Centers for Disease Control
National Institute for Occupational Safety and Health
Advisory Board on Radiation and Worker Health
145th Meeting
Thursday, April 28, 2022

The Advisory Board convened via Video-Teleconference at 1:00 p.m. EDT, Henry A. Anderson, Chair, presiding.

Present:

Henry A. Anderson, Chair
Josie Beach, Member
Bradley P. Clawson, Member
R. William Field, Member
David Kotelchuck, Member
James E. Lockey, Member
David B. Richardson, Member
Genevieve S. Roessler, Member
Phillip Schofield, Member
Loretta R. Valerio, Member
Paul L. Ziemer, Member
Rashaun Roberts, Designated Federal Official

Also Present:

Adams, Nancy, NIOSH Contractor
Barrie, Terrie
Barton, Bob, SC&A
Behling, Kathy, SC&A
Buchanan, Ron, SC&A
Calhoun, Grady, DCAS
Degarmo, Denise
Fitzgerald, Joe, SC&A
Gogliotti, Rose, SC&A
Guido, Joe, ORAU Team
Nelson, Chuck, DCAS
Rafky, Michael, HHS
Rutherford, Lavon, DCAS
Taulbee, Tim, DCAS

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Proceedings

(1:01 p.m.)

Dr. Roberts: So it is 1:01 Eastern Time, and so I'll go ahead and officially open the meeting.

So good afternoon and morning, depending on where you are, and welcome everybody.

I'm Rashaun Roberts. I'm the designated federal officer, DFO, for the Advisory Board on Radiation and Worker Health, and this is the second and final half-day for Board Meeting 145.

Like yesterday, we do need to go over a few preliminaries before we get started. So if you're just participating in this meeting by telephone line, all of the materials for today, the agendas, presentations and other documents are posted on the NIOSH or DCAS website under Schedule of Meetings, and you can look under the April tab for calendar year 2022.

So you can go to the website and find and follow along with the presentations. Materials were provided to the Board and to staff prior to this meeting.

If you take a look at the agenda on the website, there's a Zoom link which will enable you to hear, speak and watch the presentations through Zoom.

If you are on Zoom, you do want to be muted at all times when you're not speaking, and the mute for Zoom is near the bottom left-hand corner of your screen.

If you are participating by phone, I ask each of you to please mute your phone unless, of course, you're speaking.

If you don't have a mute button, press *6. If you need to take yourself off, press it again -- *6 again.

And also as we are unable to see you if you're on the phone, please identify yourself before comments and questions.

We do, as we get into the roll call, need to address conflict of interests for today. As you can see from the agenda, there will be a presentation and discussion of the Sandia SEC.

I do know that Loretta Valerio has a conflict of interest for that agenda item. So Loretta, when we come to that item on the agenda, please disconnect form Zoom and telephone line, if you're using that, and we'll contact you when we move on to the next item.

So let me go ahead and move into roll call now, and I'll start with the board members in alphabetical order, and please state any conflicts that you might have.

So starting with Anderson.

(Roll call.)

Dr. Roberts: Okay. Well thank you and welcome everybody. Again, so let's prepare to get started with the agenda.

Please make sure that you're on mute on your phone, and also on Zoom, as we move forward.

So with that, I'll go ahead and turn the agenda over to Dr. Henry Anderson, who's our board chair.

Andy?

Member Richardson: David Richardson. I just wanted to ---

(Simultaneous speaking.)

Dr. Roberts: Okay. Great. David, any conflicts?

Member Richardson: No. No conflicts.

Dr. Roberts: Okay. Thank you.

Now, we'll turn to you, Andy.

Welcome

Chair Anderson: We're all here and thank you. Let's begin with Chuck Nelson doing an update on the petition's status report.

SEC Petitions Status Update

Mr. Nelson: Thank you, Doctor Anderson. I'm just going to try to share my screen. Let's see here. Can anybody see that?

Member Beach: Yes, it's up.

Mr. Nelson: Okay. All right. My name is Charles Nelson. I'll be doing the SEC status update. I am the DCAS SEC team lead. So we'll get into this.

The purpose of this is we update this at every advisory board meeting to update the petitioners, general public and advisory board on petitions under qualification review at NIOSH and those being evaluated by the advisory board, as well as any potential NIOSH-initiated petitions, which are called "83.14 petitions," so that they can help the advisory board prepare for future work group meetings, as well as upcoming advisory board meetings.

To date, we have received 258 petition submittals. We currently have no petitions that are in the qualification process.

So far, we have had 153 petitions that qualified for evaluation. Currently, we have 12 petition Evaluation Reports that are under review with the advisory board.

Okay. A petition that we still have under review is Lawrence Livermore National Lab for the period 1990 through 1995. The site is located in Livermore, California.

This is Petition No. SEC-0221. This was a reserve period, so this will be an addendum to the current Evaluation Report.

This addendum will address the remaining years for all employees. You know, in the past, we have not been able to get to the site due to the COVID pandemic; however, travel for DCAS will be resuming soon.

And as soon as we have a date to where we're going to return to that site and look at some records, we'll provide an update to the work group members and that way they're welcome to join us, if they would like.

Okay. I mentioned previously there are 12 evaluations under the Advisory Board review.

They are Hanford, which is SEC-0057. All the SEC issues are closed except those related to ongoing co-exposure efforts.

Then we have SEC-0103, which is Savannah River Site. As I'm sure most remember, there was a class designated by HHS and that was on August 18th, 2021, and that became effective September 17th of 2021.

There are some remaining open issues with the work group. So I expect the work group chairs to discuss this site, and others, at our work group session later today.

Next up is Sandia National Lab in Albuquerque. That's SEC-0188. There was a Sandia National Lab Work Group meeting on 4/11, and we'll be moving into that presentation following this update.

Okay. Also under Advisory Board review is Los Alamos National Lab -- that's SEC-0109 -- and NIOSH is still working to resolve some issues raised by the Advisory Board contractor and the work group.

The LANL Work Group met on 3/23/22, and NIOSH presented a couple reports. And that was assessment of LANL plutonium bioassay programs for '96 to 2001, as well as RPRT-0101, which was bounding intakes of exotic radionuclides at LANL.

After the work group discussion, SC&A, the Board's contractor, was assigned to review both reports.

Okay. We have Idaho National Lab, SEC-0219. Again, we're still working the issues to resolve those raised by the SC&A and the work group. And that also is the same status of Argonne National Lab, which is SEC-0224.

Moving on to Area IV Santa Susanna, which is SEC-0235, we're waiting on records to be released from the records center and the record center to open.

We do have a projected opening date for that record center and it's late 2022. So as soon as they are open and available to accommodate the -- we'll have a group go in there and start mining through those records.

Okay. Next up, Metals and Controls, SEC-0236. This one is also with the Metals and Controls Work Group.

SC&A completed a review of the NIOSH-proposed dose reconstruction report and NIOSH did respond to the issues in the SC&A review.

We have De Soto Avenue Facility, SEC-0246, and we're working on providing some clarification on some remaining issues and, just like SSFL, we still (audio interference) -- sounds like someone is not on mute there.

(Pause.)

Mr. Nelson: Okay. I think we got that.

So De Soto and, again, we'll be doing data captures at the local records center here in Cincinnati, and we expect that to hopefully ramp up as early as late June. So as soon as they can accommodate us, we're going to get right in there.

Okay. Next up is Y-12, SEC-0250. The addendum to the ER was presented in the August 2021 Advisory Board meeting, and again, SC&A was assigned to perform a review of that Evaluation Report.

Then finally, we have Reduction Pilot Plant, SEC-0253. The work group met on 2/17/22, and those of you that attended yesterday, we went over that and so that there, apparently, is going to go onward from the Advisory Board and be sent forth.

Finally, we have SEC-0256, which is the Pinellas Plant. NIOSH discussed the Evaluation Report at the December 2021 Advisory Board meeting, and again, SC&A was assigned to perform a review of that Evaluation Report.

This is a slide that shows the periods of times for each of those Evaluation Reports awaiting action. So it has the assigned time period and you can look over those.

So we have Hanford, Savannah River for both prime contractors and subcontractors. Los Alamos, Sandia and Idaho.

Then we have Argonne National Lab, Santa Susanna, Metals and Controls, DeSoto, Y-12, Reduction Pilot Plant and Pinellas.

Finally, a potential 83.14 SEC petition, that was West Valley Demonstration Project.

A class was added for 1969 and '73. So our focus right now is the time period of '66 through '68.

We've got a large number of documents that are still under review, and we also have some documents that we're awaiting release from NRC pending the security review on some AEC reports.

Are there any questions?

Member Beach: Chuck, this is Josie.

You mentioned that on slide 7 you would be getting back into Santa Susanna area in, it says, late June. Is that scheduled yet, or are you still waiting for confirmation on that?

Mr. Nelson: We are communicating with the site, and

I guess they're slowly ramping up and that is the best projected dates they've given us, but we are communicating with them.

We have a team at ORAU that sets all this up for us and they are checking with them every week or two. So that's where that is.

Member Beach: Okay. Is that something that you'll do jointly with SC&A, or is that a NIOSH-only trip?

Mr. Nelson: We can certainly invite them or anybody else that wants to attend. So I will make a note of it right now to make sure that we extend that invite out to you all.

Member Beach: Okay. Are there any other sites that you're going to look for records? I didn't catch it when I was reviewing the slides.

Mr. Nelson: Lawrence Livermore National Lab is one of them.

Member Beach: Okay.

Mr. Nelson: Let me see if there's anything else that I -- we had a meeting a couple weeks ago and we got with ORAU and we put everything in priorities.

And the top of the priority list are of course Santa Susanna, as well as De Soto, Lawrence Livermore and also Pinellas.

There's going to be some data capture next week for Pinellas and we're going to go look at some records.

Member Beach: Okay. And has that been extended also to SC&A, the Pinellas --

Mr. Nelson: I'm not sure that it has, quite honestly.

Member Beach: Okay.

Mr. Nelson: As soon as we've got the green light to start traveling, ORAU's started getting these going.

In fact, the person we have on our side isn't going to

be able to go just due to the late notice of this.

Member Beach: Okay. And I don't know that SC&A needs to go or wants to go, but it's always good to combine those, if possible, and save the resources.

Mr. Nelson: I agree.

Member Beach: So thank you for that.

Mr. Nelson: Okay.

Member Schofield: Hey, Chuck, on Pinellas, is there going to be -- where are you going to go for the records?

My understanding is there are a couple of different facilities.

Mr. Nelson: Yeah, it's in Morgantown.

Member Schofield: LANL has some of theirs --

Mr. Nelson: Yeah, it's in Morgantown.

Member Schofield: -- and some may be at the records center.

Mr. Nelson: Sorry, Phil. I talked over you.

It's going to be in Morgantown. It's just some additional data that they wanted to capture.

Are you able to hear me, Phil?

Member Schofield: Yes, I am.

Mr. Nelson: Okay. All right.

Member Schofield: Thank you.

Mr. Nelson: You're welcome.

Chair Anderson: Okay. Any more questions for Chuck? Everybody seems to be on mute.

So if you're trying to ask a question, take yourself off mute.

(Pause.)

Chair Anderson: Okay. Well then let's move on if there's no further questions.

The next issue will be SEC-00188, which is a Sandia petition addendum 2 covering the period January 1, '97, to May 21, 2011.

I believe Joe is going to --

Dr. Roberts: Andy, sorry to interrupt. I think this may be one where we have to maybe wait until 1:30 to start.

Chair Anderson: Oh, boy. So we've got -- okay.

Dr. Roberts: Yeah. So we just have a few minutes since we're --

Chair Anderson: Okay. We can take a quick 10-minute break --

Dr. Roberts: Yeah.

Chair Anderson: -- and come back at 1:30.

Member Clawson: Andy, how about I -- I wanted to ask Chuck a question because I've been working with Chuck on -- it didn't have anything to do with his SEC, but I was working with him on Hanford and I kind of wanted to get an update on where we were at from Hanford --

Chair Anderson: Okay.

Member Clawson: -- if we need more data. If that's all right, it --

Chair Anderson: Sure.

Member Clawson: Everybody could go on break, but if I could just -- I just wanted to ask that question.

Mr. Nelson: Yeah, Brad. Yeah.

Dr. Roberts: I'm sorry, if it's possible for people to

stay connected just so that I don't have to redo the attendance or whatnot, if that's possible, until 1:30?

Member Clawson: Okay.

Chair Anderson: Go ahead.

Mr. Nelson: Yeah, Brad. Does somebody else want to talk?

Member Clawson: No break.

Mr. Nelson: Okay. Yeah, Brad, we're working on the co-exposure evaluation. So that's an outstanding SEC issue that remains open that is progressing.

We got a new version of REX. So we have a -- I think the previous one was 2014. So we have a new one that's -- I think we're calling it "REX 2022."

And so we're comparing that against all our data, that with NOCTS and all that and we actually -- ORAU owes us a big report here late next week, or the following week, and we're going to have a DCAS discussion on that.

So there's progression. They've been digging quite a bit, communicating with the site quite a bit, you know, trying to figure out where all the records are coming from, where they are in the system.

And I'd say the biggest issue we're having is some of the early years that are already SECs and, you know, with uranium, plutonium.

They have a large quantity of records, but at this point in time they're missing a few from the '50s and '60s.

So you know, you get into the completeness issue, you know, how much is enough? Well if you make it an SEC, you know, you've already given -- hey, there's an SEC for that.

So we want to come up with a good estimation of dose for that period of time and still, you know, allow

people to get an assignment of dose as claimant-favorable.

So that's part of the issues that are being worked and some of the difficulties they were having right now.

Member Clawson: Now, Chuck, are you still over Hanford, or is somebody else taking that over? Is that John or --

Mr. Nelson: No. I'd like for someone else, but --

(Laughter.)

Mr. Nelson: No, I'm still under Hanford. John Cardarelli has been helping with all the co-exposure.

We used him as the lead for co-exposure because he is quite involved with it with Savannah River and for -- just to try to keep things as consistent as we can, John's been placed as one of the leads over that.

Member Clawson: Okay. I just was -- all I had was -- I was wondering how this was going because I was getting some stuff from John, but kind of fill-in from you. So I just wanted to make sure I --

Mr. Nelson: Okay.

Member Clawson: I appreciate that.

Mr. Nelson: All right.

Member Beach: Hey, Chuck, can I ask you a question? Same frame as what Brad just asked you, but on Idaho.

Mr. Nelson: Idaho National Lab?

Member Beach: Are you the guy for Idaho or is that --

Mr. Nelson: I'm not the guy for Idaho. Currently, it's Megan Lobaugh. She's been on assignment, but she's returning on Monday for that --

Member Beach: Okay.

Mr. Nelson: -- but Tim looks like he'd like to talk.

(Laughter.)

Mr. Nelson: Come on, Tim. Jump in there.

Member Beach: Hi, Tim.

Dr. Taulbee: Hello. Hi, Josie. I can answer this a little bit.

What the current status is the INL co-exposure model is actually complete; however, what we're doing is we're taking that OTIB and converting it to a new Section 7 for the Site Profiles, you know.

