. RANELLI: Okay, thank you for your time.

CHAIR ANDERSON: Thank you. Okay. Anyone else on the line? Okay. Now, Denise.

DR. DEGARMO: Good evening, everybody. My name is Dr. Denise DeGarmo. I'm the authorized petition representative of SEC-00256, Pinellas Plant. I hope you'll indulge me a minute while I kind of go through the history of how we actually got to the point of needing this program.

The atomic energy and nuclear weapons research and development in the United States actually began in 1939. It's unclear how many Americans were involved in this research and development between the years of 1939 and 1942. From June 18, 1942, to August 25, 1947, we know through the

Manhattan Project timeline, over 130,000 production workers were employed in nuclear weapons research and development.

As we know, on July 16, 1945, 78 years ago this year, we had the implosion of "gadget." August 6, 1945, little boy was dropped on Hiroshima with over 140,000 Japanese dead. On August 9, 1945, fat boy was dropped on Nagasaki with over 70,000 dead. Between 1948 and 1953, at the peak of the Cold War period, we have estimates of over 600,000 workers throughout the country involved in research and production. Unfortunately, from that period of 1953 on, we don't have any really good estimates of how many people worked in the nuclear weapons complex. On August 16, today, 2023, we have a disproportionate number of former nuclear weapons workers across the United States, across the various complexes that remain uncompensated.

Interestingly enough, we know from the Department of Labor that over -- as of August 13th, on their website, they claimed that there were 345,786 claim applications made under Part B and E, with a total of 233,034 total cases. Now, while that may seem remarkable, the problem is that this number goes unnoticed. These claims and cases represent only 139,067 unique individual workers, which seems to indicate we have missed the point of getting former workers who have been impacted into the program in an appropriate manner. And there's lots of reasons why that may be the case, but I don't know that we have done the job in terms of educating the workers of things that are available to them.

The workers, in my humble opinion, are truly the invisible victims of the tragic health agencies -- or legacies, excuse me, that accompanied the

research and production of nuclear weapons. And if that's not tragic enough, the Department of Energy, the National Institute of Occupational Safety and Health, Division of Compensation Analysis and Support, the Office of Compensation Analysis and Support, and Oak Ridge Associated Universities -- and it would take me too long to go through all the rest of these agencies have consistently added insult to the workers' injuries through their decades of classification, classification, classification, and suppression of vital information regarding the significant harms that nuclear weapons workers have had to endure from their work.

They were exposed every single day of their employment to toxic and radiological waste and materials, and sadly, many of the workers died never knowing what they were exposed to. The aforementioned agencies have engaged in behavior with their efforts aimed at obliterating the suffering of the real victims. Somehow, we forget that there are human beings that are involved in this process. We talk about numbers. We talk about dose reconstructions. We fail to mention the actual workers and what they are going through. And we need to return some of it back to the workers.

I was going to sit here and beg you all as the Advisory Board to do something to intervene. And I am very pleased that we now have a work group meeting because I've done my due diligence. I've worked really hard on this petition and for the claimants of Pinellas. I have provided you with ample evidence to challenge the assertions made by DCAS that they can dose reconstruct the radiologic exposures of our Pinellas plant workers. This evidence includes, but is not limited to, missing employee records, not just a few, but a whole lot of them, with them unbe -- nobody knowing where they

went, did they disappear, were they thrown out? We have information pertaining to both of those.

I gave you the Department of Energy's own Tiger Team report, and I cannot reiterate how important that is to understanding the situation at Pinellas. I've submitted report after report noting the lack of radiation exposure data at the Pinellas plant. I have reported that many documents were relinquished to the University of South Florida in Tampa and the University of Florida in Gainesville, and there is no explanation as to why those documents went there, and a lot of medical records went there as well, and that there has been no acknowledgement from either one of these universities that those documents exist.

We have unanswered questions that I have provided you regarding the Heather project. I presented you with evidence discussing the presence and dispersion of plutonium within and outside of the Pinellas plant, despite DCAS's insistence that this was not possible because the plutonium was triply encapsulated. It couldn't have leaked out of the facility. There might have been an accident or two, but nothing to any great extent. We have unreported radiologic incidents involving RTGs and the Heather project. Oh, yeah, and did I mention plutonium?

I asked DCAS not too long ago to provide me with the characterization of their bioassay data from Pinellas. I don't need the names. I understand the Privacy Act, God knows how many FOIAs I've received and am waiting for rejection and so forth. I just wanted the characterization to understand what do they really have? What are they really using? If they had nothing to hide, then why am I consistently being refused access to just a simple

characterization of the data? I was told to go back to the petition evaluation report, that was what I needed to know.

We have done our due diligence. We have followed the rules outlining the procedures surrounding the SEC. And again, I am so appreciative, as the claimants are, that we now have the opportunity to have a work group actually look at this. So, thank you, thank you, thank you. But we also want to continue to urge you that given our due diligence and all the evidence we have presented, that you will come to approve a special exposure cohort for the Pinellas Plant. Thank you very much for your time.