If you look at each of the chapters of the Site Profile, you've got a facility description, you've got occupational medical x-rays, and then you've got the environmental doses and then internal dose, external dose, and then we're going to have an internal co-exposure model section and an external co-exposure model section.

So this conversion started before the OTIB was finished at the end of -- before the end of January.

And so that's progressing right now and our understanding is that, within the next month or so, it will be over to DCAS in this new format and we'll be able to review that and get that out.

So that co-exposure model is -- the mathematics of it is all done. It's the documentation part that's currently working its way through.

Member Beach: Okay. Thank you.

Mr. Nelson: Not only that, Josie, I wanted to say that while Megan's been out, John Cardarelli has been standing in for her. So we don't just drop it.

Member Beach: Oh, no, I know that.

Mr. Nelson: Okay. I just wanted to make that clear.

Member Beach: Thanks.

Mr. Nelson: All right. Thank you.

Chair Anderson: Any other ancillary questions for Chuck, get his blood pressure up?

Member Beach: We've got five minutes, Andy. You can ask a question.

Chair Anderson: No, I have no questions.

Member Clawson: Hey, I do have something for you, though, Andy.

Did you realize that with Sandia that you're actually over Tonopah Test Site, too?

Chair Anderson: Over the what?

Member Clawson: Tonopah Test Site.

Chair Anderson: No.

Member Clawson: Yeah. Well, that falls under Sandia. I thought it was under Nevada Test Site and when -- we were looking at the dose reconstruction, the ones that we had not hit or anything else like that.

So I just wanted to make sure, Andy, that you realized that under Sandia is where the Tonopah Test Site falls.

So -- and thanks to Rose for helping me find that.

Chair Anderson: I don't know anything about that.

Member Clawson: Well, that's why I was just letting you know that because it -- well, Rose can help you look up the information she found for me because when they split that, Tonopah split off as part of Nevada Test site, and same as Area 51, but they took Nevada Test Site workers.

And so that actually falls under Sandia because Sandia was doing a lot of tests out there for objects they were dropping out of the airplanes and stuff.

So I just thought I'd give you a heads up on that

especially like with dose reconstruction of -- where we're low in that area. So just some information for you, Andy.

Ms. Behling: This is Kathy Behling. I was wondering if I could ask Tim just a followup question out of curiosity.

Going forward with the TBDs when you make a change, are you going to be adding this Section 7, and perhaps 8, for the co-exposure models?

Is that something you're going to be doing with the other Site Profiles as they change?

Dr. Taulbee: As they change, yes.

We have a very lengthy schedule for getting this done, to be quite frank. It's going to take us years in order to do that to convert these.

As we revisit the co-exposure models to incorporate DCAS-IG-006, the new, you know, co-exposure implementation guide, as we go through all of those updates, the new ones coming out will all be either Chapter 7 or Chapter 8 of the Site Profiles. There won't be any more OTIBs that are part of co-exposure.

Ms. Behling: Okay. Is this the first technical basis document that you've changed?

Dr. Taulbee: Yes. INL and SRS are the first two --

Ms. Behling: Okay.

Dr. Taulbee: -- that are coming out. The SRS is slightly further along, like maybe a week or two, than the INL one is, but --

Ms. Behling: Okay.

Dr. Taulbee: -- they're both going to be coming out real close together.

Ms. Behling: Yeah. I think that's a good idea. Okay.

Great. Thanks.

Member Clawson: So Tim, is that a COVID haircut?

Dr. Taulbee: This is, you know, just my normal hair.

(Laughter.)

Dr. Taulbee: It's been this way for, you know, since I was 25.

Mr. Nelson: Rashaun, I did want to say something. When we get into Sandia, you -- I think you mentioned for SC&A to start with their presentation; but, like our work group, if you don't mind, I think it might flow better if I do my presentation first because it gives a lot of the background and history of the SEC.

And if SC&A wouldn't object, I think that might work out better for everyone.

Chair Anderson: Okay.

Mr. Fitzgerald: That would be -- yeah, that would be fine. I certainly think that introduction sets the ground for us.

Mr. Nelson: Okay. Thank you.

Chair Anderson: So we're at 1:30 now. You can just continue talking, Chuck.

Mr. Nelson: Okay. Well, again I'm going to make an attempt to pull up -- share our screen. We'll see if I'm successful.

Okay. If you could tell me if that pops up?

Member Beach: Yeah, it's there.

Update on review of SEC-00188 Sandia Petition Addendum 2, January 1, 1997, to May 21, 2011

Mr. Nelson: Excellent. Okay. Well, then I'll get started.

This presentation is for Sandia National Lab-Albuquerque, Tonopah, for SEC-00188 Addendum 2.

My name is Charles Nelson. I'm the DCAS SEC team lead, as well as the lead health physicist for Sandia National Lab.

I wanted to get into a little bit of the petition history of SEC-00188. Originally, it qualified as an 83.13 on October 21st, 2011, and the petitioners proposed a class definition.

You see it's pretty long. It basically involves all the security folks, and you can read each of those on that slide, that worked in the area of Sandia National Lab-Albuquerque for the period of January 1, 1963, through May 21st, 2011.

We did an evaluation during that period and initial part of it a class was added as an SEC on February 21st, 2012.

And that was all personnel that worked in any area of Sandia National Lab-Albuquerque, New Mexico, for the period of January 1, 1949, through December 31st, 1994.

So as you see, it didn't go the entire period. We -- I think Sam Glover was the lead at the time. He saw some infeasibilities and that was added from '49 to '94.

The basis was insufficient monitoring data and information to reconstruct internal dose for that period of time.

It was due to lack of internal monitoring program documentation, lack of internal monitoring data and lack of process information.

The Evaluation Report was published on February 21st, 2012, and it concluded that external doses, including medical x-rays, performed onsite as a condition of employment can be reconstructed for the duration of the evaluation period. So from 1949 all

the way through May 21st, 2011.

Our continued evaluation, since the publication of the 2012 Evaluation Report, has not identified any additional information that would contradict this conclusion that external doses can be reconstructed.

Now, there was an addendum to SEC-00188. And this would have been me, so I came in place for Sam when he left the NIOSH group. And the addendum to SEC-00188 covered the time period of 1995 to 1996.

And in this addendum, NIOSH proposed the following class to be added on July 26, 2018, and that would have been all personnel that worked in any area at Sandia National Lab in Albuquerque, New Mexico, for the period of January 1, 1995, through December 31st, 1996. So we added two extra years.

The basis for this additional SEC was -- for '95 and '96 was that there were some internal monitoring program concerns, specifically air monitoring data deficiencies.

Our concerns were associated with the transitional and developmental nature of Sandia-Albuquerque's internal monitoring program.

We found some evidence that the site was making several improvements in the internal monitoring program, including an increase in the use of personal and area air monitoring; however, the program seemed to be lacking and we didn't find the adequate evidence that some key implementing procedures were fully in place until 1996 and 1997.

Our most current Evaluation Report is SEC-00188, that's Addendum 2, and is focused on the suitability of the radiological monitoring program and associated documentation in monitoring data sufficiency.

In addition, the Evaluation Report addressed security guard force monitoring concerns.

So this is for 1997 through May 21st, 2011. So that's the remainder of the requested period -- evaluated period.

Following are some data sources of the NIOSH team reviewed for SEC-00188 Addendum 2:

We performed 21 interviews with 17 people. There was one site data capture trip since the last SEC designation. We had four written data capture requests.

There were over 900 relevant documents captured and reviewed since SEC-00188 was issued in 2012.

So to date, we have over 5500 total documents in our database pertaining to Sandia National Lab-Albuquerque, and they contain internal memos and procedures, 10 CFR Part 835 compliance and self-assessment reports and the memos associated with that, facility and process information, radiological work permits, incident reports, air monitoring data and internal and external radiological program audits and assessments.

Other sources we've reviewed include Sandia's WebDose database, which is what the site uses for bioassay monitoring results as well as it's a radiation dose reporting tool. So they'll use that to report to DOE total site for the dose -- total dose for the site.

We've also reviewed internal and external monitoring records, breathing zone monitoring and air sample records and derived air concentration, or DAC-hour tracking records.

This next slide shows the available urine bioassays down in WebDose. So if you look at the -- this is going to be from 1997 through 2011.

And the first column is a non-tritium bioassay result. So this would be for uranium, plutonium, americium, thorium and fission and activation products. So they total 2,020.

Then persons sampled is shown for each year with a total personnel and dose. If you add up that column, it's not going to add up to 317 because a lot of people were the same ones monitored for each year.

Finally, you have tritium sample results. There were 7,209 and persons sampled was 362.

Okay. Available internal WebDose data which contains whole-body and thyroid count data. There were -- for 1997 through 2011 there were 1,115 measurements and there were 207 persons monitored.

Additional available internal monitoring includes BZs monitoring, sometimes called "personal air sample monitoring" or "lapels."

These are usually what they would wear on their person. So it's representative of what's in their breathing zone.

So for the period of 1997 through 2011, we broke these down into alpha BZ results and beta/gamma BZ results and tritium BZ results.

So the most significant ones are the alpha BZ results because they usually drive the dose especially for Sandia National Lab.

So for each of those years you'll see a total for alpha. Collectively for the 15-year period there were 5,506 alpha BZ results, beta/gamma BZ results total 6,497, and the tritium results that were used in the breathing zone were 570.

Now, we noticed in 1995 there were some changes into the internal monitoring program. This is being driven by 10 CFR 835.

So Sandia shifted their emphasis of the internal monitoring program for reliance on bioassays, the use of breathing zone sampling and workplace indicators.

So these workplace indicators would be things like

radiological surveys and, you know, could be airborne smears and so forth.

And basically they were looking at the radiological conditions coupled along with these other sampling results to see if bioassays were really required.

It was SC&A -- sorry about that. It was Sandia National Lab-Albuquerque's position that no individual was likely to receive an exposure of 100 millirem in a year.

This is stated in the Internal Technical Basis documentation, as well as the Radiation Protection Plan, and it was also stated in external assessments by internal dosimeters performed in '96 and '99.

The Radiation Protection Plan, if you're not familiar with those, those detail how a site implements 10 CFR 835.

During our review of Sandia's radiological program, we found evidence of field implementation of Sandia's internal monitoring program. So here's a few excerpts to kind of give you an idea.

There was February 3rd, 1998 summary documents from the Rad and Mixed Waste Management Facility Safety Committee regarding the routine bioassay.

They went on to say that the RCTs, or radiation control techs or radiological control techs -- and I guess a lot of people refer to that acronym as RMWMF -- are on routine bioassays.

They went on to say if a trend develops indicating internal doses, then those personnel would be asked to submit special bioassays to determine the scope of the problem.

It went on to say, if trends developed indicating elevated air concentrations or increase in surface contamination, then again special bioassays would be requested from appropriate personnel.

Job-specific RWPs would also contain requirements

for bioassays, if appropriate, for those workers with tasks where there were significant levels of radionuclides or where certain radionuclides such as tritium were handled.

So we saw that Sandia did perform some routine bioassay for some specific groups based on their work activity and job category.

And this is just for confirmation purposes that, you know, they were adequately monitoring people and they weren't seeing any, you know, large doses at the worksite.

Now, I did mention the Rad Waste Fixed Waste facility. Just so you know, it was completed being built in 1995 and that was for repackaging of waste, characterization, treatment and storage and shipment when they decided to ship some stuff offsite.

We did find some additional evidence of field implementation. There was a May 30th, 2001 memo documenting a routine bioassay program for RCTs in TA-V.

Now, the TA-V is where the SPR facility is, hot cell facility, and Annular Core Research Reactor is located.

It went on to say the current schedule calls for annual whole-body monitoring and semiannual urinalysis samples for uranium, thorium, americium, plutonium.

Then again said the Sandia bioassay program is confirmatory in nature, meaning that the bioassay program confirms the results of the effectiveness of the contamination control and other personnel protected activities.

Went on to say since RCTs must be present in all work activities where the possibility of meaningful intakes are credible, their bioassay serves as a good proxy indicator for potentially exposed line personnel.

Let's see what I've got here. Okay. So I'm on slide 15. NIOSH team reviewed RWPs and work planning documents for indication of airborne radioactive materials, looked at the respiratory protection, assigned any personal area monitoring requirements and bioassay requirements, and what we found is where there were indications of surface and airborne radioactive materials, we also found the use of respiratory protection, including personal or area monitoring requirements, and bioassay requirements were sometimes specified.

Our review of RWPs supports that Sandia's Rad Program was adhering to the procedures that were in place at the time.

As I mentioned earlier, Sandia shifted their emphasis of an internal monitoring program for reliance on bioassays to the use of breathing zone sampling.

So what we did is we performed an analysis of the breathing zone sampling data that we had in our holdings.

As you might remember, there was a slide earlier showing all the BZs that we have in our holdings.

In order to perform an internal dose evaluation associated with the Bzs, we did the following steps:

We looked at the intake quantity associated with each BZ filter, then determined the committed dose associated with the intake quantities by calculating it based on the stochastic Annual Limit on Intake for the limiting nuclides for the analysis type and, as you saw earlier, we showed that we had gross alpha, beta and tritium results.

The calculated committed dose was analyzed to determine the distribution of the data grouped by event.

So an event would be considered a radiological work task at a given time on a given day or all radiological work tasks on a given day.

So when we analyzed these BZ data, the results was that the median quantity of radioactive material available for internal intake to individuals located alongside personnel performing radiological work would correspond to 0.5 millirem per work event or workday.

It's important to know that this quantity assumes that an individual is present inside of the work area and they have no respiratory protection. So these are very claimant-favorable assumptions.

The unmonitored worker to whom this dose is assigned would not have been located in the radiological work area alongside a monitored work area.

They would actually have a significant reduction in intake potential due to the separation between the actual work area and the area that can be occupied without the same level of radiological controls.

It's also important to note that we didn't take into account any respiratory protection being worn during these events.

So while respiratory protection was worn in many or most cases, we didn't include that in our calculations.

And considering these conservative assumptions, we concluded that it's not likely that an individual would be able to receive 100 millirem per year of internal exposure under these conditions, meaning an individual would have to be present for 200 events.

So remember, it was 0.5 millirem per work event. So multiply that by 200 to reach -- they'd have to be there for 200 events to receive an exposure in excess of 100 millirem a year.

Okay. We have a table here and it has the committed dose and -- let me make sure I say this right -- and rem for all workers by year.

And these values are the internal dose of record

provided in WebDose for the 15-year period 1997 through 2011.

So if you look in the first column, that's the year, '97 through 2011. Following that is the tritium dose. So this would be a tritium dose of four millirem was assigned for the 15 years in this time period.

The next column is breathing zone sampling. And based on the breathing zone sampling that was performed and the dose of record for this 15 years, there was a total of 26 millirem. So 0.026 rem.

The next column is urine samples. There was a total of 42 millirem assigned to this 15-year period. Next column is thyroid and the total dose assigned was five millirem.

So if you total all those columns together for the 15-year period, 1997 through 2011, there was a total of 77 millirem assigned to individuals total of the entire site.

NIOSH concluded the following regarding the feasibility of internal radiation dose reconstruction for this addendum, which was 1/1/1997 through 5/21/2011:

Based on our review of the radioactive material use at Sandia-Albuquerque and the associated radiation protection programs, we feel the intakes for unmonitored workers with access to controlled areas were unlikely to have resulted in a committed effective dose equivalent in excess of 100 millirem per year.