CHAIR ANDERSON: Thank you very much, Dr. DeGarmo.

We -- we received a letter that was -- we were asked to read into the record as well, and Rashaun will do that.

DR. ROBERTS: This correspondence is from Senator Edward J. Markey. It's addressed to me as the designated federal officer of the Advisory Board. (Reading): I'm writing to you regarding the CDC special exposure cohort SEC petition 236, which seeks to establish a class of workers from the Metals and Controls Corporation, "M&C," who worked in M&C's facilities, construction, or maintenance organization. These workers were employed from January 1, 1968, to March 21, 1997. It is my understanding that in the 1950s and the '60s -- 1960s, M&C performed government-sponsored atomic weapons employer, "AWE," operations, which involved processed or produced material that emitted radiation.

While atomic weapons operations ended in 1967, the M&C facility was reportedly not fully decontaminated until 1997. This period is referred to as the residual period, where non-nuclear M&C workers were exposed to high

levels of undetected residual radiation after working in nuclear operated buildings that were thought to be properly decon -- decontaminated. These non-nuclear M&C workers have had or are still suffering from illnesses, such as cancers as a result. Among the workers who report negative impacts from exposures at M&C, my office has received particularly deep and troubling concerns from one constituent, [identifying information redacted] of Attleboro, Massachusetts.

[identifying information redacted] began her employment at an M&C facility in Attleboro in 1974, just seven years after the end of the M&C SEC. After working for M&C for 20 years in both the factory and the corresponding office building, she retired in 1994. She was diagnosed with cancer in 1999. Like many of her colleagues, [identifying information redacted] reports she was unaware of the residual radioactive material present in her work environment, and her illness is not recognized by the existing M&C SEC due to the dates of her employment.

[identifying information redacted] reports she underwent an individual dose reconstruction process, which ultimately found her cancer was just 5 percent below the 50 percent threshold needed to verify an occupational exposure. Ultimately, the limited SEC for M&C workers employed between January 1, 1952, and December 31, 1967, fails to provide relief to individuals like Sheila who faithfully served M&C during the residual period.

Understanding the health impact on workers, I urge the NIOSH and the M&C Advisory Board working group to forthwith carefully review the SEC petition 236 and give full and fair consideration to the exposure and impacts

of M&C employees employed outside of the existing SEC period.

Thank you for your consideration of this request and for sharing this letter with the M&C Advisory Board working group. Should you have any questions, please do not hesitate to contact my regional director, Ben Thomas, at Benjamin_Thomas@RT.Senate.gov or 617.565.8519. Sincerely, Edward J. Markey, United States Senator.

CHAIR ANDERSON: Okay. The last speaker is going to be Donna Hand.

MS. HAND: I'm Donna Hand. I'm an authorized representative and also a worker advocate. I've been involved with this program since 2001. This program and their statue will be 23 years old this October. The regulations will be 22 years old, and the first compensation that came out of this program will be 21 years old. So, you should already have received through the email one of my comments, summary, and issues, everything which is about 15 pages long. And I remind you because sometimes we forget, especially when it's this long into the program, the basic, the statute, what the statute commands, and what the regulations state, what is your duty, what you shall, what you must do, what you should do, and what you may do, which is mandatory. You shall and you must, or which is discretionary, what you may, or you should. But even when it's discretionary, you still have to remain within the frame work that Congress's intent had done. Congress intended this to be uniform and timely, and this has not been timely lately. Not at all.

Earlier today, you said the people wanted to know about employment records. Underneath the Freedom of Information Act, and specifically the

Privacy Right Act, claimants can go to Washington, DC DOE to Department of Labor, and sometimes NIOSH, and they can get their file. Department of Labor is required as soon as a claimant files a claim to go to DOE and get their employment records. DOE has their employment records, but go to Washington, DC to request that.

And then again, the 45 to 52 percent, that's been a policy or procedure for a long time. Why are you wasting money and time? When you hit that 50 percent, that's it. You shouldn't run another computer analysis, you know, another 20, 30 times when you hit the 50 percent. That's it.

So, the -- also, the law says reasonable estimate. It doesn't say best estimate. It says reasonable estimate. The best estimate means you have to go through all those radioisotopes that a worker wasn't exposed to while performing his work duty. That's not being done. In fact, the dose reconstructions that I've seen -- I've seen them through all the sites, Savannah River, Pinellas, Oak Ridge, Rocky Flats, Hanford -- they've done labor category. They're not doing the dose reconstructions to the occupational environment.

It should be timely and uniform. And these are taking two, three, four years. That's not timely, and that's not uniform. Also, in the dose reconstruction, when they do the internal dose, they're doing inhalation and ingestion, but they're forgetting about the skin dose. The skin dose is half of an inhalation dose. That's never captured.

When you talk about the radiation that they're supposed to, specifically at Pinellas, it includes radiation devices such as an E beam

welder, such as the industrial X-ray. They're not capturing that either.