Our conclusion is not based solely on the implementation of 10 CFR 835.402, but rather our review of exposure monitoring records for individuals involved in radiological activities with the highest risks at the site during the period under evaluation and the total assigned internal dose, committed effective dose equivalent for all employees for this 15-year period from 1997 through 2011 is 77 millirems. So the doses are really quite small for

internal doses.

So regarding feasibility of dose reconstruction, a review of available breathing zone bioassay data indicates that the median quantity is essentially a summary of radioactive material available for internal uptake to individuals located alongside personnel performing high-risk radiological work would correspond to the internal dose of 0.5 millirem per work event or workday.

And, again, this assumes individuals are present within the work area alongside workers and that the individual is using no respiratory protection and breathing the same airborne radioactive concentration of air as workers.

In either case, consistent with the recorded internal dose of 77 millirem for the entire 15-year time period, it's not likely that an individual will receive 100 millirem per year of internal exposure under these conditions.

The NIOSH assessment of potential internal dose concludes that individuals would have to be present for 200 events based on the median dose of 0.5 millirem to receive an exposure in excess of 100 millirem a year.

So in conclusion, we believe that the intakes of unmonitored workers with access to control areas are unlikely to have resulted in a committed effective dose equivalent of 100 millirem in a year.

As previously identified in SEC-00188 report in 2012, we continue to believe that it's feasible to reconstruct occupational medical doses and principal external radiation exposures, including beta, gamma and neutron radiation, for Sandia National Lab-Albuquerque with sufficient accuracy.

Considering the potential exposure scenarios, program policies, procedures, available air monitoring and confirmation of low doses among monitored workers, we find it feasible to reconstruct

internal doses with sufficient accuracy.

We found no part of the class under evaluation for which we cannot -- we feel we cannot estimate radiation doses with sufficient accuracy.

So this is just a standard slide. Feasibility findings essentially saying that we believe dose reconstruction is feasible for internal and external doses at Sandia National Lab-Albuquerque.

That concludes my presentation.

Chair Anderson: Thank you.

Should we go through Joe's presentation and then to questions or do people have questions specifically here for Chuck?

Member Clawson: Let Joe go through his. This is Brad.

Chair Anderson: Okay. That's what I thought.

Okay, Joe.

Mr. Fitzgerald: Okay. Can everybody hear me alright?

Chair Anderson: Yes, and we can see the slides.

Mr. Fitzgerald: Great. I'm not going to go through the slides, I'm going to have Bob do that, but I wanted to give a short preamble before Bob dives in, if that's alright.

Chair Anderson: Okay. That's fine.

Mr. Fitzgerald: Yeah. I've been the lead for SC&A on Sandia from the very beginning, which feels like 16 or 17 years now since the Site Profile Review, and just want to acknowledge, you know, the help that Bob and Ron Buchanan have provided me since we're now at this stage.

As Chuck just outlined, you know, we're following a series of a number of 83.14 SEC determinations over probably some years now covering the 1949 to 1996.

So when we were tasked in April 2019 to review this ER addendum, this was actually the first time we, meaning SC&A, have had the opportunity to review Sandia in terms of the ER.

So even though we're, you know, looking at the addendum in terms of the addendum years '97-2011, because this is really our first crack at Sandia, we're also -- we've also looked backwards at the conclusions in the ER for the 83.14 reviews on external.

So this is kind of a bit of a hybrid review by SC&A looking at those issues as well as looking forward on the remaining years of the SEC from the standpoint of feasibility of the internal.

And for this one in particular beyond the dosimetry issues, we clearly wanted to provide a particular focus on the question of the intakes by security personnel at Sandia.

And the focus there, too, as Chuck kind of focused on, is establishing whether there was a -- could there be a likelihood that they were, in fact -- would receive intakes that would have exceeded the 100-millirem-per-year CEDE that Chuck was referring to. This would be the dose assigned to unmonitored workers.

So we spent, I think, a considerable amount of time focused on that particular issue, including some onsite work and interviews with the security personnel to really shed some light on, you know, what the feasibility or likelihood of that would be an issue.

Overall -- and you probably have seen the report that we've issued now for about a year.

Overall SC&A agrees with the conclusion in this ER Addendum 2 about the feasibility of dose reconstruction for Sandia for '97 to 2011.

And, again, some of it is weighted evidence and looking at the conservatism of some of the

assumptions, but, in general, I think we feel pretty comfortable with that conclusion.

There are some specific issues that get into a particular characteristic of this program at Sandia. They actually transitioned to personal air sampling as opposed to bioassay in that time frame in the mid-'90s.

So that was a particular challenge to look at BZ sampling and looking at whether or not that was providing the records that would be able to substantiate this question of 100 millirem.

And so we did spend, I think, a lot of time -- I know Bob did -- focused on whether that case could be made.

So there are some questions on that which we have brought back to the work group and that's why the focus, as you will see on this presentation, is going beyond that to look at the question of whether that, you know, we could resolve that question of, you know, the values on the PASes.

Okay. With that, Bob, I guess I'll give that back to you.

Mr. Barton: All right. Very good, Joe. Thank you for that. And also thank you, Chuck, for really laying the groundwork. I think that's going to be very helpful as we sort of go through this.

And as Joe intimated, a large portion of this presentation is going to be talking about those personal air samplers, the breathing zone samplers because when we usually talk about these SEC reviews, it usually relates around a more traditional co-exposure model, which would be using the various bioassay data points.

In this case, it's a little bit different in that it's more of an exposure framework or method that goes with that singular value of 100 millirem that Chuck was discussing in his presentation.

And the review of the breathing zone samples is really there to see whether that assumption really stands up to the radiological conditions that these personal air samplers reflect and whether the case can be made, and even using some very conservative assumptions, to say that if you were not part of the actual bioassay program -- because I think that's important to understand -- they still did have a bioassay program.

And, in fact, you'll see a lot of our analysis was looking at the people who were wearing these breathing zone devices and were they also involved in that bioassay program.

Because it's important to remember that this whole idea of 100 millirem per year of committed effective dose equivalent is really meant for the workers who were unmonitored completely or partially monitored.

If you have adequate monitoring, I mean, it's always been the practice that you would actually use the bioassay values.

And then if you were partially monitored, then obviously this 100-millirem assumption would come into play for some portion of your employment.

So please keep that in mind as we're going through this, that the whole analysis of the breathing zone data was really to convince ourselves that the assumption of 100 millirem, which really sort of comes out of 835, is appropriate and bounding for, again, those unmonitored or partially monitored workers.

So these first two slides I'm going to go through and sort of give the overview of the questions we were really asking when we initiated our review, sort of a summary of where we came out at, and then we'll get into some of the more specifics particularly regarding the breathing zone data.

We also have an observation, as you'll see, regarding the external monitoring, which is really sort of a

carryover from a previous review.

And then we'll sort of sum it all up at the end and then we'll get into the discussion.

So moving along hopefully. Okay. All right. So we really framed this up on these first two slides as four major questions that we wanted answered to satisfy ourselves whether this is a valid method or not.

And so the first one was really when we talk about weight of evidence, is it sufficient to really justify the external and internal dose?

And our answer that we came up with was that, yes, but we did have a couple of Site Profile questions that were discussed in the last work group meeting.

One of them involved the Sandia Pulse Reactor. And essentially what that comes down to is a question of external geometry where you had workers when the reactor was shut down, that were physically underneath it, reaching up to do their work. So of course the placement of your external dosimeter is going to factor into that.

We'll talk about that a little bit, but, again, we feel that that is a Site Profile question rather than an SEC question.

And then there were some questions about the tabulation of the actual breathing zone data that NIOSH has captured, coded and analyzed just to make sure that that's accurate in the final record. So that was the first question.

The second question is equally important and that's was the 835 -- we have the documentation, the technical basis documents, but we want to convince ourselves was it implemented properly to, again, support this framework of assigning 100 millirem internal dose for, again, those who were unmonitored or partially monitored. And the answer that we came up with is, yes.

We have documentation of the program implementation to reach the 835 requirements by the end of 1996, which is, of course, the end of the most recent SEC.

And so we're talking about, again, 1997 through 2011 in this most recent assessment for Addendum 2.

We came to that conclusion -- there was numerous self-assessments. I think there might have been 20 in all over the years in question that were done by the site themselves.

Obviously, there were also some oversight from DOE regarding the noncompliance tracking system.

And then also the ORPS database, which is the unusual occurrence reporting system, I believe.

So moving on to the next slide, the third question was do we see any limitations or significant uncertainties that would give us pause about using this framework of 100 millirem per year?

In other words, when we look into the data, this breathing zone data, do we see certain areas or indications, types of work in what are essentially RWPs that would specify these personal air samplers being used that would say, well, you know, on average, maybe, you know, very unlikely, on average, you get to 100 millirem, which is really the central premise of your proposed approach. Are there jobs out there or areas where that just simply doesn't hold true?

And so when we went in and analyzed the same dataset that NIOSH had, we found that there is weight of evidence there, including a number of very conservative assumptions when converting these breathing zones into actual exposure potentials that when you put the entire puzzle together, we feel that this is a good method, in this case, for this site. And I hope that becomes clear as we really dig into that breathing zone data.

And then this fourth question, which is very specific to security guards, was it a potential for the security guards through their duties and walking through the site, going through various areas, that they would be in excess specifically of this 100-millirem framework for assigning internal dose to unmonitored workers?

And SC&A concluded again there that we found it unlikely that the security guards would have been in the situation consistently to exceed the dose that's being proposed to be assigned.

So this slide is specific to the security guards and part of that analysis was actual documented interviews which go back all the way to 2011. We had some in 2014, 2018.

Also looking again, like I mentioned, just what kind of monitoring policies and procedures were in place? And of course the following question is always implementation on that one.

All right. So looking at incident reports and seeing if there's something out there that gives us pause specific to the job category of security guards.

Also, SC&A with the work group and NIOSH did an onsite tour January 2020 and performed interviews with security guards who were employed during this period that we're talking about, '97 to 2011.

And our conclusion there was that certainly there were some incidents where contamination existed that the security guard population could have been exposed to, but, on the whole, we still don't feel that it rose to the level where it would have exceeded this proposed dose reconstruction approach of 100 millirem per year.

So now we're going to get into the breathing zone data itself. And, again, this is not necessarily forming the basis of the proposed internal dose assignment approach, but really it's a test to see if there's evidence out there that there's a group of workers for which that type of exposure framework really just --

it doesn't work.

And so when we look at data, obviously we always talk about, you know, data completeness pretty much first and foremost.

And the best way to really make that completeness comparison is if you say, well, how many breathing zone data points do we have versus how many should we have?

And normally -- well, not normally, but what would be ideal is if you had sort of oversight documents from the health and safety staff usually on a monthly or quarterly basis or something like that that might document exactly how many of these breathing zone samplers were issued and measured, how many workers actually were monitored via this method.

In this case, you can compare the data we have against what we should have to establish completeness.

And this is really the essence of Finding 1 in that we couldn't find any of those secondary sources, the periodic health and safety reports or the health physics reports, to exactly know what might be missing from the breathing zone dataset that we have, which again was analyzed with conservative assumptions to form the basis that it would be highly unlikely that somebody would be exposed over 100 millirem per year and also not be involved in the bioassay program at all.

So that was really Finding 1 that we couldn't make that direct comparison. So it makes it very difficult to really put a hard number on how complete the dataset we have. So that was Finding 1.

One thing we also did to try to get an idea of the level of completeness, or incompleteness, was just simply looking at the number of these personal air samplers that we had over time both on an annual basis and if you look in, I believe, one of the appendices has it even down to the month.

And what we found is, you know, you wouldn't expect it to be essentially a flat line over time as different projects start up, other ones complete, different RWPs, number of workers. You would expect some variation.

But when we looked at it over time, we said, well, you know, you have some gaps in there, you know. A few weeks, a month here and things like that that suggested to us that the dataset we have is likely not complete.

And of course we couldn't verify that from the secondary sources that I just talked about, which were the periodic reports.

I'm not sure if that's even something that they would have reported on a regular basis at Sandia.

They do at some other sites, but, again, that was not available to really get a grasp on how complete our dataset is and whether that's acceptable as enough evidence that, again, back to the 100 millirem, is that appropriate. So that was Observation 2.

We also compared with the available electronic data sources, which was WebDose. Chuck talked about that.

And our comparison was that, well, we actually have more data that was captured by NIOSH than is contained in WebDose when we simply compared the number of workers by year that were contained in WebDose to these personal air samplers with what we actually have in the dataset.

So in some ways, the dataset that was captured by NIOSH would be considered more complete than what is contained in WebDose, which is not all that surprising because, as Chuck mentioned, WebDose was essentially designed as a database to track workers for compliance purposes.

So it really would only involve those workers in the higher exposure potentials to make sure that none of

the annual limits were exceeded and that sort of thing.

So essentially we were not really able to quantify the level of completeness or incompleteness here for those reasons, but the real question is what implications did it have for dose reconstruction.

What can we say about the data that we're potentially missing? What can we inform ourselves on what that exposure potential might have been?

Could that missing data represent a group of workers that are different from the group of workers we have the data for that would really sort of invalidate the use of this breathing zone data as the basis for the 100 millirem?

So NIOSH's response on the data completeness issues was they agreed that the raw field monitoring, these RWPs, with breathing zone data that were captured is incomplete and we really don't know necessarily how incomplete it is.

You could obviously put a cap on it somehow by making comparisons perhaps to the number of externally monitored workers or just the size of the workforce, but even then we don't know how many of that workforce really wore the breathing zone data or how many were supposed to wear the breathing zone data.

So in this way, completeness is very difficult to quantify. So we have to start looking at some other things to, again, inform ourselves, what could that potentially missing data represent and what would be the implications as far as this 100-millirem internal dose assignment.

So one of the things NIOSH brought back in their response was a comparison to what's known as the DAC-hr -- it's derived air contraction -- tracking logs.

And, like WebDose, these were designed to track workers who essentially had measurable exposures

on their breathing zone devices.

So if they wore the breathing zone, it measured and it came up positive, you would be included in these DAC-hr tracking logs which really went down to almost very low levels of exposure, but they also represented those workers who Health and Safety was most interested in tracking again for compliance and reporting purposes.

So comparing those DAC-hr logs, which should contain all the most highly exposed workers who wore these breathing zones, it was almost 100 percent were actually included in the capture data that NIOSH has that informs the basis for this 100 millirem.

So if anything, you could say, well, if the missing people are in these DAC-hr logs, you would say that it's either representative or potentially bias data towards higher exposures because we have 99 percent of those that made it into this health physics tracking system.

One caveat here is that we can only make that comparison for a portion of the SEC period simply based on the DAC-hr logs that we had in-house and that was a little over a third of the time period on the SEC.

Like I talked about with WebDose, when we compared it to that, we found that WebDose also didn't appear to be a complete dataset.

In fact, it looked less complete than what we had since the NIOSH capture data had many more results in every year that we looked at.

But again since WebDose was designed to really track the highest exposed workers and not all of the workers, it's really only important to say that the WebDose matched what we saw in the DAC-hr, and the DAC-hr matched very well what we had already in hand.

So the work group discussed this on April 11th. So just about a little over two weeks ago.

SC&A had agreed with NIOSH's response in the assessment in the fact that, if anything, it looks to us that what we would be missing as far as completeness of the dataset would not be the highest exposed workers.

Because if that was the case, we'd expect to see them in the DAC-hr logs or in WebDose and we wouldn't have their data in the NIOSH dataset, and that just simply wasn't the case.

So based on that, the work group at that meeting in April, again, a little over two weeks ago, closed Finding 1 and Observations 2 and 3, which were the three items specific to completeness.

However, based on that discussion, the work group recommended that some followup activities should be taken up specifically by the SEC Issues Work Group specific to how we do these completeness analyses because they're important, really, for every site that we look at in these SEC discussions, and is there a way to develop some sort of uniform approach so that we're being consistent program-wide when we evaluate completeness.

So while they did close the single finding and those two observations, the followup recommendation was to potentially have the SEC Issues Work Group try to take a look at are there methods out there so that we can standardize the data completeness assessments, again, for consistency across the program.

Moving on. This one, Observation 1, really deals with the -- sort of the quality assurance aspects and how the amount of breathing zone data, frankly, was reported in the ER.

One thing we had found was that there were a few duplicate samples in the dataset. And how this happened is that two separate documents had been captured.

They didn't necessarily look identical, but upon really close inspection we found that they represented the exact same person, exact same exposure event and exact same results so that essentially they were being double-counted in there and, you know, sort of weighting the exposure analysis that followed by appearing as two separate worker exposure events when really they were, you know, only one. So that was sort of the first part of that observation.

And also just the way they were reported in one of the tables of the ER, we believe there was some double-counting just in the total amount of available breathing zone samples.

And it really came down to something as simple as, you know, in some cases you'd have a single breathing zone event, a single worker wearing a breathing zone, and it would be counted for alpha, beta -- beta/gamma and tritium, as Chuck indicated.

And, in some cases, that was counted as one breathing zone result. And, in some cases, it was counted as essentially three, one each for alpha, beta/gamma and tritium, even though they were the same exact exposure event.

And it was a little inconsistent there, so all we were suggesting was that those totals should really be corrected so that they accurately reflect the amount of data that we have.

So in Part 1 where some samples were actually copied twice, and, so, analyzed twice, NIOSH went in, they agreed and they removed those duplicates, reran the results, and essentially there was no change in the idea that you're at about 0.5 millirem per event.

So even though those duplicate samples included originally, they did not make any appreciable difference.

And so removing them was the correct thing to do just to see if it did bias the results in any way, and

they did not.

The second part of it was just how these -- the total number of BZs were reported. NIOSH has essentially said that when they essentially port all this documentation over to the Sandia TBD, those totals will be updated to more accurately reflect what we actually have in-house rather than a little inconsistency in the reporting of those totals.

So based on that, the work group discussed this issue again earlier this month. They elected to close Part 1 of the observation and Part 2 is being held in abeyance, again, as a Site Profile, not an SEC issue, because NIOSH had committed to updating those totals when they port this methodology over to the TBD.

Now, this is where we kind of took a look at some of the characteristics within the breathing zone data, you know.

When we see some individuals, how often were they actually wearing these things? Which is an important question, again, when we sort of circle back to is 100 millirem per year a good number if we can accept that a maximizing exposure, on average, would be 1/2 a millirem.

Thus, as Chuck mentioned, 200 events per year to reach 100 millirem, well, how many events are we seeing for these individuals and actually how are they spread out?

So Observation 4 essentially said, you know, when we looked at those breathing zone samples, we found that you actually had a small group of people that constituted most of the samples that we have in-house.

And for, I think, something like 4/5ths of the population within that breathing zone dataset had about 20 samples per year or less.

Now, of course that does come with the caveat that

we really don't know what level of incompleteness is there, but it was just one way to look at it again to see if there's a problem.

I think the worker with the most breathing zones per year was just over 100. And so if you compare that with the 200 events needed to even reach 100 millirem, we're, again, far below that.

We also found that the workers who most frequently were contained in this dataset actually also participated in the non-tritium bioassay program.

So they would have been submitting samples for the plutoniums and things of that nature.

So that was another thing to think about, again, when we're talking about weight of evidence here, because these workers who are actually in the in vivo monitoring program, in the bioassay program, really wouldn't even have this method of 100 millirem used unless there were periods of partial monitoring which could not be covered by their own internal monitoring results. So that was Observation 5.

NIOSH concurred and believed that it did not affect feasibility here or the method of 100 millirem.

The work group delved into these things again earlier this month and elected to close both Observations 4 and 5.

Now, the actual exposure potential that we get from looking at these breathing zone samples -- and this again goes back to the, you know, half a millirem per exposure event, 200 events per year to reach 100 millirem -- how does that stand up?

Do we agree with the half a millirem per event and also how does that change if we start looking at these exposure estimates, again, on a per event basis?

And when I say, per event, I mean a worker was assigned to an RWP, they were given specific breathing zone requirements, they wore their

breathing zone, the time it was worn was recorded and then it was measured. That's what we refer to when we say "event" in this case.

We said, well, you know, again, are there individual areas and years where it just seems like the exposure was much higher because, of course, the 100 millirem is really based on aggregate of all these breathing zones over this period from 1997 to 2011.

So are there years in there where it doesn't all -- or specific areas that really give us pause?

And we found that, yeah, sure, there's obviously going to be fluctuations where there's some areas in some years that are higher than a half a millirem.

However, looking -- again looking at the big picture as a whole, there were several mitigating factors that I'm going to get into to arrive at that half a millirem per event.

These were when NIOSH went in and did their analysis and when SC&A did the separate one. They used essentially the same assumptions, just remained consistent, and the contaminant was always assumed to be -- or nearly always assumed to be plutonium even though often the RWP would specify that, no, they're working with fission products or, no, they're working with depleted uranium.

So when you do your exposure calculation, by assuming plutonium you're already coming up with a higher result than is actually reflected by that RWP.

As Chuck mentioned, doing these, again, exposure assessments of what is the dose per event or job, if you want to think about it that way, never was respiratory protection considered even though it was worn quite often, I think, somewhere between 40 to 90 percent of the time based on the year and job that we were looking at.

So by not considering respiratory protection, which, you know, can lower the actual exposure by orders

of magnitude compared to what's actually measured on the breathing zone results, again, it's another layer of very conservative assumptions to convince ourselves that this 100-millirem-per-year approach is going to be bounding to unmonitored workers.

And then the final sort of mitigating factor here was whether or not it was likely that a single worker, again, not wearing respiratory protection, maybe not even exposed to plutonium, would be exposed to 200 such events that would be necessary to exceed sort of this bounding number of 100 millirem again based on the breathing zones.

So the work group discussed this again at the April meeting and agreed that while there are fluctuations, as you would expect, there's going to be some above, some below because it's an aggregate of the data over the entire period, that it would not actually affect the feasibility and elected to close Observation 6, which essentially said, yes, you're going to see fluctuations based on year and area, but when you take sort of those three mitigating factors into account, is that really concerning?

And we were all in agreement, again, on April 11th that it would not necessarily affect the feasibility conclusion.

Moving on from breathing zone very briefly, I had mentioned this at the outset, there was one observation related to external dose and the Sandia Pulse Reactor.

And again, it's a geometric issue where you had workers essentially underneath the source.

And so of course any sort of exposure, external exposure, you know, to the hands or the head or any organ or tissue that's higher than where the badge was, is going to need to be corrected to actually capture that exposure.

NIOSH's response was that there is actually extremity monitoring for these activities that are

going on underneath the pulse reactor. They have wrist and even head dosimeters.

So they have the data to create appropriate geometric correction factors to get from premeasured external exposure to what the exposure would have been to some of those organs and tissues that were closer to the source.

NIOSH indicated earlier this month that the work is already underway in developing those correction factors. So the work group, during that discussion, accepted that as a viable path forward.

And so this observation was really put in progress, but also in progress as a Site Profile issue because it's believed that we have the data to develop an appropriate correction.

We just -- the work needs to be finished up on that. So it sort of remains in progress until it's seen by the work group

All right. So to summarize all this, Finding 1 and Observations 2 and 3 were again related to the data completeness issue.

Again, we weren't able to necessarily quantify how -- what level of incompleteness, but I hope as we went through some of the facets of the breathing zone data, it's determined that there is a reasonable weight of evidence argument that while we don't know necessarily what's missing, what we have likely represents the higher exposed workers who were monitored via breathing zones and the dose estimates that were done were sufficiently conservative, that the lack of full completeness analysis, or even knowing what level of completeness we have, was really not as much of an issue to actually obviate the feasibility of doing internal dose reconstruction.

Observation 1 was really about documenting the total number of data points. And also the other part of that was the duplicate samples that we had identified, but

NIOSH went back, pulled them out, we ran the data and it did not make any discernible difference on the conclusions.

4 and 5, again we're looking at the characteristics, were there areas, jobs, you know, which areas had respiratory protection and -- well, when you see some fluctuations, but did not feel that that affected the feasibility of this proposed approach of 100 millirem.

Observation 6 is when we actually looked at these breathing zone measurements and applying those very conservative assumptions, you know, does this 100 millirem make sense as a bounding approach. And again, that one was closed and is not affecting feasibility.

Finally, you have Observation 7, which we just discussed, which is really a Site Profile issue to develop correction factors for external dosimetry when you have sort of abnormal source configurations such as underneath the SPR.

And so the work group agreed earlier in April with a NIOSH determination the DR is feasible for this SEC-00188 Addendum 2 period, which again is from January 1st, 1997, through the -- mostly the end of May 2011 and all workers were considered.

So that's the summary. We have a reference slide here so you can get to some of the underlying documentation which certainly delves into more of the specifics of each of these things, but we wanted to keep it a little bit more higher level since this is considered -- or at least at the end of the meeting was considered an update for you all to start considering these things.

I certainly don't want to speak for Dr. Anderson or anything, but I think the sentiment was that, you know, this simply wouldn't be enough time necessarily for you all to delve into extensive documentation and the back-and-forth to really necessarily render a decision at this meeting, but that

you all should be updated on the activities that are going on in that current status.

So with that, I can certainly open it up for any questions or, Joe or Ron, if you have any additional comments before we take questions?

Chair Anderson: I want to thank the three of you. Even as somebody who's gone through all this now several times, it is a wealth of analysis and presentation here.

And I think the key underlying thing here is that using the 10 CFR 835 100 millirem as a bounding dose rather than going to the, perhaps, more complicated version of trying to do coworker models and dose reconstruction that way.

So I think we have gone over it very extensively as a subcommittee and I'd like to open it up to the rest of the Board to look at.

We did, in fact, take a vote to recommend to the Board that we accept the NIOSH assessment that for this group, this time period, that dose reconstruction is feasible.

Member Clawson: Andy, I do have a question -- this is Brad -- for Bob or Chuck, whoever.

One of the problems I have with this breathing zone, as you guys said earlier in this, they were trying to use this 100 millirem to get away from the bioassay program and so forth. So they get under this 100 millirem era.

What were their requirements of who would wear the BZ? Did they have something? Was everybody to wear it or were they 1 out of 10 people or what?

Because from my past experience, one of the issues I have with these BZs is because the people were in contaminated areas, they would give it to the foreman that was out of the area, but within the area, to wear because they didn't want to contaminate

them.

And so I was wondering what kind of requirements did they have on who would wear it and how many people would wear a BZ.

Because we run into this at all these sites and I have a lot of heartache with breathing zone methodology.

Did they have something -- a standard -- so much -- so many people or anything like that?

Mr. Nelson: Brad, this is Chuck Nelson. We looked at the radiation work permits and generally what we saw when BZ samples were assigned, it didn't say were assigned for just certain people. They were assigned for the workers performing the radiological task.

And the use of the BZs are a more sensitive mechanism to see in these hard-to-see radionuclides. So that's why they were implemented rather than just sticking with bioassays all the time.

Member Clawson: Well, Chuck, I understand that and -- but also what came into this, too, was that processing these rating area zones, these BZs, got costly, too.

And so I know that on several RWPs that we worked to, one out of maybe five us would have a BZ and they classified it as all of us, because they said this is taking a representative sample for all of you guys.

Which anybody that's worked in the industry knows that everybody can go into the same place and people are going to come out -- I just -- there's -- to me, there's not a clear, defined process for these breathing area zone monitoring and I have not been able to see it yet.

Everybody says what they felt it should be, but what it actually turned out was not. So that's why I was wondering if they have the requirements for that.

Mr. Barton: This is Bob.

I can say that we didn't see any evidence of cohort sampling or anything of that nature.

As Chuck sort of described, we get -- we look at an RWP. It would usually have a description of the work, what the contaminants of interest were and then the people involved.

Now, what I can't say for certain is that there weren't other people who did work around that area essentially under that RWP who weren't listed, but we certainly didn't see any evidence of that.

Member Clawson: Okay.

Mr. Barton: In other words, there weren't people on the same RWP who didn't have a breathing zone result.

Member Clawson: So when you took those -- say there was five people on it. There were five different BZ samples or were they all the same?

Mr. Barton: Five distinct measurements.

Member Clawson: Okay. That's what I wanted to see because with us they would take and they would put one on us, and then they'd give us -- all that was on there, they'd give us the same dose of that one sample because that was more cost-efficient.

And so I was just -- I just wanted to see this and I know this is in the earlier years and stuff that they started with BZs also. I just wanted to get a clarification if it had something. Thank you both.

Chair Anderson: Any other questions?

To me, this may be a question here, but is -- I mean, part of the issue is the 100 millirem as a bounding dose, and the other is the per-event assessment of assigning 0.5 millirem.

And repeatedly through this that's 0.5 millirems as a medium dose, so one has to wonder what is the variability there.

And Chuck maybe can go through how the 0.5 is chosen as a value to then say, well, you would have to have 200 of these events per year to get close to the 100 millirem.

Mr. Nelson: Dr. Anderson, so we took the most conservative number using the alpha results and we used the median dose of 0.5 millirem.

And as we discussed at my presentation and Bob Barton also mentioned in his, we worked in a lot of conservative assumptions, you know.

We didn't assume any respiratory protection even though it was most likely always used. We used a very conservative radionuclide of concern, plutonium-239, in most cases.

So all those conservatisms, you know, coupled with the number of events that were even likely, which are well less than 200 -- I think what Bob mentioned was maybe one person had a hundred -- but the majority, the amount of times they were monitored was close to 20.

So we feel like this number is very conservative, I mean, especially given the total assigned dose of record of 77 millirem over 14 years. And that's from bioassays, whole-body counts, breathing zone sampling, you know.

Whenever there was an upset condition, we found indications of elevated contamination levels, elevated BZs.

Obviously, they would recount those and oftentimes those numbers would go down, but they would implement bioassay for the people and they would check to see is there really an issue going on.

So there was backstops in the program and ultimately, you know, when they first started out using BZs, they were using them quite a bit.

Everything was going to an internal dosimetry. So

then as time went on, you know, they just weren't seeing much intakes. We had a lot of zeroes.