Then you go to this new IREP. This new IREP program, is it really going to benefit the claimants? Is it going to benefit this program? Will they capture the uncertainties? Because with these programs, we have a large uncertainty. In fact, on the last page of an IREP, you'll see there's a small square, and it says uncertainty distribution, and it has two parameters. If those parameters are the same number, you did not capture the uncertainty. That's their own guides that says that. So, where is uncertainty captured?

When you use a triangular distribution, which I've been seeing a lot of, the first parameter is supposed to be the minimum dose. The minimum dose is a zero. So, you're telling me that these workers have a minimum dose of zero at these sites when Joe Q Public has 360 millirems outside? So, your calculation of a triangular dose is zero parameter, minimum dose? It should at least be 1 millirem and not zero. So, is this new IREP program -- can it capture something with it?

I have a gentleman, he's at end stage, terminally-ill stage. He has kidney cancer, both sides. That's two, you know, dose reconstructions there, pancreatic cancer, bladder cancer, colon cancer, and 40 skin cancers. His POC, 38 percent. Reason why? Triangular dose distribution, parameter zero, parameter was 0. He worked at Savannah River, at H and F Tank Farms in the E area, in the hazard waste, radioactive hazard waste. He worked at Paducah. He worked at the Nevada Test Site. He worked at Portsmouth, and he worked at Honeywell. He only got that with that many cancers? It doesn't make sense to me. I hated math in school, and I still

hate math, but it still doesn't make sense to me.

So, again, this is 42 -- 82 -- excuse me -- 42 CFR 82.32. How will NIOSH make changes in scientific elements underlying the dose reconstruction process based on scientific progress? NIOSH will present proposed changes to the Advisory Board prior to implementation. Okay. The public will have opportunity to speak on the proposed changes prior to implementation. So, before this new IREP program can be implemented, the Board has to see it. We get to comment on it. It's not the reverse. And this is in the regulations. How will NIOSH inform the public of changes to the scientific elements underlying the dose reconstruction process? They'll publish it in a federal registry -- he mentioned that -- informing the changes and the rationale for the changes. So, this has to be put into a federal registry before implementing it. You can't implement it automatically.

So, there's some of the things that's already been implemented, such -- when did the Board approve the change in the method to be 50 percent and 95 percent, 50 percent for administrators, for secretaries, for purposes that they believed not to be exposed. Looked that up in the federal registry and who -- when did the Board approve that? So, when did the Board approve the triangular distribution, and is it claimant friendly? What's the purpose and intent of the Act? Does the triangle distribution first parameter, is that correct? Is it scientifically valid? That's the duty, statutory duty of the Board. And when did the Board approve the best estimate instead of a reasonable estimate?

And why is it taking so many years for an SEC? NIOSH do not have the data for a site or the workers or years the petition was qualified for, then

the SEC must be granted. If you don't have the data right now, then you don't have it. Even in their internal guidelines, they say within 75 days of receiving a petition, they have a professional draft with rationale saying yes or no. Then within 396 days, if they don't have anything, they don't have nothing. And they have to give it to 180 days to the Board. But during that 180 days, the work group looks at it, SC&A looks at it because they write another draft. They give it in 75 days. So, then when it comes to the Board, in that 180 days, the Board can say yes or no. It shouldn't be dragging on for years and years and years. If later on they capture the data, then it goes back to the same thing. You come back to the Board, you come back to the work group and say, from this date on, we've got the data, we can do the dose reconstruction, but not going on for years. These people are dying. You know, they're not getting the compensation. They don't get that compensation, not so much financial, even though that helps, it's that medical that they need. And in the internal guidelines that they have for the SEC, they have a timeliness policy that they're not following. So, they're not following their internal policy.

I want to remind you that on March 3, 2016, at a Board meeting, Peter Darnell stated that we got records from SNL on the D&D period of Pinellas, but nothing will add to the D&D activities. But yet NIOSH has said the definition is going to end in 1990. What we heard tonight, that's not set in -- set in stone. I beg that you take it to 1997, because he has documentation along with that that's in the SRDS that they have final radiological data of the different areas in 1996. They have bioassays in 1995. So, why did you end it in 1990 if you know you still have radiation in

1995 and 1996, and you have that information there?

I'm asking you, please read that report that says the law. Policies, (indiscernible), procedures, reports, they don't have the weight of law. They don't have the effect of law. They don't have the force of law. And under the Administrative Procedure Act, it is arbitrary and capricious if you're doing Agency action without authority or you're not doing the action that Congress told you to do. Thank you.

CHAIR ANDERSON: Thank you. Are there any other comments people want to make? Last chance online. Anyone want to add to the record here? I'll entertain a motion to adjourn.

MEMBER BEACH: I'll second it.

CHAIR ANDERSON: Okay. Time for dinner. I'd like to thank everybody who made comments. We greatly appreciate all the participation we received.

(Whereupon, the above meeting was adjourned at 5:46 p.m. EDT)