So they just weren't seeing a whole lot of those. So we feel that the 100 millirem is very conservative.

Chair Anderson: No, I agree with that, but my question really was on other times when you're doing your modeling, you use a 95 upper limit rather than the median number or a 99 percent of the -- in the distribution. So that was my only issue.

Here, you chose a median number and I agree there's all sorts of conservatism, and we discussed that at length of are we really generating a dose or just coming up with a method to try to document that the 100 is certainly adequately conservative.

Member Clawson: Andy, this is Brad.

So if I'm understanding this right, when we said that it was feasible to redo this, we were actually -- these people that were involved in this were -- they are going to get 100 millirem per year or what are we -- Chuck, what are we saying that we're going to give these people?

Mr. Nelson: For an individual that has access to the controlled area or radiological area -- I hear somebody is not muted. Sorry.

Those people will be assigned -- there will be a -- we will update the Site Profile to analyze this and document a methodology, but the bottom line is if you don't have adequate internal dosimetry records or you don't have internal dosimetry records, we're going to make the assumption that you got 100 millirem and that will be analyzed for each organ of interest and that would be assigned.

So it's super conservative especially considering 77 millirem was assigned to all people for a 15-year period.

Member Clawson: Okay. That's what I thought I

understood and I do think that's very conservative.

I agree with Andy on that, but I just wanted to make sure that I was reading this right when I did, because there was a little bounce back and forth there. So thank you.

Mr. Nelson: Yeah, it's not necessarily a cut-and-dried approach. An internal dosimetrist really has to dive into this and get it documented in the Site Profile.

That will all be ran through SC&A and the work group.

Member Clawson: Okay. Thank you very much.

Chair Anderson: I think what -- and I'll ask if there's other questions, but what the work group did is -- there's still a lot of work to be done, but we concluded that once that's all completed, it will be feasible to do the dose reconstruction.

So from the SEC standpoint, we voted to accept NIOSH's determination that dose reconstruction is feasible for the group.

So that would be our -- are there other questions?

Member Beach: No. I was going to say, Andy -- this is Josie -- that was a unanimous vote also; wasn't it?

Chair Anderson: Yes.

Member Roessler: Yes, it was.

Member Beach: Yeah.

Chair Anderson: I mean, that's partially what Bob was saying is that we just threw a whole lot of all of you, many of who haven't had a -- too much time to delve into it and go with it.

So an option if there are people who want to take some more time and have us bring it back, we could table our motion, but right now we really have, as a group, worked it over and SC&A, as you can see, did a very exhaustive review as well.

It is a new approach using this 100 millirem, but it does seem, in this case, to be eminently appropriate.

So we would recommend, and I do have a letter if we go that route or somebody makes a motion to accept our recommendation.

Member Field: Andy, this is Bill. My camera is not working today. I apologize for that.

Is there a petitioner that -- would it be appropriate to see if there's any petitioners who want to make any statements?

Chair Anderson: Yes. Yes.

Rashaun, I know we put a --

Dr. Roberts: I think you just asked if there are any petitioners on the line that would like to make a presentation.

Chair Anderson: Okay. Any of the petitioners for the Sandia site wish to make a comment or presentation?

Member Lockey: Hey, Henry?

Chair Anderson: Yes.

Member Lockey: Dr. Lockey. Jim Lockey. Can I ask you a question, Henry? You were on this committee.

When Bob -- Bob made a very clear -- the presentations were very clear to me. I think the data was, too, but Bob had mentioned that the group is going to recommend -- or they're going to pursue a uniform objective methodology to look at data completeness.

Did I hear that correctly and who's going to pursue that?

Chair Anderson: The Sandia group felt that really wasn't something for us to do, but that an option -- and that, again, would be another issue for the Board

if we wanted to move forward, would be where is the group, which group, and it was felt that the SC&A or the methodology group would be the appropriate one to send it to.

On the other hand, we basically said that really is not just for Sandia to do because it is potentially an area that's used in a lot of its sites.

And so separately the Board can make a decision, do we want to move it to a specific group to start to delve into that?

Member Roessler: So Henry, to make it clear, there are really two decisions. One, is -- and I'll agree that the work group did vote unanimously.

They agreed that dose reconstruction is feasible. After all this detailed work by SC&A and our work group evaluation, it is feasible for this SEC; however, because we often, in work groups, get this question of data completeness that -- and we wanted to make sure that we develop a uniform approach to this concept, that another work group -- and it seemed it would be appropriate for the SEC Issues Work Group to take a look at that to make sure that we are developing an evaluation approach that's uniform for this type of question. So there are two separate --

Chair Anderson: Yes.

Member Roessler: -- questions.

Chair Anderson: That is correct.

And the other is to take a look at it to see it may be that each site has enough unusualness to it that there isn't really a standard approach that can be used, but we did feel it was worth having a smaller group put together, discuss and have SC&A take a look at it and see whether there's commonalities that we could then put together and say here's an approach that when you're looking at data completeness, go through these.

It's just like when -- whether we can do that or not I'm not convinced, but it's sort of like when we went through and developed a checklist for utilization of coworker models.

Member Beach: Yeah. And, Andy, this is Josie again.

I believe NIOSH was going to take the first stab at putting that together for the SEC's work group.

Chair Anderson: Yes, that was --

Member Beach: That's what we decided, yeah.

Chair Anderson: Yeah.

Member Kotelchuck: Henry, Dave Kotelchuck.

I -- did I miss something? Because I did not see Bob Barton's presentation in preparing for the meeting.

I certainly saw Charles' and I read it, of course, as I read them all, but I would love to reasonably persuade about what Bob said, but I would love to look it over more carefully myself.

First, was it sent out?

Member Roessler: Yes. It was on the website.

Member Kotelchuck: It was on the website, oh.

Member Roessler: It was under the meeting announcement. It was included as one of the presentations. That's how I found it.

Member Beach: It was sent on the first installment, I believe.

Member Kotelchuck: Well, I looked in the first installment. I even checked it recently. It has Charles' presentation, but it doesn't have this.

Member Roessler: Yeah, it does.

Member Lockey: That's where I saw it.

Member Kotelchuck: On the website?

Chair Anderson: You didn't scroll down far enough.

Member Kotelchuck: Okay. All right. Okay. I --

Mr. Nelson: Dr. Kotelchuck, this is Chuck Nelson.

Yeah, it was located there in presentations. And also underneath it there's, like, supporting documentation. So that would have also included presentations from our work group meeting.

Member Kotelchuck: Okay. All right.

Mr. Nelson: And if you look there -- actually, SC&A did a lot longer presentation. So it gives you a lot more detail on that as well.

Member Kotelchuck: Yeah. Well, okay. Then I will accept that I overlooked something although I'm honestly surprised, but alright.

Chair Anderson: Again, the time line was pretty short between when our group met and this meeting.

Member Kotelchuck: Yes.

Chair Anderson: There was a lot to go through, which is why, at this point, the recommendation from us is that we would -- that a class not be added to the SEC.

We certainly could have further discussion about that, but if you wanted to propose tabling it for the time being, NIOSH will continue apace doing their dose reconstructions now.

So I just want everybody to be comfortable with this somewhat unique approach to using the 100 millirem.

Member Kotelchuck: Right. Right. Of course.

Chair Anderson: And that's something that will potentially be looked at for later years in projects at other sites potentially.

So that is a change from the traditional method that we've used. So we need to think about that carefully.

Member Kotelchuck: Okay. I must say I went back on my CDC computer and looked at the first distribution material. It is not there.

It's not there on mine and I'll ask for it; however, so I obviously would like to look at it further, which would suggest tabling, but it is I who am the only one holding everything back and I'm reasonably convinced by the presentation I could vote, but I don't want to just delay it if other people feel ready to vote. I leave that up to others.

Chair Anderson: So are there other questions, comments people have?

Member Beach: I was going to say, Andy, that I don't think, listening to Dave, there's any rush.

Chair Anderson: Okay.

Member Beach: And if even one member of the Board is not ready, then I think we should postpone the vote and table it.

Member Kotelchuck: I would really appreciate that.

Member Roessler: The other thing that might help is -- I don't know when the transcript would be available, but I think if board members wanted to look at that and understand the detail that we went into as a work group to look at that and what our comments were at the time, that might be helpful.

Chair Anderson: That's kind of where I was saying we wanted to be very sure that people are comfortable with this.

And since the recommendation is to not add it to an SEC, it won't, you know, the activities will continue apace so that we certainly could -- if we want to make a motion to table, the committee --

Member Kotelchuck: Yeah, I would like to just table

it until the next meeting.

Member Clawson: I'll second that.

Chair Anderson: Okay. Any discussion?

Member Ziemer: You can't discuss a table to motion.

Chair Anderson: Okay.

Member Ziemer: Per Robert's Rules, you have to vote immediately.

Chair Anderson: Okay. So now, that makes it easy. Thanks, Paul.

So we have a motion and a second to table the decision in the recommendation by the work group to agree with NIOSH and not recommend adding this to the SEC.

So I think we need to take a --

Member Kotelchuck: A recorded vote?

Chair Anderson: Individual votes.

Rashaun?

Member Ziemer: Just for clarity, we're voting to table. We're not voting whether or not to add it to the SEC.

Chair Anderson: That's correct.

Member Kotelchuck: Right.

Chair Anderson: The motion that we were discussing was to add it to the SEC or not, and our motion was not to add it. That's what the subcommittee recommended.

Member Ziemer: That motion remains unresolved and --

Chair Anderson: Right. And that's what's being tabled.

Member Kotelchuck: Correct.

Chair Anderson: So Rashaun, I think we have to do --

Dr. Roberts: Let me ask Dr. Ziemer -- so, do we need to do a one-by-one, Dr. Ziemer?

Member Ziemer: There's not a rule on this. It's the call of the chairman on this kind of thing, but it does require a majority vote.

Dr. Roberts: Can that just be "all in favor" or do I need to --

Chair Anderson: Yeah.

Member Ziemer: Yeah, you can do that.

Chair Anderson: Okay. Well, let's do all in favor say aye and --

(Chorus of ayes.)

Chair Anderson: Do we have any nays?

If there are no nays, then the motion has been tabled.

Member Kotelchuck: Okay. Good. Thank you, folks.

Chair Anderson: Good. So I think -- I want to be sure everybody's got all the materials that were sent.

And if you have questions, bring them up and we'll bring this up again for discussion at the next meeting.

Member Kotelchuck: Okay. Good.

Chair Anderson: Okay. So with that, if there's no more questions on that, we'll move on, Dave, to your subcommittee on dose reconstruction reviews.

Subcommittee on Dose Reconstruction Reviews
Update & Discussion

Member Kotelchuck: Sure. Okay. Good. Maybe I'll

make a few background remarks before we begin our slides.

As board members, you know from our last two reports to the Secretary of DHHS in 2016 and '19, that the subcommittee is always trying to make sure that the one percent of samples we select for reviews from the 50-plus thousand NIOSH dose reconstructions are representative of the body of the claims.

Based on these reports, I think we've done a pretty good job so far, but we're always trying to improve.

So recently the subcommittee asked the consultants, SC&A, to review the first step in our process, the selection of claims to be reviewed by the subcommittee.

SC&A completed this report and last Wednesday the subcommittee met to review the report.

The lead author of the report was Rose Gogliotti, who is with us today. After discussion, the subcommittee members present unanimously adopted, with our thanks, all of the recommendations of the SC&A report and I'd like to present a summary of the report and the recommendations to you today for review and comment.

So let's begin. You have the first slide up. Let's go to the next slide. Okay. The criteria we currently consider when selecting cases, are we look at cases with 45 to 52 percent probability of causation, the best estimate dose reconstructions.

And somewhat, in order, we look for representation of DOE and AWE facilities, we look at employment dates, career duration, occupation, gender now more recently, and also cancer diagnoses to a limited extent.

Okay. Next slide. Let's take a look at the comparison of the probability of causation distribution selected by the subcommittee with the population of claims

reviewed by NIOSH.

And the crosshatched area are the subcommittee reviewed cases, and the dark line is the NIOSH evaluated cases.

And as you see, since we're selecting typically 45 to 52 percent, the 45 to 49 percent, all of which are, you know, select toward that, they represent -- their 27 percent of the cases the subcommittee reviewed, they represent only one percent of all of the claims reviewed by NIOSH.

And there is a little bit of the selected -- the preferred selections in the greater than 50 percent although I should note that when you go way above 50 percent, oftentimes underestimates are made and the reviews are truncated, if you will.

So -- and also, by the way, you'll note for less than 20 percent that about half of what NIOSH reviews are -- have a PoC less than 20 percent.

And of course they represent only eight percent of what we looked at by the subcommittee, but of course for us in the reviews for the subcommittee if there's an error, it would take an egregious error for something that was initially considered less than 20 percent to be -- to have its, if you will, compensation changed.

So basically we're looking at a little bit more than one percent of all the NIOSH claims, yet we want to cover the claims of females, we want to cover adequately the large and small facilities.

So the SC&A made the following recommendation which is on the next slide. The subcommittee should continue selecting cases with PoC near 50 percent; however, due to the small number of claims in the window, SC&A recommends the subcommittee expand the targeted PoC range from 45 to 52 percent to 40 percent to 55 percent.

If we could go back to the previous slide just a

moment, we'll take a look. We have one percent of roughly one percent of all NIOSH claims that we are going to review.

If we add 40 percent to 44.9, then we have another five percent. So we have six percent of all the claims that we're going to look at, plus the small number in the PoCs that are compensated.

So that's what -- let's go back now to the next slide. So we've decided to try and expand the subcommittee's reach by looking from 40 to 55 percent, which gives us a better selection.

Now, let's go on to the next slide, the next chart, comparison of decade of first employment evaluated by the subcommittee with the population of claims reviewed by NIOSH.

As you see and as you might not be surprised, when we are looking at -- when we started looking at the -- when the subcommittee was looking at the cases that we wish to review, we tended to look at people first who had been, for many years, for decades in the industry.

And so we are -- we are -- we looked, for example, at more people -- the larger percentage from the 1950s than we did -- than NIOSH did, and that was the same for the 1940s.

In other words, we looked at the old-timers' long record, lots of data and the potential for a large exposure.

But in the course of doing that, we now started -- if you start to look at the 1970s, the percent we are looking at is smaller than the percentage that NIOSH looked at. And that's true in the '80s, in the '90s.

So as you might guess for the next slide, the SC&A recommended that the subcommittee increase sampling of claims with an initial decade of employment beginning in the '70s.

And these are represented in the cases reviewed by the subcommittee to date so -- and we accepted that.

And the next slide, the next chart, we looked at the comparison of employment duration percentages in cases reviewed by the subcommittee and the population of claims from NIOSH.

And as you see, it's somewhat linked to what we just -- the previous slide we saw for folks who are, you know, 20, 30, 40 years, we are selecting a larger percentage than NIOSH has by now.

And that if we start looking at people who have five to ten years, or even 10 to 20 years, they -- and NIOSH looked at a large -- NIOSH has a larger percentage of cases than we have reviewed on the subcommittee.

So again we have a recommendation -- or SC&A has a recommendation, which we accept, that the subcommittee make a concerted effort to select some cases to evaluate shorter employment periods to ensure shorter employment periods are adequately represented.

Next slide, next chart. This is interesting and important, I believe, the historical breakdown of female claims by file year.

Now, these are the NIOSH -- these are the claims from female -- these are from female claimants since we had -- since the Advisory Board was set up.

Initially, roughly 10 percent, 11 percent of the claims were female, but over time, as you might expect in this, the percentage has increased so that most recently we're at -- roughly a little over a quarter of the claims are from female claimants if we look at the average.

So on average, if we go over the entire range of years in the -- of our board, the average is 14.3 percent.

So the recommendation on that -- well, no. The next

slide is -- the next slide will say what have we reviewed?

Well, I'm -- I regret to say that we have only -- the subcommittee has only looked at 10 percent -- only 10 percent of the cases that it reviewed were from female claimants.

And that is -- if you go back to the previous slide, that 10 percent is less than the average over the lifetime of our board and clearly we need to make up for that.

I recall, and maybe some of you also remember, board members, that in the early years we weren't making a concerted effort to make sure that we covered female claimants.

We only started a little over a decade ago focusing on that as a criterion -- as an important element of the cases that we selected.

So if we go down to the recommendation, we clearly have work to do. SC&A suggests that we select a minimum of eight female claims per set of 30 cases to increase female representation going forward.

Now, I note, please, we said a minimum of eight female claims. We normally have sets of 30 cases that we look at and eight out of 30, right, is a little over 25 percent.

Well, we are currently getting claims from females of greater than 25 percent. So we -- this is really a minimum of eight and actually would be often -- we will select 9 or 10 to try to get ahead.

Whether the percentage of females who are claimants is growing, I mean, it may not stop at 26 percent. It might stop at 50 percent and -- or it might go up to 50 percent or more.

So we have got to look at a minimum of eight and I think the subcommittee certainly was thinking that we're really going to try to go for 9 or 10 or more to

try, if you will, to catch up to where we are today; but this is an important change and, we believe, a good one.

Next chart. Yeah, here's a problem and I really appreciate Rose pointing this out and I hadn't quite thought of it that way.

These are the NIOSH cases completed to date for sets 27 and 29. Those are each sets of 30 cases that we're reviewing.

The 27th set was completed in 2018, and the 29th set was completed in 2019. So take a look on the chart, 2018 and 2019.

In 2018, we were still reviewing charts from 2010, right, a decade previous. And of course our protocols change, our procedures changed, they're modified and improved, but, nevertheless, we're looking at old ways that -- we're trying to look at older ways that people evaluated dose reconstructions and are not current.

And so the recommendation was -- it is the next slide in the case -- that the subcommittee focused -- SC&A recommends the subcommittee focus on evaluating cases completed by NIOSH within several years of the review date to ensure that the Advisory Board is encountering and reviewing cases that use the most recent revisions and guidance documents. That makes good sense, we agree, and we adopted this.

Next slide. Now, this is an interesting -- I think an interesting one about the representation of smaller and larger sites.

What we first looked at and -- SC&A first looked at the large sites underrepresented among the subcommittee case reviews.

The criterion for a large site is that the sites -- a large site would have at least 100 claims. And underrepresentation, in this case, means that at least one or more subcommittee review cases were

needed to reach one percent of all dose reconstructions from that facility review.

Now, please remember that the commitment of the Board has been that 1 percent of all dose reconstructions will be reviewed by the committee.

There are some that may require us -- which are complicated facilities, may require us to do more than one percent. But obviously if we want to get one percent overall, we would like to have as much as possible, all of the individual plants at one percent or very near.

We identified six facilities where we need at least one additional case review to get to one percent and mentioning Tonopah Test Range, of course, earlier in this meeting.

The numbers of cases that we need to review from among these six are -- vary from two to six or seven, I believe. I'm not actually sure if it's six or seven. I didn't check.

The Kansas City and Portsmouth plants have six, I believe. And the ones -- the Wah Chang, Iowa and Tonopah need two more cases to be reviewed. So we're doing pretty well, but those are ones that we need to talk more about.

And the next slide. We've identified six locations with 100 or more claims that are underrepresented by at least one subcommittee-reviewed case. SC&A recommends additional cases from these sites be targeted when possible.

And by expanding the scope of the sites by looking at PoCs within 40 to 55 percent, I will hope that that will help us select this.

The last slide. I do want to mention to the Board, what about the smaller sites? I mean, obviously we're looking at the larger sites. We're a little short on six of them.

So the subcommittee is always trying to make sure the facilities with less than 100 claims are not overlooked, they're in the selection of cases for review and it has, as you note from the earlier reports, we have been successful, the reports to the Secretary.

But for this review, the subcommittee has so far reviewed 72 from among the approximately 3,150 claims filed by covered facilities with less than 100 claims processed by NIOSH. So that gives us a 2.3 percent rate of review for these often smaller facilities.

So I'm making this point for the Board to just say that we're, I think, doing a reasonable job on the large facilities, but very importantly we are not ignoring the smaller facilities. And that's been true for some years in the subcommittee.

So with that, I think there were -- are there questions -- oh, pardon me. No, no. The summary -- okay -- of what we've done:

Expand the PoC targeted range from 45 to 52 to 40 to 55 percent. That's probably the most important.

Increase sampling of claims beginning in the 1970s and laters.

We will try to increase sampling of cases with shorter employment less than 20 years.

And also very important to select at least eight female claims per 30 case set.

Next to the last, select cases completed within several years of NIOSH review and, when possible, target underrepresented sites.

With that, I think we're open for question -- actually, maybe -- I don't know, Rose, if you would like, since you were the lead author on this report -- this fine report, if you would like to say something and then we go open for questions.

I don't know if you would, but perhaps you would.

Ms. Gogliotti: That was a good summary, Dave. I want to point out that I don't think we're recommending not reviewing cases that fall outside of these boundaries.

I think it's important that we continue to review cases that don't meet these criteria also.

Member Kotelchuck: Yes.

Ms. Gogliotti: These were things that the subcommittee recommended to focus on.

Member Kotelchuck: Right. Okay. Good. Good.

Are there questions?

(Pause.)

Member Kotelchuck: Okay. Actually, Henry, I think you actually take the questions and --

Chair Anderson: Yeah, that's okay. Any questions people have is --

Member Kotelchuck: Yeah.

Chair Anderson: This is a very good report and I'm glad to see that you're continuing to track these kind of things.

It's easy just to select the cases and not pay attention to their representation. So I think actually you've done quite well on representation and this is really somewhat of a minor tweak to the approach you've used.

Member Kotelchuck: We can always do better and we always try.

Member Clawson: And, Andy, that's, you know, I'd like to thank Rose for this, too, because SC&A and Rose are very good --

Ms. Gogliotti: Thank you.

Member Clawson: -- about looking at what we're doing. And if we're -- we brought up a little while ago in our board meeting and -- world work group meeting, and it is -- we're trying to get the best representation for everyone that we can, you know. We're always striving to become -- to refine it a little bit better and go from there.

So I think that -- I think it's a good move that we're going forward and I think Dave's done a great job of chairing this.

Member Kotelchuck: Thank you.

Member Beach: Dave, this is Josie.

Are we actually asking the Board to approve this or are we just explaining what the subcommittee adopted?

Member Kotelchuck: We talked about this at the subcommittee meeting. I don't think it is -- my understanding is we're not really bringing it for approval.

We're bringing it to inform and of course any comment from board members that can suggest improvements or things that we're not doing, that would be wonderful and we will consider it at the next board meeting, but I think it's more informational and also for comment if people wish to comment.

Member Beach: Thank you.

Member Kotelchuck: Or if they wish to criticize.

Chair Anderson: It's also helpful for the public to get a -- I mean, now we have a record of this where previously we would not.

I think it's important to see it and if anybody questions this, now we have a core document we can go back to and say, well, here's how we can answer your questions.

Member Kotelchuck: Right.

Chair Anderson: It's valuable to do and, I mean, the other would be when you report on the findings of the individual cases, that's important to know that, in fact, these have really been done quite well. You have not found any systematic problems in the --

Member Kotelchuck: Right.

Chair Anderson: -- dose reconstruction process.

Member Clawson: And the other thing, too, is each one of us sit on several work groups and it's always good for us to be able to look at and see that all of these cases are being evaluated.

And, like you said for the petitioners, Andy, that you can look at -- and this is what we are looking for, this is what we're trying to cover.

And as Dave said, we just wanted to bring this to the Board's attention, let them know that we are looking at this very systematically and that we're giving it the best coverage that we can.

Chair Anderson: Okay. We're running a little bit over into our break here. We have a -- the only thing remaining is our board work session.

So everyone want to take about a 15-minute break and, say, come back at 3:35 or do you want to just keep going?

Member Ziemer: Maybe a comfort break would be good.

Chair Anderson: I think we need a comfort break.

Member Kotelchuck: Okay. Very good.

Chair Anderson: Okay.

(Whereupon, the above-entitled matter went off the record at 3:19 p.m. and resumed at 3:36 p.m.)

Board Work Session

Chair Anderson: Okay. So we have the board work

session now and want to start with a little update.

I'm sure you all want to know what's happening with new board members and we have no work.

(Laughter.)

Chair Anderson: So we'll let you know as soon as we hear, but the one important thing, probably more important than new board members, is that Rashaun has done a marvelous job as reupping our charter which was set to expire last March.

So we now have been extended to September 30, 2023. So we're good to go. There will actually be a place -- when the new members come on, we will have a charter for them to operate with us on.

So those are activities -- I have one kind of procedures issue to -- and I think it kind of came up at this meeting and it's -- I can blame it on COVID.

The cybersecurity issue is -- we need to be sure that we have plenty of time for people to look at the materials prior to the board meeting as well as those presenting to have time to put together slideshows.

We tend to rely on SC&A to say, oh -- like they did with the Sandia as well as the reduction plant and others, they put together the presentation.

But when you have all of the various committees asking them to do something, it can be quite overloading. So we want to be cognizant of time.

And I think we'll try very hard to not schedule committee meetings that will have things to be brought to the board for discussion or approval.

At least we ought to be meeting two to four weeks before. So that isn't to say your committees can't meet closer in to a board meeting, but just be aware that you'll be left with giving verbal updates, like Dave did, of what's going on and not have to rely quite so much on SC&A support who are busy getting their presentations and reports ready for us as well.

So Rashaun and I will try very hard to not schedule committee meetings too far before the board unless it's really critical.

Our Sandia group got postponed because of unexpected illnesses related to the committee. So we should have been meeting in the early start of March and ended up with April 11th.

So that had to be -- we have to congregate those kind of things. So just keep that in mind when you're planning to put your committees together. Look at when we have the next meeting scheduled and try to, if you possibly can, get everybody together in sufficient time to get the repots in and, again, get -- transcripts often take at least two weeks to get put together.

So with that, we got a number of other things. We have -- I'm sure you've looked at the spreadsheets with comments and NIOSH's response to the public comments.

I don't know, Rashaun, if you want to go through those quickly.

Member Beach: Can I ask, Andy, are we going to do work group updates? I actually don't see that on there.

Chair Anderson: Yes. That was going to be next.

Member Beach: Okay. Thank you.

Dr. Roberts: So the board members did receive the log for public comments that were submitted in our December -- or the Board's December 8th and 9th 2021 meeting.

And many of the comments, if you all have had a chance to take a look at them, were about the Pinellas SEC.

There was of course a recommendation to establish a Pinellas work group and there were a number of questions raised about the Pinellas SEC Evaluation

Report.

However, I did want to note that the work group -- the Pinellas Work Group had already been reestablished back in December of 2020 and was just awaiting the ER and also SC&A's review of the ER. Once SC&A has completed that review, then the work group can meet.

During the public comment session in December also, there were a number of Pinellas workers who addressed the Board with their individual experiences.

And then finally, there were some comments about making various documents available to the public more quickly, or making them more accessible, and a FOIA request was mentioned in the comments.

And some of the documents requires, as NIOSH noted, requires use of the FOIA process. And also NIOSH noted that some of these documents are under DOE versus NIOSH.

So that's just kind of a summary of the public comments.

Chair Anderson: Anyone have any questions about the responses and the summary of the comments?

It's pretty standard of what we've done in the past. So if you do, feel free to comment and especially in advance.

If you see something that we have there that you don't think was adequately addressed, we can of course ask for additional information from NIOSH on it.

Member Clawson: Andy and Rashaun, I just have a question on these public comments.

I know that we see these, but is there any way that the petitioners and so forth see these? Are these documented on the website -- the NIOSH website?

I'm just wondering because it seemed like, to me, several of the questions that were raised by Pinellas and stuff were addressed somewhat in these and I was just wondering if --

Member Beach: Well, Brad, I think we used to read those during the meeting and then whatever action was stated at that time -- at this next meeting. I believe that's how it was done in the past.

Member Clawson: Okay. I just -- yeah, I was looking kind of -- Josie, I was looking kind of more that the petitioners where they've got access to if they would be able to read those and be able to see the actions that were come back.

I know that we read them in, but I just -- somewhere where they could look at them and evaluate them.

Dr. Roberts: As far as I know, what is disseminated to the Board, what you see, is not something that I think is cleared for public posting.

Member Clawson: Okay.

Dr. Roberts: And I'm not sure that I know of something where they're actually posting these comments.

Member Beach: Yeah. Rashaun, I don't think we ever posted them. I think that if there was an action that was being handled by NIOSH or somebody else, it was just, in an abbreviated manner, it was stated and who had the action on it so that the public, when they made their comments, they knew that somebody was actually looking at what was said and what they brought up.

I believe that's how it was done in the past.

Chair Anderson: We can do that in the future. I don't have it here to pull it up to read, so --

Dr. Roberts: Yeah. I think in this case there are a number of items that appear to be in the public comments that are really pending the review of

SC&A.

And I think those responses are noted in the log, you know. So a lot of that revolved around it.

A lot of the other comments, again, spoke to individual experiences. So I'm not sure that there were particular questions, you know, from those, quote/unquote, testimonies that, you know, would be something, you know, that we would respond to.

Member Beach: Yeah. And I don't think all of them were responded to just if there was somebody that had an action associated with a comment.

Member Ziemer: Actually, some of the comments were handled by the appropriate work groups.

Some were handled by the -- if they were SEC-related, I think our SEC Washington person often followed up with them.

Typically, the main ones we want to follow up are the ones who are -- the people who want to hear the responses are the people who ask the questions.

So the key thing was to make sure that whoever raised the question, there was a response in some form.

Typically, it was the work group if there was some technical question, or sometimes NIOSH answered the question directly such as the one that Pinellas raised that -- no, it wasn't Pinellas.

Someone raised questions about the original Gaseous Diffusion Plant and so on, and some of those questions are questions that would either have to be answered by NIOSH or by Department of Labor, actually.

So the main thing is to make sure that the appropriate people were addressing the questions.

Chair Anderson: Okay. So next let's do work group reports.

Member Beach: Andy, I have two of them to do.

Chair Anderson: Yeah.

Member Beach: Do you mind if I start?

Chair Anderson: Go ahead.

Member Beach: I wanted to start with Metals and Control. We last met on September 2nd of 2020.

We do have reports in from NIOSH and from SC&A; however, I was kind of holding off scheduling a work group meeting waiting for the cybersecurity to be over with, but I'm seeing that that's probably not going to happen for some time.

I did ask NIOSH to post several documents into the virtual web folder. So those are available.

I asked SC&A to put together the past meetings, past discussions, papers, kind of bring them all together so that we're sure, as a work group, we're not missing anything.

Once I hear from Bob that that is ready, then I think I'll get with Rashaun and hopefully we'll get a schedule -- schedule a work group call probably in early summer, maybe end of June, 1st of July. So that's Metals and Control.

Chair Anderson: Okay.

Member Beach: And then I wanted to move on to LANL, if you're okay with that, Andy.

Chair Anderson: Yes, go ahead.

Member Beach: I want to start -- we had a work group meeting. You heard from Chuck on March 23rd and I want to start this with an apology to NIOSH, LaVon and the working group.

I missed a communication that was from LaVon -- excuse me. It was dated January 30th, 2020, where in the middle of that email LaVon noted that the

number of RWPs and the number of people citing them, that NIOSH felt that they could go ahead and code the entire set allowing them to analyze the set negating the need for a sampling plan.

And I have to say I'm sorry that I set the tone for that meeting because of that missed communication, and I jumped to the conclusion that the work group was not informed when, indeed, we were.

So NIOSH did present the two documents, as Chuck pointed out, the 102 and the 101.

We did task SC&A with the review of both of those reports, and we also tasked them with looking at all the captured RWPs to develop a sampling plan for the work group.

So I do apologize for that and hopefully I won't miss those in the future.

Chair Anderson: Other work group updates?

Member Clawson: Well, I don't have an update, but I do have an apology to LaVon. And I -- after this came forth to us, I did apologize, but also, as you said earlier, it's very important to be able to get these documents to us at least a week before.

Because if we would have been able to get this, I think that this missed communication would have been taken care of because I first started looking at this on Friday afternoon and our work group meeting was on Monday.

So it comes back to what you said earlier, Andy, about being able to give sufficient time for everybody to evaluate and be able to bring into it what was put in there, but I do owe an apology to LaVon and also to NIOSH.

Chair Anderson: So how about updates on your work groups?

Member Clawson: We're sitting in the same place we have been.

Chair Anderson: Yeah.

Member Clawson: We're still waiting for the Hanford for the co-exposure model, which we really don't have anything there. Everything else has been pretty well dormant.

Fernald, Pantex, all of these, we haven't got too much going on at either of those -- any of those. So I'm kind of still sitting in the middle.

I do -- when we get a chance, though, I would like to -- if the opportunity arises, when we would be able to -- I hear that the travel restrictions are possibly dropping and I'm wondering if we will be able to meet in person here in the future. That's about it for me.

Chair Anderson: A question for everybody since this is something I'm dealing with now, have you looked at your Smart Cards and are they all current and when will they become noncurrent?

Mine runs out in June. When you say "travel," let me tell you trying to arrange travel is --

Member Ziemer: Mine just ran out.

Chair Anderson: Yeah.

Member Beach: Mine's in June and I already sent the email to Rashaun. It was early, but she's on it.

Chair Anderson: Yeah.

Member Clawson: I'm glad you brought that up because I just noticed mine here a while back, too, and I -- Rashaun is taking care of that and mine's set up for in July.

Dr. Roberts: Let me just tell you guys there have been some administrative changes in various processes.

I used to be the person to go submit a form for the Smart Card renewals, but now someone else is doing that.

So you know, things are not quite as streamlined as they used to be. So please bear with -- as we are trying to accommodate these changes that have taken place, appreciate your patience.

Chair Anderson: But it does mean if you're using your computer, if it isn't good, you've got to get some special dispensation to be able to get into the CDC data system that we want to use.

Member Beach: Well, you can't.

Chair Anderson: No, I know -- well, you can get a temporary extension, but that's not an easy task either.

Member Beach: What about laptop updates? I know mine's fairly new, but I know there's several people that are having issues with them. Is that something that's being worked also?

Chair Anderson: There -- yeah -- well, I don't know if it's being worked on. I know at CDC they're looking at replacing a lot of those because there are new software and things that don't work on them.

That was the problem with mine. All of a sudden the computer would not recognize my network at home.

And of course CDC said, oh, you got a problem with your network, but it had been working just fine.

And then they looked, oh, you got a real old computer. That's why it hasn't been able to update anything either and the Zscaler doesn't work on it.

So if you have an old computer, you ought to check in with CITGO because they are replacing them and most of the people in Atlanta have gotten the new computers.

And, as I said, I just got mine and it really makes a difference. So --

Member Kotelchuck: Oh, it does.

Chair Anderson: Yeah.

Member Kotelchuck: It really does. I got a new computer. Mine ran out and ran down, but the new one really works fine.

By the way, I still yesterday found out that the only thing that doesn't work on my new computer is my picture on Zoom. I get Zoom and I couldn't get a picture.

I got a picture yesterday and today at our meetings because I'm going on my home computer since this is open to the public.

So -- but I'll get that fixed. I'm going to call it pretty soon, and I'm sure it's just a little glitch.

Chair Anderson: Well, I learned with my new one here -- of course you don't get any instruction or anything with it.

Member Kotelchuck: Absolutely.

Chair Anderson: It came with the -- it now has a camera cover, a little switch that covers the camera. So when I first started, I had no picture.

Member Kotelchuck: That's right.

Chair Anderson: I could see --

Member Kotelchuck: That's right.

Chair Anderson: -- and then at the top there's a little slide thing and it covers it up.

Member Kotelchuck: Oh, I'll find that. Thank you. You've solved my problem already. Thank you.

I had one other issue on the Ames Working Group. Tom has retired, Tom Tomes, and I don't know who's the staff person on that.

I'm supposed to get information to do -- update the Evaluation Report.

Mr. Rutherford: Dr. Kotelchuck, this is LaVon Rutherford.

I have temporarily, at least, taken over as the site lead for Ames --

Member Kotelchuck: Okay.

Mr. Rutherford: -- because I couldn't find anyone else to pass it off onto.

Member Kotelchuck: All right.

Mr. Rutherford: So I will give you a quick update if --

Member Kotelchuck: Would you?

Mr. Rutherford: -- you'd like.

Member Kotelchuck: Yes, I'd love to hear it.

Mr. Rutherford: We are working on -- we are still getting some additional -- going through some additional data that we have received.

We've also been working through the 835 era at Ames and trying to -- the 10 CFR 835 era and figuring our path forward with that.

We're working on a TBD revision that will -- we are going to ensure that all the SECs are incorporated appropriately.

And I will make sure that as things progress, I will get updates to you and the rest of the work groups.

Member Kotelchuck: Thank you very much. Okay. Very good.

I'm always embarrassed by the line at the end of the report that says, this committee has never met, and it is a strange thing.

It's an accident of nature that the staff in reporting back to us said, hey, there's no chance in the world that we're going to be able to do a -- that we're going

to be able to do a regular -- or that we -- put it this way: We can't do an SEC.

So the Board listened and agreed we couldn't do an SEC. And so we didn't meet and we're just waiting for updating the Evaluation Report, but it's an accident of nature that we actually have not met once, but things have been taken care of and are being taken care of now by LaVon, and I'm there to help and work with him.

Chair Anderson: Okay. Are there any other updates from --

Member Clawson: I just want to make a comment because Dave brought up something that -- a lot of us, as work group chairs, are uncertain of the changes within NIOSH.

And when these changes happen from NIOSH and other people take over these work groups and stuff, it would be nice if they would notify us of this so we kind of have a point of contact to go to to discuss some of these issues.

Member Kotelchuck: Yes.

Mr. Rutherford: Yeah, Brad. I agree. We need to do probably a little better job with that.

We are -- we have been providing updates to Rashaun as different things change, but we do need to probably give a little more updates to the work groups on that.

Member Roessler: I second --

Mr. Rutherford: We'll work on that.

Member Roessler: I second that, Brad.

Member Clawson: Thank you.

Chair Anderson: Rashaun earlier right after she took over, did put together a Word document with each of the groups that we had, as well as those that had

been closed, which is an impressive list.

And I think that's probably a good way that if NIOSH is going to change or SC&A is going to change, who's going to be working on something.

I think the lead to organize that is probably best with Rashaun and she can just update that list to us periodically.

Member Kotelchuck: Yes. Good.

Dr. Roberts: I'm not sure if the Ames contact was updated. There were a bunch of them, LaVon, where you said it was pending because I know you were trying to find replacements for the retirees, but I'll make a note of that in the master list and I can certainly recirculate it.

And if there are any other ones, how about if I give it to you first. You can look it over and then I can send it out.

Mr. Rutherford: Yeah, that would be great.

Yes, I did not update you on the Ames one because it just kind of came to me as default in the end, but --

Dr. Roberts: Okay.

Mr. Rutherford: -- yeah, I will -- yes, pass that back to me and I'll update it again. And as we move forward, I'll make sure I keep you updated as well.

Dr. Roberts: Thank you.

Chair Anderson: So Brad, how is Argonne-East?

Member Clawson: Well, you know, we're sitting right about there and I was going to get with Lori about that because I have nothing in the virtual area for Argonne-East.

And I was trying to find some documentation, but I'll get with her and see what we can put in there.

Chair Anderson: And then I'm just going through the list here. Then we got Blockson Chemical.

Member Roessler: Yes, Henry.

Chair Anderson: That's you.

Member Roessler: Yes. I was wanting to bring that up because I went to the website to look at the status on the various sites and I looked at some that I know I had been chair on. Blockson is listed, but it doesn't say it's closed and I don't know why.

And the other one that fits in the same category is Linde and that's not listed as closed.

And it seems to me those two should have been and we need to check on that.

Chair Anderson: And then there's Carborundum.

Member Roessler: Yes. Okay. Carborundum is not closed and this is probably -- NIOSH can probably explain this. I think there's been a change in the NIOSH people on that one.

My understanding is that we're waiting for NIOSH's review of a report that Dr. Anigstein was going to have prepared that was going to wrap things up on Carborundum. So I think we need an update on that one from NIOSH.

Mr. Rutherford: Actually, Dr. Roessler, if you look at the work group coordination spreadsheet that I sent out -- or actually Rashaun probably sent out, it -- what we're working on -- NIOSH is working with ORAU to draft a white paper.

If you go through that, it will say -- it talks about the MCNP analysis and --

Member Roessler: Yes.

Mr. Rutherford: -- the paper will be expanded with results and issued to the work group for resolution.

So we are working on some additional analysis that once that paper is completed and updated, we will get that to the work group.

Member Roessler: And who with NIOSH now is the one assigned to Carborundum?

Mr. Rutherford: She -- Madeline Cook. She is one of our newer HPs and I may have not gotten that to Rashaun as well. I don't know. I can't remember.

Member Roessler: I didn't know that.

Mr. Rutherford: Okay. I'm going to get the list and update it and make sure that all the board members have that as soon as possible.

How's that?

Member Roessler: Good. Good. And then as long as I've got the floor, I might as well finish. The one remaining question I have is on ORNL.

I think there's probably been a change there, too, at NIOSH. I think we're waiting for a NIOSH response to an SC&A evaluation from January of 2021 on exotic radionuclides, but I don't really know who to contact at NIOSH anymore on ORNL.

Mr. Rutherford: Dr. Roessler, I believe that Dr. Hughes sent out an update and I actually have that update up.

She sent that to you and the members of the work group on, let's see, looks like April 14th.

Did you not get that?

Member Roessler: Okay. That's another problem, I think, that we've been discussing and that's computers.

Mr. Rutherford: Yeah.

Member Roessler: She sends things to my CDC address because my Smart Card doesn't work and we

--

Mr. Rutherford: Oh.

Member Roessler: -- haven't been able to work around it yet. I've been closed out on CDC emails.

So anybody who needs to communicate with me will need to do it with my personal email address until we get this resolved.

Mr. Rutherford: Okay. I can read you what that update was.

Member Roessler: Good.

Mr. Rutherford: Dr. Roessler, members of the ORNL Work Group, this is a brief update on the status of the work NIOSH is doing to respond to issues related to ORNL. The last work group meeting was held in June of 2021. Three of seven findings remain open for NIOSH to address. Of six observations, four were closed and two remain for NIOSH to address. NIOSH is working on addressing the remaining issues by developing a co-exposure approach for exotic radionuclides and advising the dose reconstruction approach presented for iodine at ORNL. The iodine approach has been removed from RPRT-0090 and will be moved to the co-exposure effort. ORAU-RPRT-0090 is currently in the final stages of being revised for clarification of various issues raised by SC&A.

So I think that's covered. So we are working on a revision to RPRT-0090 that is very close to being finished that will come back to the work group.

Member Roessler: And I assume you'll send me that. You've got my other email address?

Mr. Rutherford: Yes, I do have that, Dr. Roessler --

Member Roessler: Okay. Good.

Mr. Rutherford: -- and I will get that to you.

Member Roessler: Thank you, LaVon.

Mr. Rutherford: Um-hm.

Member Clawson: Hey, this is Brad again.

LaVon, when you do this update, could you put in the person's name and their CDC address and possibly even a work phone number that we could contact them and be able to talk to them?

Because with this security issue and this new virtual reality or virtual workspace that we have, it's very hard to be able to -- they say, well, if you know what you want, give us a call, but I would really like to be able to speak with the people and see what the updates have been and -- so I can -- so I even know what to ask for --

Mr. Rutherford: Sure.

Member Clawson: -- what is going on. So just so we've got, like, a point of contact and we can actually talk to them in person.

Mr. Rutherford: Yes. We'll get that information to you.

Member Clawson: Okay. Sounds good. Thanks.

Dr. Roberts: Can I just say something really quickly? Just in terms of the use of personal emails, we really want to do that, you know, sort of move away from having to do -- conduct business with personal emails.

They may be temporarily, you know, if you do need to get some information in, but we really need to be doing more business on the CDC accounts.

Member Roessler: Rashaun, I'll need to talk to you about my Smart Card and I'll do that. I'll give you a call on that.

Dr. Roberts: Okay. Great. Thank you.

Member Valerio: Rashaun, this is Loretta.

Chair Anderson: Go ahead.

Member Valerio: So Rashaun, I have a question for you.

When I went to Denver, I think it was in '19, for my Smart Card, I -- she -- the date on the card shows it expires in March of 2024, but -- I believe her name was Cheryl Lynn that helped me with the card when I was up there, had mentioned I would have to go back in two years.

So when I brought that up last fall, I believe it was, Zaida was great, you know, she responded right away and she said maybe it's just a certificate and not the card itself.

So the card works. I am getting emails and, you know, I am able to access my emails.

But when I go into virtual volumes when I'm going in to review the documents to prepare for a meeting, it won't accept my Smart Card. It says there's something wrong with the certificate.

So I'm not sure if it's the card itself or -- and I think I spoke -- I think I brought it up to Rose.

I can still get into virtual volumes if I use my user ID and my password, so I'm still able to access that way, but I -- I'll follow up with you as well later on about, you know, when my Smart Card actually expires.

So it's just, you know, being able to access one application, but not the other with the Smart Card. So just giving you a heads up on that.

Dr. Roberts: Yeah. I mean, I don't have an explanation for why those things are happening, but, yeah, do reach out and maybe we can engage some of the people who can have some sort of an answer to that.

Member Beach: Rashaun, I have one. Sorry, Andy.

Chair Anderson: Okay.

Member Beach: Is there somebody at ITSO or -- that understands the work that we do with our Smart Cards, our certificates, that -- we used to have a contact, someone that would actually come to the Board meetings and we could call him.

Is there not anybody familiar with --

Dr. Roberts: I don't know of anybody.

Member Beach: Okay.

Dr. Roberts: Zaida, do you know anyone that does that? As far as I know, everybody's just like --

Member Clawson: Rashaun, to help you out a little bit, so we used to have somebody when we were fist getting computers, to come set up with us.

We've got a -- I don't want to say his name over the phone and stuff like that, but he's a remote user specialist and he's been dealing a lot especially with us because we never tie into the actual system, you know, hardwire into it.

He understands a lot of the problems that we get into and he's always been my point of contact.

I actually bypass -- if they start the card and -- I go directly to him to be able to get things to help because he's been the only one that's been able to address our issues because ITSO looks at us that we are just an employee that are able to get in all the time and plug in, and we're not.

And so he's been really good for us and I can give you his name and stuff, but I don't want --

Dr. Roberts: Sure. If you could send that name, that would be great. But as far as someone officially just assigned to this program, I don't think there is anyone like that. But, yeah, the name would be helpful.

Member Clawson: Okay.

Chair Anderson: I would say maybe wait until we get new board members, but at some point we ought to have a meeting in Cincinnati because they have a capacity there to make the cards and do the fingerprinting and get your photograph.

And those people who need card replacements or -- we could probably schedule that through there. Same as Atlanta.

Otherwise for me to get a new card, they said, oh, you can go down to Chicago and then, oh, I can go to Chicago to have my photograph taken, fingerprints, but the card has to be printed in Cincinnati or in Atlanta and then mailed back to Chicago and I have to come down a second time.

So the best thing is to go directly to where they not only can gather all the information, but also print the cards, put it in your computer and link you so it synchs with the CDC site.

Member Clawson: Right. Well, Andy, that's one of the things -- and I go to Spokane and the individual up there that I work with, they actually send the card to them before I ever get there.

Chair Anderson: Yes.

Member Clawson: And when I come in, they -- we set up my computer, we authenticate everything and I actually get plugged into the system.

And it's a relatively short process and they've been very good with me in Spokane, and that's why I've been going there.

Chair Anderson: Well, it looked to me like the place I needed to go was Anchorage.

(Laughter.)

Member Kotelchuck: You should have stayed in New York, Andy.

Chair Anderson: Yeah.

Member Kotelchuck: All you need --

Chair Anderson: But I'm all good. I'm all good now. We're going to work it out.

Member Kotelchuck: -- is just $2.75 for a subway ticket down to the main office and they do everything.

Chair Anderson: But now to travel you have to get -- there's a risk assessment that's done --

Member Kotelchuck: Right.

Chair Anderson: -- on whether you really need to do the travel.

Member Kotelchuck: By the way, that's true. Well, for my Smart Card I take the risk, I'll tell you. Can't live without it.

Chair Anderson: Okay. So we're kind of --

Member Kotelchuck: Right.

Chair Anderson: -- going through here with personal -- let's move on to the scheduling of our meetings.

Member Kotelchuck: Right.

Chair Anderson: So Rashaun, take it away.

Dr. Roberts: Well, let me check in.

So did we end the work group and subcommittee reports? Was there anything else on that? Any other report-outs?

Chair Anderson: I don't think anybody else --

Dr. Roberts: Okay. Then, yes, by all means, let's go ahead and talk about scheduling.

So so far on the books we have a telephone conference already scheduled for June 15th. And all of these, except for the two-day deals, start at 11:00 a.m. Eastern.

Then after that, we have --

Member Ziemer: Sorry, can you repeat that date? Rashaun, could you repeat that date, please.

Dr. Roberts: Sure. That -- I have it for June 15th.

Then we have a full board meeting in person, and I'm hopeful that we will actually be able to do the in-person, for August 17th through 18th.

Last time we met, we entertained a couple of locations for the in-person meeting. I know that one proposal was for Savannah, you know. I don't know if other people have had time to think about different options for that.

I know that hasn't Idaho been a meeting point in the past, but we do need to have some discussion about where so that Zaida can start getting the arrangements in place for that. So thoughts on location?

Member Beach: Do we know what will be presented at the August meeting? I know it's pretty early, but SC&A maybe have an idea -- or not SC&A, excuse me, NIOSH.

Mr. Rutherford: Well, this is LaVon Rutherford.

I don't -- I don't -- I know there's no SEC new evaluations that are planned to be presented and Tim may know of additional technical documents or things that may be discussed. I don't know.

Dr. Taulbee: There will be a report coming out -- this is Tim -- a report coming out about our dose reconstruction methods for Argonne National Laboratory-West.

This is in followup to an Advisory Board question on INL -- or ANL-West, rather. And so that report will be coming out within the next month.

And so I don't think SC&A would have time to necessarily respond to that before that meeting;

however, it could be something that you might be wanting to get site or local input on this to what their thoughts are as part of SC&A's review.

Member Beach: And I don't think we've been up there before, have we, Tim? Do you remember?

Dr. Taulbee: No, this is Argonne-West. So this is out at INL.

Member Beach: Oh, it is INL.

Dr. Taulbee: Yes, this is --

Member Beach: I was thinking East, okay.

Dr. Taulbee: Yeah.

Member Beach: Yes.

Dr. Taulbee: So from that standpoint, I think the INL site might be more suited, but --

Member Beach: Henry's probably got his hand up over there for INL.

Chair Anderson: Yeah.

Member Beach: And Jim Lockey, okay. So that's one idea. And I don't remember why we thought we were going to -- wanted to go to Savannah River the last meeting.

Member Kotelchuck: Because it's warm in December.

Member Beach: Yeah, and we haven't been there for a while.

Member Clawson: Well, and I'll tell you, too, the SEC that we just put in there needs final reports that are coming up.

Member Beach: Oh, correct.

Member Clawson: There's Pinellas, too, so --

Member Beach: Yeah. Pinellas would not be a bad

idea.

Member Lockey: (Audio interference) -- holding it in Cincinnati and then you could have Smart Card certifications and maybe a computer training session at the same time to try to eliminate some of the travel issues.

Chair Anderson: Yeah, I -- that's what I was thinking if we get -- if we have new members coming on, they're going to have to have that as well.

So we could then have a whole session there for the Board and to go through what all the various procedures are for them as well, but I'm not sure when we'll hear about that, but otherwise Cincinnati would be fine.

Member Lockey: They could have the Board meeting and the computer training as an extra day.

Chair Anderson: Yeah.

Member Lockey: That would cut down the airline travel for most people to one trip rather than two.

Member Kotelchuck: That's a good idea.

Member Beach: Well, depending on how many people -- my Smart Card expires in July. So that wouldn't help me, but I don't know what other people are -- and I like the idea of Pinellas simply because there's a lot of --

Chair Anderson: Yes.

Member Beach: -- public comments on Pinellas. I don't think we've been there for a while either. It's been years, if ever.

Member Lockey: Josie, I was thinking that a computer training session for some of the board members would be very, very useful.

I know you're pretty attune to it and I am too now because I sit here in Cincinnati, but that's one of my

concerns.

Member Kotelchuck: That would be good.

Member Clawson: I understand what you're saying there, Jim. But if you remember right, we've had -- wherever we've traveled to, we've actually had -- ITSO will send a person out to us to be able to help us with any of these issues, you know. That's an option, too.

Member Lockey: That's a good idea. That's a great substitute. In other words, if they can send somebody to wherever we're going and add a session to it, that would be great.

Member Beach: Yeah, the day before our meeting would be excellent.

Member Lockey: Yeah. I'm trying to eliminate an extra travel date.

Member Beach: I understand that.

Member Schofield: It's been a long time since ITSO actually sent someone out to one of our board meetings.

I don't know what it would take to get that done again, but that is a good idea, Brad.

Mr. Calhoun: This is Grady and I don't want to be negative here, but I just have a hard time thinking that's going to happen.

I'll certainly ask, but I can't see somebody sending somebody out there. Just honestly, I just can't.

They're very responsive to us when we send them an email or make a phone call, but I don't see them sending anybody out there.

Member Lockey: How about to Cincinnati? Would they do that?

Mr. Calhoun: They're not from Cincinnati either, are

they, but there's probably some people that would help.

I mean, I'll ask, you know. What exactly are you looking for, you know, because it may not be ITSO that helps you navigate the virtual volume. It may be Lori.

It may be somebody in ITSO that helps you get into the virtual volume because there's an issue. So I would need to describe the issues, I think.

Member Clawson: Grady, that's one of the big issues. We can learn the virtual workplace and everything else like that. Rose has been very good about that same as Lori, but the issue is especially with remote users like what we are, and this is why I am dealing with ITSO.

They actually -- I request the individual, which is a total -- he's in Atlanta and he's completely remote because our processes are so unique that there's just certain problems.

The way they set up the computers are set up for people to be able to plug into the system, get the updates and everything else and we never plug in. That's what he's told me the issue is.

We used to get those people when we were first getting our computers, came to meetings with us and just took a day to be able to help work through some of our issues and stuff. So I guess all we can do is ask.

Ms. Adams: This is Nancy.

I may be totally wrong here, but I remember that who came out was from the IT section at DCAS to those meetings to help with all of the laptops. It was not ITSO.

Member Clawson: Well, you know what, Nancy? You might be totally right on that, too, now that I'm thinking about that.

Member Valerio: Yes, it was.

Member Clawson: Okay. I apologize then. I used the wrong terminology there, but --

Mr. Rutherford: It was Leroy that used to always come out. Leroy Turner came out to most of the early meetings.

Member Clawson: Wow, Bomber. You remembered his name even. That's pretty doggone good at your age.

Mr. Rutherford: That's right.

Chair Anderson: Okay. We sort of got off track on the sites.

Do we have anything else you need, Rashaun?

Dr. Roberts: Well, yeah. I mean, it would be nice to try to identify which one we need to start planning for.

Chair Anderson: Yeah.

Dr. Roberts: It sounds like there are a lot of different possibilities here.

Member Beach: So what do we have? Idaho, Savannah River and Pinellas. Those are the only three I heard -- oh, and Cincinnati.

Dr. Roberts: Cincinnati.

Member Beach: As much as I'd like to go to Cincinnati, I'd rather go somewhere where the petitioners are available.

Dr. Roberts: Right.

Chair Anderson: I think Pinellas would be a good --

Member Beach: I agree, and I wouldn't mind if we go to Pinellas trying to get a site tour.

We've done that in the past. I don't know if that's

something that's doable nowadays.

Member Clawson: My understanding is Pinellas is pretty well tore down.

Member Beach: Is it?

Dr. Taulbee: That's correct, yes.

Member Beach: Okay. All right. Scratch that idea.

Member Clawson: But, you know, this is an opportunity for the people, the petitioners and stuff to be able to come in and be able to have an opportunity to let us know what they feel.

Member Beach: And we are talking about the August meeting, correct?

Dr. Roberts: August. And presumably there might be December as well that we would do in person, but, yes, for the time being we're talking about August. So Pinellas is --

Chair Anderson: Yeah.

Member Schofield: I think Pinellas would be good. Andy could go fishing.

Chair Anderson: Yeah.

Member Clawson: You know, depending on what troubles that Zaida has or whatever, I figure my personal opinion is Pinellas or Savannah River.

Dr. Roberts: Anyone else have a different recommendation? It sounds like most are saying Pinellas.

Member Lockey: Pinellas is good for me.

Dr. Roberts: Okay.

Chair Anderson: Where do you fly to for that?

Member Valerio: Tampa.

Dr. Taulbee: Tampa.

Dr. Roberts: Okay.

Member Lockey: It's going to be hot.

Member Beach: Yeah. I'm almost thinking if we did Idaho in August and then Pinellas at the next one, but that's -- I know that might complicate things. I just don't want to end up in INL in the winter.

Member Lockey: No. Definitely not.

Member Clawson: You wimps. Snow machining, come on.

Dr. Roberts: Um-hm. And there might be more movement on Pinellas by December.

Chair Anderson: Yeah.

Dr. Roberts: I mean --

Member Ziemer: Pinellas in December would be a good location, but it looks much too much like a vacation to the administrators.

Member Lockey: I think Josie has a good idea. Let's do Idaho in August and Pinellas in the winter.

Member Schofield: I agree with that.

Member Lockey: I think it's a good --

Member Schofield: Only Brad would want Idaho in the winter.

Dr. Roberts: Okay. All right. Well, it sounds like there's some agreement there. So Idaho in August, Pinellas in December.

So other than that, we have a teleconference set up for October 20th. And then I just said the in-person December 7th through 8th is, I think, the days we came down on for that.

We do need to schedule next February and next April

just to have it planned out for a year.

Member Lockey: When was the December meeting?

Dr. Roberts: The 7th and the 8th.

Member Lockey: Wednesday and Thursday, okay.

Dr. Roberts: Yeah, I think there was some discussion about the days.

Member Lockey: There was.

Dr. Roberts: So February of 2023 is what we were looking to identify a tentative date for. I think this year we did it sort of mid-month.

Would that -- the week of the 13th, for instance, would that be potentially doable?

Member Beach: Okay with me.

Chair Anderson: 14th is Valentine's Day.

Member Ziemer: That's okay.

Member Beach: So we usually do those on Wednesday, right?

Dr. Roberts: Wednesday or Thursday.

Would people want the 15th?

Member Beach: It's okay with me unless Andy needs to recover.

Member Ziemer: This is a telecon, right? Teleconference?

Dr. Roberts: Yes, just a teleconference. Correct. Okay. So tentatively February 15th.

And then April would be presumably a face-to-face and we generally have those the last week of April.

Although this year, there's been a lot of other NIOSH activity on the last week of April.

Could we do the week of the 17th, maybe?

Member Beach: That's good. Easter's early in April. So that would take that out of the way.

Dr. Roberts: Okay. So something like the 19th and 20th --

Member Beach: Sure.

Dr. Roberts: -- of April.

All right. Well, I think that gets us up to speed and I think that's all we need to do for now for this.

Member Kotelchuck: 19th and 20th of April?

Dr. Roberts: Yes. Yes.

Member Kotelchuck: Okay. Okay.

Dr. Roberts: Tentatively.

Member Kotelchuck: Good.

Dr. Roberts: And then February 15th for the teleconference.

Member Kotelchuck: Right.

Dr. Roberts: Okay. All right. I think, Andy, that wraps it up for me.

Chair Anderson: Okay. I don't have any other things.

Other topics on people or issues you'd like to raise?

Member Ziemer: I move that we adjourn.

Chair Anderson: Yeah, okay.

Member Beach: I'll second that.

Chair Anderson: Okay. Well, with that, we'll close it out at 4:30 your time, 3:30 my time, and we're adjourned.

Thanks everybody.

Adjourn

(Whereupon, at 4:30 o'clock p.m. the meeting was concluded.)